

Growth Performance Management: The design and use of performance
management systems in entrepreneurial growth companies

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Abstract

This empirical study examines the design and use of performance management systems in three entrepreneurial growth companies. Entrepreneurial growth companies are young, innovative, venture capital funded firms that grow rapidly in revenue and headcount. Previous studies show that the adoption and evolution of performance management systems is essential for the growth of such firms. However, previous studies provide only limited insights into how entrepreneurial growth companies design and use their performance management systems in order to achieve growth. An action research approach is used to gain access to, collect data from and learn from three case studies: AlphaCo, BetaCo and DeltaCo. The combination of action research and Ferreira & Otley's (2009) 12-questions performance management system framework allows to gather in-depth empirical evidence and to holistically analyze all aspects of case studies' performance management systems.

The study examines a total of 54 performance management practices and themes. Emerging patterns are remarkably consistent across all three case studies. Patterns confirm this study's theoretical proposition as well as the growth stage contingency model. In order to grow, entrepreneurial growth companies design and use their performance management systems to facilitate organizational learning processes and to balance the organizational learning modes of single loop and double loop learning. Organizational learning is case studies' most relevant control problem. Organizational culture is used as primary mode of control to facilitate organizational learning as well as to achieve internal consistency and design performance management systems rather than inconsistent packages. In addition, the investigation of three in-depth case studies provides feedback to Ferreira & Otley's (2009) performance management framework and insights for performance management as an emerging academic discipline.

This study develops a parsimonious, testable and logical coherent theory about performance management system design and use in the growth stage. This theory is the result of practice-oriented action research. Proposed theory and methodological approach allow to derive concrete implications for managerial practice. Therefore, this study develops the concept of Growth Performance Management. This concept's central framework is the Growth Management Canvas. The Growth Management Canvas' seven components and 35 theory-based and empirically-tested questions allow to design consistent performance management systems and to adapt a growth company's performance management approach to the ever-changing situations and contexts implicated by rapid growth.

Zusammenfassung

Diese empirische Studie untersucht die Gestaltung und Nutzung von Performance Management Systemen in drei Wachstumsfirmen. Wachstumsfirmen sind definiert als junge, innovative, risikokapitalfinanzierte Firmen, deren Umsätze und Mitarbeiterzahl schnell wachsen. Studien zeigen, dass die Einführung und Weiterentwicklung von Performance Management Systemen essentiell ist für das Wachstum solcher Unternehmen. Diese Studien zeigen jedoch nicht, wie Wachstumsfirmen ihre Performance Management Systeme gestalten und nutzen. Diese Studie nutzt einen Aktionsforschungsansatz, um Zugang zu den drei Wachstumsfirmen AlphaCo, BetaCo und DeltaCo zu erhalten sowie empirische Daten zu sammeln und davon zu lernen. Die Kombination aus Aktionsforschung und Ferreira & Otleys (2009) 12-Fragen Performance Management System Rahmenwerk erlaubt das Erheben besonders tiefgehender empirischer Daten sowie die konsistente Analyse aller Aspekte der Performance Management Systeme der drei Fallstudien.

Die Studie untersucht insgesamt 54 Aspekte von Performance Management. Die sich herausbildenden Muster sind bemerkenswert konsistent über alle drei Fallstudien. Wachstumsfirmen gestalten und nutzen ihre Performance Management Systeme, um organisatorische Lernprozesse zu fördern und die organisatorischen Lernmodi des Einschleifen- und des Doppelschleifen-Lernens in ein Gleichgewicht zu bringen. Dabei wird die Unternehmenskultur als primärer Kontrollmodus genutzt, um organisatorisches Lernen zu fördern sowie um interne Konsistenz herzustellen und Systeme, anstatt unzusammenhängender Kontrollpakete, zu designen. Die Untersuchung der drei Wachstumsfirmen erlaubt zudem Rückschlüsse auf die Validität des Rahmenwerks von Ferreira & Otley (2009) und ergibt Erkenntnisse für Performance Management als neue akademische Disziplin.

Diese Studie entwickelt eine einfache, testbare und logisch kohärente Theorie für die Gestaltung und Nutzung von Performance Management Systemen in der Wachstumsphase. Diese Theorie ist das Ergebnis praxisnaher Aktionsforschung. Die entwickelte Theorie sowie der methodische Ansatz erlauben die Ableitung von konkreten Implikationen für die Praxis. Daher entwickelt diese Studie das praktisch anwendbare Konzept des Growth Performance Managements. Der Growth Management Canvas ist das zentrale Rahmenwerk. Seine sieben Komponenten und 35 theoriebasierte und in der Praxis getestete Fragen erlauben die Gestaltung von konsistenten Performance Management Systemen sowie die kontinuierliche Anpassung des Managementansatzes an sich ständig weiterentwickelnden Situationen und Kontexte, die schnelles Wachstum mit sich bringt.

Table of contents

Abstract	i
Zusammenfassung	ii
Table of contents	iii
List of Figures	vii
List of Tables	ix
List of Abbreviations	xii
1. Introduction	1
2. Theoretical Foundations	5
2.1. Research in management accounting and control	5
2.1.1. Management accounting, management control and performance management ..	5
2.1.2. The evolution to performance management.....	6
2.2. Performance management	8
2.2.1. Defining performance management	8
2.2.2. Frameworks in management accounting and control.....	11
2.2.3. Ferreira & Otley's performance management framework	11
2.2.4. Design of performance management systems	14
2.2.5. Simons' levers of control theory	15
2.2.6. Use of performance management systems	19
2.2.7. Performance management as system or package	22
2.3. Organizational learning	25
2.3.1. Defining organizational learning.....	25
2.3.2. Organizational learning processes.....	26
2.3.3. Organizational learning modes.....	28
2.3.4. Stages of knowledge framework	30
2.4. Entrepreneurial growth companies	32
2.4.1. Measuring growth	32
2.4.2. Life cycle theory.....	33
2.4.3. Defining entrepreneurial growth companies	35
2.5. Contingency theory.....	37
2.6. Theoretical model	39
2.6.1. The growth objective as contingent variable.....	39
2.6.2. Performance management and organizational learning	40
2.6.3. Organizational learning and firm growth	42
2.6.4. The growth stage contingency model.....	43
2.7. Literature review.....	45

2.7.1.	Growth factors in the entrepreneurship literature	45
2.7.2.	Management control systems in the growth stage	47
2.8.	Research question and theoretical proposition	51
3.	Methodology	53
3.1.	Philosophy of science	53
3.2.	Qualitative research in management accounting and control	54
3.3.	Research strategy	56
3.3.1.	Managerialist studies and action research	56
3.3.2.	Evaluating action research	59
3.4.	Research process.....	61
3.4.1.	Developing research question and theoretical proposition.....	61
3.4.2.	Theoretical sampling and finding case firms	63
3.4.3.	Research instruments and chain of evidence.....	65
3.4.4.	Sources of evidence for data triangulation	68
3.4.5.	Replication logic, analytic strategy and analytic technique	69
3.4.6.	Within case analysis	70
3.4.7.	Cross case analysis and synthesis.....	71
3.4.8.	Reporting analyses and results	73
3.5.	Quality criteria	74
3.5.1.	Quality criteria for qualitative research.....	74
3.5.2.	Quality criteria for action research.....	77
3.6.	Introduction to case studies	79
3.6.1.	Descriptions of AlphaCo, BetaCo and DeltaCo.....	79
3.6.2.	Conformity with theoretical sampling definition	81
3.6.3.	Descriptive statistics of action projects and empirical evidence	82
4.	Analyses and Results.....	85
4.1.	Performance management system design and use.....	85
4.1.1.	Vision and mission	85
4.1.2.	Key success factors	95
4.1.3.	Organization structure	97
4.1.4.	Strategies and plans	119
4.1.5.	Key performance measures	138
4.1.6.	Target setting.....	160
4.1.7.	Performance evaluation.....	172
4.1.8.	Reward systems.....	180
4.1.9.	Information flows, systems and networks.....	189
4.1.10.	Performance management system use.....	195
4.1.11.	Performance management system change.....	198

4.1.12.	Strength and coherence.....	202
4.2.	Performance management and organizational learning.....	213
4.2.1.	Vision and mission	213
4.2.2.	Key success factors	217
4.2.3.	Organization structure	218
4.2.4.	Strategies and plans	226
4.2.5.	Key performance measures	233
4.2.6.	Target setting.....	238
4.2.7.	Performance evaluation.....	241
4.2.8.	Reward systems.....	243
4.2.9.	Information flows, systems and networks.....	244
4.2.10.	Performance management system use.....	248
4.2.11.	Performance management system change.....	250
4.2.12.	Strength and coherence.....	252
4.3.	Evidence for the growth stage contingency model.....	257
4.3.1.	The growth objective as dominant contingent variable	257
4.3.2.	Performance management system design and use	258
4.3.3.	Performance management systems and organizational learning.....	272
4.3.4.	Organizational learning and growth.....	274
5.	Discussion.....	276
5.1.	Rival theoretical explanations	276
5.2.	Organizational learning and performance management.....	279
5.3.	Stages of knowledge and performance management	281
5.4.	Design follows use.....	285
5.5.	Learning culture and performance management	287
5.6.	Organizational learning as design principle	290
5.7.	Performance management as system and not package.....	292
5.8.	Clusters of multi-directional interdependencies	296
5.9.	Sequential adoption and simultaneous evolution	298
5.10.	Simons' management control systems over life cycle stages.....	302
5.11.	Reflections on Ferreira & Otley's framework.....	304
5.12.	From management control to performance management.....	308
6.	Growth Performance Management.....	313
6.1.	Managing the entrepreneurial spirit.....	313
6.2.	Scaleups are no startups.....	314
6.3.	Growth is learning	316
6.4.	Defining Growth Performance Management	317
6.5.	The Growth Management Canvas	318

6.5.1.	Knowing the tools in the toolbox	318
6.5.2.	A canvas, not a template nor a model	319
6.5.3.	Configuration logic of the Canvas	320
6.5.4.	A questioning framework.....	322
6.6.	The seven boxes of the Growth Management Canvas.....	324
6.6.1.	Culture & Customer	324
6.6.2.	Strategy & Execution	330
6.6.3.	Organization	335
6.6.4.	People	340
6.6.5.	Goals & Feedback	345
6.6.6.	Key metrics	350
6.6.7.	Incentives	359
6.7.	Applications of the Growth Management Canvas.....	364
6.7.1.	Total analysis workshop.....	364
6.7.2.	Quick check workshop	366
6.7.3.	Internal consistency analysis workshop	367
6.7.4.	Selection, socialization and exit.....	369
6.7.5.	Management due diligence.....	370
6.7.6.	Business model innovation.....	371
6.7.7.	Mergers and acquisitions.....	372
6.8.	Documentation.....	373
6.9.	The 7 principles of Growth Performance Management	375
7.	Conclusion	377
7.1.	Theoretical contributions and practical innovations.....	377
7.2.	Otley's and Yin's criteria	380
7.3.	Strengths, weaknesses and limitations.....	382
7.4.	Future research	385
7.5.	Concluding remarks.....	388
	Appendix A – methodology	389
	Appendix B – analyses and results.....	391
	References	427
	Curriculum Vitae	448

List of Figures

Fig. 1:	Structure of the study	4
Fig. 2:	Ferreira & Otley's (2009, p. 268) 12-questions performance management systems framework	12
Fig. 3:	The four levers of control (adapted from Simons, 1995, p. 157, 159)	18
Fig. 4:	Distinguishing features of control levers (Simons, 1995, p. 180, figure A.1).....	21
Fig. 5:	Organizational learning processes and its sub-processes (adapted from Huber, 1991, p. 90).....	27
Fig. 6:	Single loop learning and double loop learning (adapted from Batac & Carassus, 2009, p. 109).....	29
Fig. 7:	Stages of knowledge framework and organizational learning (adapted from Garvin, 1993, p. 84).....	31
Fig. 8:	Otley's minimum necessary contingency framework (Otley, 1980, p. 421)	38
Fig. 9:	The growth stage contingency model (adapted from Otley, 1980, p. 421)	44
Fig. 10:	Three theoretical purposes of research.....	53
Fig. 11:	Consistent and auditable chain of evidence (adapted from Yin, 2014, p. 128).....	67
Fig. 12:	Four categories of organizational values and their use.....	88
Fig. 13:	Cultural education over the employee cycle	90
Fig. 14:	Relationships between value proposition and vision, mission and values	95
Fig. 15:	The three main categories of key success factors.....	96
Fig. 16:	AlphaCo's organizational design (adapted from internal documents)	99
Fig. 17:	BetaCo's organizational design excluding Co-CEO (adapted from internal documents)	99
Fig. 18:	DeltaCo's organizational design (adapted from internal documents)	99
Fig. 19:	Figure: Relationship between key success factors, organizational design and founders' roles.....	102
Fig. 20:	The evolution of rules, policies and procedures at AlphaCo, BetaCo and DeltaCo	106
Fig. 21:	Interactions of organization structure and other performance management system components	107
Fig. 22:	The translation of information-based practices into physical practices.....	118
Fig. 23:	Strategy concepts, levers of control, performance management and use (cf. Simons, 1995).....	123
Fig. 24:	Design and use of strategic management in the startup and in the growth stage.....	128
Fig. 25:	Strategic-singular, strategic-recurring and operational processes	130
Fig. 26:	Strategic objectives, strategy and control (adapted from Hambrick & Fredrickson, 2005, p. 53)	133
Fig. 27:	The sequence of organizational objectives and their interactions with value propositions	134
Fig. 28:	Organizational learning on existing and new value propositions	135
Fig. 29:	AlphaCo's diagnostic centers as scaling units and implications for performance management	136
Fig. 30:	Use of strategic KPIs, growth KPIs and ops KPIs	146
Fig. 31:	Performance measurement and performance evaluations	147
Fig. 32:	Business model, strategic performance measurement system, organization and KPI use.....	152
Fig. 33:	BetaCo Strategic KPI System (adapted from original action project concept)	154
Fig. 34:	DeltaCo Growth Cycle (adapted from original action project concept).....	155
Fig. 35:	DeltaCo Growth Cycle enhanced by business model questions, org. functions and executives	157
Fig. 36:	Diagnostic and interactive use of the formalized operational target setting process.....	168
Fig. 37:	Seven principles of the OKR goal setting system and organizational values.....	171
Fig. 38:	Performance evaluation and use of practices (extended from Batac & Carassus, 2009, p. 109).....	179
Fig. 39:	Dependencies of performance evaluation designs.....	179
Fig. 40:	Incentives design, performance evaluation and support for use of practices	187
Fig. 41:	Organizational values systems, organizational learning modes and incentives design.....	188
Fig. 42:	Antecedents and outcomes of performance management system change	201
Fig. 43:	The evolution of key performance measures design and use	236

Fig. 44:	Interactive and diagnostic use of OKRs	240
Fig. 45:	Stages of knowledge, organizational learning modes and performance management	249
Fig. 46:	Implications of complement performance management practices on organizational learning	254
Fig. 47:	Recursive relationship between organizational learning and performance management	279
Fig. 48:	Interaction between design and use	285
Fig. 49:	Evolution of management control over life cycle (adapted from Simons, 1995, p. 128)	303
Fig. 50:	Extensions to Ferreira & Otley's (2009) performance management framework	307
Fig. 51:	Startup summit and 'scaling skeletons' (source: www.goinglongblog.com)	314
Fig. 52:	The links of the growth chain	316
Fig. 53:	The Growth Management Canvas	321
Fig. 54:	Growth Management Canvas heat map (adapted from actual customer)	365
Fig. 55:	Template of the Growth Management Canvas quick check	367

List of Tables

Tab. 1:	The twelve questions of Ferreira & Otley's (2009) performance management framework	13
Tab. 2:	Concepts of use	19
Tab. 3:	Definitions of organizational learning.....	25
Tab. 4:	Measuring growth (Shepherd & Wiklund, 2009, p. 108).....	32
Tab. 5:	Predictions of life cycle theory for performance management system components.....	34
Tab. 6:	Management control characteristics and organizational learning processes (Kloot, 1997, p. 56).....	40
Tab. 7:	Literature review on growth factors in the entrepreneurship literature	46
Tab. 8:	Literature review on adoption of management control in the growth stage	48
Tab. 9:	Literature review on the evolution of management control systems	49
Tab. 10:	Theoretical explanations for management control systems in the growth stage.....	50
Tab. 11:	Types of interventionist and non-interventionist studies (adapted from Malmi, 2016).....	57
Tab. 12:	Triangulation tables of data sources in cross case analysis	72
Tab. 13:	Quality criteria for validity and reliability (Gilbert, Ruigrok & Wick, 2008; Yin, 2014).....	75
Tab. 14:	Criteria for rigor and relevance in action research (Davison, Martinsons & Kock, 2004).....	78
Tab. 15:	Descriptive statistics of AlphaCo, BetaCo and DeltaCo	79
Tab. 16:	Growth indicators of AlphaCo, BetaCo and DeltaCo.....	81
Tab. 17:	Assessment of management team experience.....	82
Tab. 18:	Description of action research projects	83
Tab. 19:	Action projects and performance management system components	83
Tab. 20:	Summary of empirical evidence.....	84
Tab. 21:	Examples for AlphaCo, BetaCo and DeltaCo's value proposition statements	94
Tab. 22:	Key performance measures at AlphaCo, BetaCo and DeltaCo	140
Tab. 23:	Design of the operational target setting process before further formalization.....	164
Tab. 24:	Design of the operational target setting process after formalization	166
Tab. 25:	Use of goals vs. use of roles	169
Tab. 26:	Approaches to performance evaluation on different organizational levels.....	177
Tab. 27:	Overview for designs of rewards and penalties at case studies	185
Tab. 28:	Information flows and performance management practices.....	190
Tab. 29:	Key links between PMS components as per Ferreira & Otley (2009).....	205
Tab. 30:	Meetings, direction of information flows and middle managers' involvement.....	247
Tab. 31:	Summary for vision and mission (chapter 4.1.1).....	259
Tab. 32:	Summary for key success factors (chapter 4.1.2).....	260
Tab. 33:	Summary for organization structure (chapter 4.1.3).....	261
Tab. 34:	Summary for interactions of organization structure with other practices (chapter 4.1.3).....	262
Tab. 35:	Summary for emergent themes in organization structure (chapter 4.1.3).....	263
Tab. 36:	Summary for strategies and plans (chapter 4.1.4)	264
Tab. 37:	Summary for emerging themes in strategies and plans (chapter 4.1.4).....	265
Tab. 38:	Summary for key performance measures (chapter 4.1.5).....	266
Tab. 39:	Summary for target setting (chapter 4.1.6).....	267
Tab. 40:	Summary for performance evaluation (chapter 4.1.7).....	268
Tab. 41:	Summary for reward systems (chapter 4.1.8).....	269
Tab. 42:	Summary for information flows, systems and networks (chapter 4.1.9).....	270
Tab. 43:	Summary for performance management system use (chapter 4.1.10).....	271

Tab. 44:	Summary for performance management system change (chapter 4.1.11).....	271
Tab. 45:	Summary for strength and coherence (chapter 4.1.12).....	272
Tab. 46:	Rival theoretical explanations for performance management system design.....	278
Tab. 47:	Schein's (2008, pp. 393-406) nine characteristics of a learning culture.....	288
Tab. 48:	Sequence of adoption of practices in relation to number of employees.....	299
Tab. 49:	From management accounting and control to performance management.....	309
Tab. 50:	Mission statements related to the hierarchy of human needs.....	324
Tab. 51:	Nine categories of vision statements and vision KPI.....	325
Tab. 52:	Three categories of core values with company examples.....	326
Tab. 53:	Main categories and potential sources of behavioral standards.....	327
Tab. 54:	Basic types of value propositions.....	329
Tab. 55:	Practices for cultural visibility and tangibility (extended from Schein, 2008, pp. 25-27).....	329
Tab. 56:	Core processes analysis.....	331
Tab. 57:	Ten business plan aspects.....	333
Tab. 58:	Four types of strategic rules (adapted from Sull & Eisenhardt, 2015).....	338
Tab. 59:	Eleven essential types of meetings.....	339
Tab. 60:	Types of information systems (IS).....	340
Tab. 61:	Three attributes of fit and performance management practices.....	341
Tab. 62:	Suitable performance dimensions for different organizational levels.....	348
Tab. 63:	Types of formal performance evaluation processes.....	349
Tab. 64:	Framework for incentive decisions and communication.....	363
Tab. 65:	Triangulation of growth managers' perspectives (adapted from BetaCo).....	365
Tab. 66:	Triangulation of internal documentation (adapted from BetaCo).....	366
Tab. 67:	Documentations of performance management practices.....	374
Tab. 68:	Future research on performance management in the growth stage.....	386
Tab. 69:	Overview of interview partners and interview dates.....	389
Tab. 70:	Overview of collected documents and archival records.....	390
Tab. 71:	Data triangulation for vision statements.....	391
Tab. 72:	Data triangulation for mission statements.....	391
Tab. 73:	Data triangulation for organizational values systems.....	392
Tab. 74:	Data triangulation for cultural education process.....	393
Tab. 75:	Data Triangulation for key success factors.....	394
Tab. 76:	Data triangulation for functional organizational design.....	395
Tab. 77:	Data triangulation for founders' roles and responsibilities.....	396
Tab. 78:	Data triangulation for middle management roles and responsibilities.....	396
Tab. 79:	Data triangulation for rules, procedures and policies.....	397
Tab. 80:	Impact of organization structure on the performance management system at case studies.....	398
Tab. 81:	Interactions between structure and strategy at case studies.....	399
Tab. 82:	Data triangulation for the human resources function as growth supporting function.....	400
Tab. 83:	Data triangulation for strategy type classification.....	401
Tab. 84:	Concepts of strategy and associated practices in case studies.....	402
Tab. 85:	Strategic business plans at case studies.....	403
Tab. 86:	Financial business plans at case studies.....	404
Tab. 87:	Strategic business plan versus financial business plan.....	404
Tab. 88:	Data triangulation for strategic management processes.....	405

Tab. 89:	Three types of organizational processes at case studies	405
Tab. 90:	Data triangulation for strategic objectives.....	406
Tab. 91:	Data triangulation for key performance measures.....	407
Tab. 92:	Data triangulation for use of key performance measures	408
Tab. 93:	Data triangulation for role of performance measures in performance evaluation	409
Tab. 94:	Data triangulation for omission of key performance measures	410
Tab. 95:	Comparison of BetaCo's and DeltaCo's strategic performance measurement systems	410
Tab. 96:	Data triangulation for target setting.....	411
Tab. 97:	Types of targets at case studies	411
Tab. 98:	Roles of operational targets at case studies	412
Tab. 99:	Data triangulation for levels of performance.....	412
Tab. 100:	Data triangulation for performance evaluation.....	413
Tab. 101:	Approach to performance evaluation on the employee level at case studies.....	414
Tab. 102:	Approach to of performance evaluation on the functional level at case studies.....	414
Tab. 103:	Approach to performance evaluation on the company level at case studies.....	415
Tab. 104:	Data triangulation for rewards and penalties	416
Tab. 105:	Use intensity of financial rewards at case studies	417
Tab. 106:	Use intensity of non-financial rewards at case studies	417
Tab. 107:	Use intensity of formal and informal penalties at case studies.....	417
Tab. 108:	Data triangulation for information flows, systems and networks.....	418
Tab. 109:	Information systems at AlphaCo, BetaCo and DeltaCo	419
Tab. 110:	Formal meeting schedules at AlphaCo, BetaCo and DeltaCo	420
Tab. 111:	Informal communication and networks at AlphaCo, BetaCo and DeltaCo.....	420
Tab. 112:	Use of performance measurement and feedback systems at case studies.....	421
Tab. 113:	Use at different organizational levels at case studies	422
Tab. 114:	Antecedents to performance management system change at case studies.....	422
Tab. 115:	Outcomes of performance management system change at case studies (selected practices).....	423
Tab. 116:	Chenhall's (2003) criteria for evaluating strength and coherence at case studies.....	424
Tab. 117:	Interdependencies between performance management system components at case studies	424
Tab. 118:	Interdependencies of information systems and PMS components at case studies.....	425
Tab. 119:	Interdependencies of information networks and PMS components at case studies.....	426

List of Abbreviations

Cf.	compare with
C-level	C-level encompasses the highest-ranking executives of a company
CEO	Chief Executive Officer
CFO	Chief Financial Officer
COO	Chief Operating Officer
EBIT	Earnings before interest and taxes
EBITDA	Earnings before interest, taxes, depreciation and amortization
EGC	Entrepreneurial growth company / companies
HR	Human resources / human resources function
IS	Information system
IT	Information technology or department for information technology
KPI / KPIs	Key performance indicator / key performance measure
KSF	Key success factors
MCS	Management control systems
OGSM	Objectives, Goals, Strategy and Measures (strategic management process)
OKR / OKRs	Objectives & Key Results (operational goal setting system)
PMS	Performance management system
VP	Vice President

1. Introduction

Historic perspectives. The historian Yuval Noah Harari (2015, p. 167, italics added) writes in his best-selling book “sapiens – a brief history of mankind”: “Understanding human history in the millennia following the agricultural revolution boils down to a single question: How did humans organize themselves in mass-cooperation networks, when they lacked the biological instincts necessary to sustain such networks? The short answer is that humans created *imagined orders and devised scripts.*” Harari writes extensively about these imagined orders and devised scripts – the importance of visions and cultural values, the ability of developing strategies and setting targets, the need for organization and hierarchies, the role of measurement, the use of rewards and penalties, and the design of information flows in larger groups of people.

I find it fascinating that the core elements of *performance management* have always existed. Whenever a larger group of humans gathers together, they have to address the same managerial questions and use the same performance management practices. This is true for hunter-gatherer groups, builders of pyramids, kingdoms in mediaeval times, the US railway construction in the 19th century (Kaplan, 1984), the Churches, dictatorial regimes and democratic states. Purpose, vision and cultural values; long-term strategy and short-term tactical plans; an organization with hierarchy, roles, responsibilities; rules, laws and standard procedures; the use of mathematics to measure performance; processes to determine short-term goals; processes to evaluate performance as well as giving and receiving feedback; rewarding and penalizing; practices to share information; the selection and socialization of members of the group; physical constraints and artefacts... These components of performance management have always been employed and are just designed and used differently according to situation and context.

Economy and society. The ability of human organizations to adapt to changing environments has profound influence on economy and society. Schumpeter (1942, pp. 82-83) famously states that “capitalism [...] incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one. This process of creative destruction is the essential fact about capitalism”. Creation and destruction of the economic structure above all processes through the successful growth of entrepreneurial firms with innovative, superior solutions to customer problems (Blank, 2013, p. 63; Karlsson & Honig, 2009, p. 30). Startups and growth companies play an essential role in creating jobs, increasing wealth, developing and distributing new technologies and shifting up the economic productivity curve with their innovative products (cf. Dávila, Foster, He & Shimizu, 2015, p. 7). Companies such as Google, Facebook, LinkedIn or Amazon, which were startups for a short time and then grew rapidly, can even change the inner workings of our society – the way we organize information, the way we socialize with each other and the way we sell and buy products.

Startups vs. scaleups. Startups are ‘en vogue’ nowadays. A lot has been written about the early days of a startup (cf. Gilbert, McDougall & Audretsch, 2006). Management practices are developed specifically for startups. Well-known examples include the business model canvas (Osterwalder & Pigneur, 2010), the lean startup movement (Ries, 2011) or the design thinking approach (Plattner, Meinel & Leifer, 2016). However, as Silicon Valley serial entrepreneur and angel investor Elad Gil assesses in 2018: “A lot has been written about the early stages of establishing a technology startup, from fundraising and searching for product/market fit to early team building and merger & acquisition exits. But what happens next? Very little tactical advice exists about scaling a company from ten or 20 employees to thousands” (p. 19). No doubt, startups are important to initiate ideas and innovation. Yet only growing startups – ‘scaleups’ – have real impact.

In fact, scaleups are becoming ‘en vogue’ recently. The World Economic Forum titled in 2017: “Startups won’t save the economy. But scaleups could.” In April 2017, US venture capital firm Y Combinator hosted their “Scaleup Offsite” for the first time. The Financial Times issues its special report on “FT 1000 – Europe’s Fastest Growing Companies” since 2017. LinkedIn founder Reid Hoffman started his “Masters of Scale” podcast in 2017. More and more entrepreneurs publish books on how they achieved to scale companies (e.g. Doerr, 2018; Gil, 2018; Hoffman, 2018; Horowitz, 2014; Ismail, Malone & Van Geest, 2014; Maurya, 2016).

State of the literature. Management accounting and control research has long focused on established corporations. Researchers’ interest in management control systems (MCS) in growing companies is emerging only (Dávila, 2005, p. 223). For quite some time, the literature had an ambivalent perspective on control in the context of innovation and growth; formalized management control practices were understood either as growth accelerators or growth inhibitors (Dávila, Foster & Jia, 2010, p. 80). Formalized practices have been viewed to be detrimental to startup spirit, to inhibit learning and to stifle creativity by excessive bureaucracy. In recent years, however, empirical findings have contributed to the view that control can be a growth accelerator and that the adoption of management control systems can facilitate venture growth and valuation (Dávila & Foster, 2005, 2007; Dávila, Foster & Jia, 2015; Dávila, Foster & Li, 2009; Sandelin, 2008; Sandino, 2007; see literature review in chapter 2.7.2).

From this early yet growing literature, it is known that ventures should *adopt* management control systems to support their growth. However, it is not known how and why ventures *design and use* their systems. For instance, Dávila & Foster (2005, p. 1060) find evidence that “companies that adopt operating budgets sooner grow faster”. Yet it is not known how growing ventures design and use operating budgets. Do founders set budgets top-down or do employees participate in the target setting process? How often do growing ventures set budgets? Are performance levels rather easy or particularly aggressive? And why do they choose for a specific approach?

Summary of the study. This study extends previous research on management control system adoption and evolution and investigates the design and use of holistic performance management systems (PMS) in entrepreneurial growth companies (Ferreira & Otley, 2009; Grabner & Moers, 2013; Simons, 1995). The research question is: How do entrepreneurial growth companies design and use their performance management systems? To approach this question holistically, a total of 54 performance management practices and themes are examined; 39 practices are implied by Ferreira & Otley's (2009) 12-questions performance management system framework and 15 practices emerge from the investigation.

This study applies an action research approach to investigate the three innovative, rapidly growing case studies AlphaCo, BetaCo and DeltaCo (Malmi, 2016). The intension is to identify patterns and learn reasons for their approaches to performance management (Eisenhardt, 1989a; Yin, 2014). As suggested by the theoretical proposition, which is grounded in organizational learning theory (Argyris & Schön, 1978; Garvin, 1993; Huber, 1991; March, 1991), this study finds that entrepreneurial growth companies design and use their performance management systems to help and not hinder organizational learning (cf. Kloot, 1997). More specifically, entrepreneurial growth companies design and use their performance management systems in order to facilitate organizational learning processes and balance the organizational learning modes of single loop and double loop learning. In a growth context, performance management and organizational learning assume a recursive relationship. Learning-oriented cultural performance management practices play significant roles for achieving internal consistency as well as creating performance management systems in contrast to packages.

Entrepreneurial growth companies are organizations that operate under extreme conditions (Hambrick & Crozier, 1985). Change is the constant and control can become a constraint (cf. Nixon & Burns, 2005). Growth managers' key question is: What practices can be used to effectively manage performance? Hence it is suggested that entrepreneurial growth companies hold insights for the emerging discipline of performance management and findings are discussed in the broader context of performance management research (Ferreira & Otley, 2009).

A key finding is that firm growth is a journey of organized learning (cf. Von Krogh & Cusumano, 2001). In my practical work with growth companies I often use the phrase: 'Growth is learning and learning can be managed'. The insight that organizations need to learn in order to grow is not a new one. However, it is equally true that many organizations, including startups and growth companies, do not design and use performance management systems so that they support organizational learning. On the contrary, many companies organize themselves in a way that discourages and inhibits learning. For this reason, this study extends its theoretical insights and develops a practical concept – Growth Performance Management and Growth Management Canvas – that supports companies in the design and use of holistic performance management systems in order to drive growth.

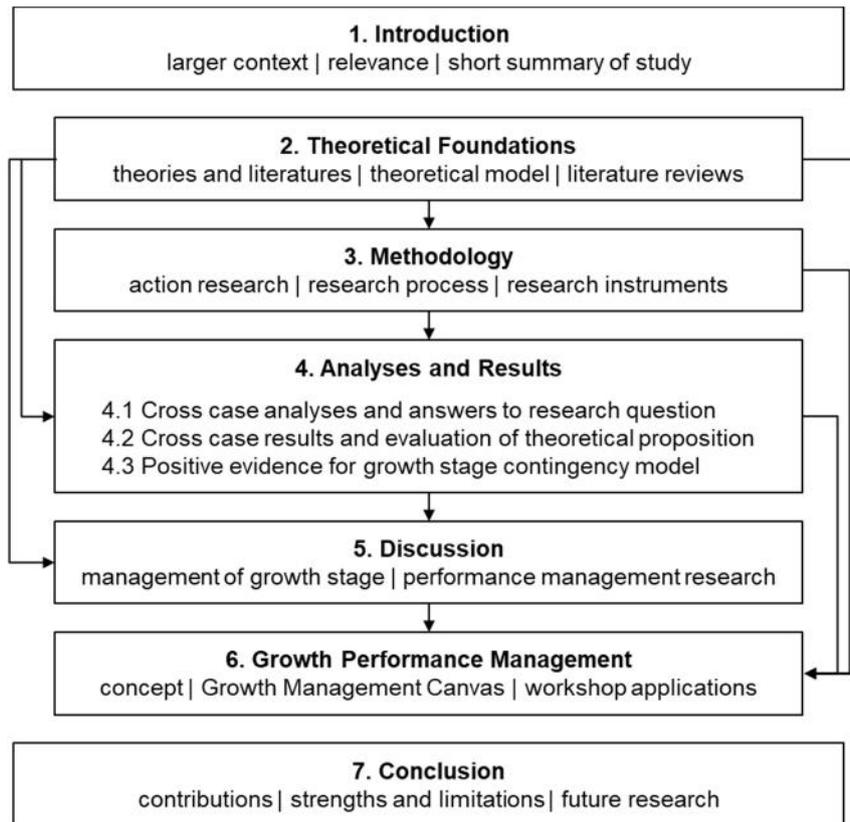


Fig. 1: Structure of the study

Structure of the study. The structure of this study is summarized in figure 1. Chapter 2 elaborates on management accounting and control, performance management, organizational learning, life cycle theory and contingency theory as this research's theoretical foundations, reviews the literature on what is known about managing the growth stage, outlines the theoretical model (the 'growth stage contingency model'), and from there derives research question and theoretical proposition. Chapter 3 outlines action research as this study's methodological approach, provides quality criteria for qualitative research and introduces to the three case studies of AlphaCo, BetaCo and DeltaCo.

Chapter 4 reports the cross case analysis and results; its structure corresponds to the components of the growth stage contingency model. Chapter 4.1 answers the research question. Chapter 4.2 links results to the theoretical proposition. Chapter 4.3 provides a summary of chapters 4.1 and 4.2, and evaluates the empirical evidence with respect to the theoretical model.

Chapter 5 discusses implications for performance management in the growth stage and reflects on findings in the context of emerging performance management research. Chapter 6 uses the theoretical insights in chapters 4 and 5 to elaborate this study's practical innovations of Growth Performance Management and the Growth Management Canvas. Finally, chapter 7 summarizes this study's theoretical contributions and practical innovations, evaluates strengths, weaknesses and limitations, and proposes avenues for future research.

2. Theoretical Foundations

2.1. Research in management accounting and control

2.1.1. Management accounting, management control and performance management

Position of the study. In researching the formalized management approach of entrepreneurial growth companies, this study draws on a variety of literatures. Nonetheless, this research is clearly positioned in the academic field of management accounting and control.

Chenhall (2003, p. 129) finds that “the terms management accounting, management accounting systems, management control systems, and organizational controls are sometimes used interchangeably”. Indeed, some researchers address only management accounting, management accounting systems or strategic management accounting (Kaplan, 1994; Otley, 2008). Some academics refer to management control and management control systems (Merchant & Van der Stede, 2007; Simons, 1995). Increasingly researchers write about performance management and performance management systems (Otley, 1999; Ferreira & Otley, 2009). Management accounting and control is the ‘bracket’ that encompasses research on a variety of practices in management accounting, management control and the emerging academic discipline of performance management (Otley, 2016).

Distinctions. It appears to be difficult to distinct management accounting, management control and performance management using the respective literatures. Malmi & Brown (2008, p. 289) acknowledge that “the lack of clarity, wide variation and inconsistencies in how management control systems have been conceptualized have created a number of problems in management control systems research in regards to the interpretation of research results and the design of management control systems” and “building a cumulative body of knowledge about the design and use of management control systems becomes difficult without well-articulated definitions and purposes of management control systems”.

Definitions are provided in chapter 2.2. Here the use of these terms shall briefly be outlined. This study refers to ‘management accounting and control’, when it addresses the academic discipline that this study is part of. This study refers to ‘management accounting’, when the analysis, interpretation and managerial implications of financial information is addressed. This study refers to ‘management control’, when statements are concerned with the management control literature specifically. This body of literature is by far the largest in research on management accounting and control, in particular with respect to high-class publications and well-received books. Finally, the term ‘performance management’ is used, when the study refers to the performance management literature.

2.1.2. The evolution to performance management

Why performance management. The editorial comments by Nixon & Burns (2005) for the Management Accounting Research's special issue "towards new forms of control" give an idea of why this evolution of management accounting and management control to performance management is emerging for approximately 20 years now – starting with Otley's (1999) early thoughts about a comprehensive performance management system framework. Nixon & Burns (2005, p. 261) analyze that "in many ways the nature of change itself has changed. Change is now more pervasive and non-linear." In quoting Jack Welch, former CEO of General Electrics, they add (p. 261, italics added): "The old organization was built on control, but the world has changed. The world is moving at such a pace that *control has become a limitation.*"

Melnyk, Bititci, Platts, Tobias & Andersen (2014, p. 174) agree that concepts of management accounting and control must adapt when business environments change so rapidly: "There is strong evidence that the business environment has become highly turbulent and that these changes are structural rather than transient in nature. The following are some of these structural changes: An increasing focus on areas such as innovation; a recognition that being good with process management and lean may adversely affect the ability of the firm to compete on innovation; a recognition that lean systems may adversely harm the ability of the firm to be responsive; the emergence of new business models for delivering value to the customer; recognition of the importance of blended outcomes when positions, such as cost leadership, are no longer defensible strategies; proactive governmental legislative interventions and initiations; the increasing importance of the supply chain. These changes should be reflected in the strategies developed and deployed by firms; in turn, these strategic changes should impact the performance measurement and management system."

The emphasis of control over the achievement of objectives to the expense of other forms of managing performance has led to severe discontent of interested parties – investors, managers, employees, customers, corporate regulators, academics – with the *performance* of management control and accounting theory. Researchers identify two central gaps that performance management research is determined to overcome: the practice-research gap and the gap between related managerial disciplines.

Practice-research gap. The management accounting and control literature is seen as misaligned with managerial realities at times (Nixon & Burns, 2005, pp. 261-262). This "practice-research gap" (Bromwich & Scapens, 2016, p. 1) is a recurring and persistent issue for the progress of management accounting and control (Malmi, 2016, p. 32; Otley, 2008, p. 238). The discussion traces back to Kaplan & Johnson's 'relevance lost' analysis of management accounting by the end of the 1980s. Kaplan, together with management consultant Norton, took his own insights at face value, closely investigated management accounting and control in practice, and

developed the balanced scorecard and the strategy map – two of the most influential innovations in management accounting and control in the past 30 years (Kaplan & Norton, 1996, 2001).

Malmi & Granlund (2009) argue that “theories in an applied field such as management accounting research should provide explanations that are useful for those we study – managers, organizations and society”, (p. 597) and that “one important criterion for a theory’s success is the value of the theory to users” (p. 598). Altogether, the practice-research gap can be closed by studying different types of organizations and their reality and by developing theory that is specifically useful to them.

Gap between managerial disciplines. There seems to be a gap between the concepts of management accounting and control and conceptual developments in related disciplines including cultural management, strategic management, corporate governance, business model innovation, and human resource management (Berry, Coad, Harris, Otley & Stringer, 2009, p. 13; Nixon & Burns, 2005, p. 262; Melnyk, Bititci, Platts, Tobias & Andersen, 2014, p. 174). In linking management accounting and control concepts to these disciplines, new concepts emerge that can be summarized under the headline of performance management (cf. Ferreira & Otley, 2009). Following Melnyk, Bititci, Platts, Tobias & Andersen (2014, p. 176) these new roles might include: communicating direction and values, influencing behavior, distinguishing good and bad behavior, motivating action, establishing performance standards, formulating and implementing strategy, and “facilitating learning – both single and double loop”.

Two particular gaps between disciplines have been addressed in recent papers: The focus on strategy implementation at the expense of strategy formulation, and the focus on action and results controls at the expense of other forms of controls such as cultural or personnel controls (Bedford, Malmi & Sandelin, 2016, pp. 12-13; Sandelin, 2008, pp. 325-326). Drawing on Simons’ (1995) theory it seems likely these two gaps are linked to each other. The necessity to re-integrate strategy formulation in management accounting and control theory and the increasing interest in cultural controls can be explained by a need to facilitate double loop learning. Performance management theory seeks to integrate these forms of control.

Otley (2008, p. 238) boils it down to its essence when he proposes: “Issues can be categorized under the more general banner of performance management systems. This is more than just a terminological change from management accounting and control systems, so well-defined by Robert Anthony in 1965. What Anthony did was to separate out the activities of ‘management control’ from the wider activities of ‘strategic planning’ and the more detailed and technically diverse activities of ‘operational control’. Somewhat inevitably (at least, with hindsight) the result was a concentration on management accounting and control systems. In one sense, the move towards performance management systems is involved with putting Anthony’s categories back together again, as they need to operate much more seamlessly in practice. A major

contribution to this task has been made by Robert Simons (1995) in his ‘levers of control’ approach, which provides a more encompassing framework for considering a wider variety of control mechanisms. These include not only financial and non-financial performance measurement approaches, but also the more diffuse techniques inherent in his categories of beliefs systems and boundary controls. He also stresses the ways in which information is used by managers, as well as the formal systems that provide it.” In this sense, Simons (1995) did an important step towards performance management. It could even be argued that Simons’ (1995) levers of control already overcame traditional ideas of management control and initiated performance management thinking.

A third gap – lack of holistic investigations. A third issue shall be added, which is related to the first two gaps – the tendency of academics to focus only on specific aspects, practices or relationships of the overall performance management control system (Grabner & Moers, 2013, p. 408; Malmi & Brown, 2008, pp. 287-288). Ferreira & Otley (2009, pp. 263) state that “the lack of a more complete description of the totality of a control system contributes to spurious findings, ambiguity, and potentially to conflicting results” and “our understanding of management control systems will remain piecemeal for as long empirical research continues to ignore the interdependency between different control mechanisms operating at the same time in the same organization”. They motivate their 12-questions performance management systems framework with exactly these findings.

This study suggests that entrepreneurial growth companies – young, venture capital funded, fast growing firms with innovative business models and aggressive growth strategies – face all of the changes outlined by Melnyk, Bititci, Platts, Tobias & Andersen (2014, p. 174) in highly concentrated versions. In addition, the three gaps explained above are particularly challenging to them. Entrepreneurial growth companies need practice-oriented theory for their management approach, cannot care much about the differences between academic disciplines, and need to design and use holistic, integrated performance management systems in order to achieve growth. Therefore, this study suggests that entrepreneurial growth companies are ideal research objects to investigate performance management.

2.2. Performance management

2.2.1. Defining performance management

The literature has brought forward several definitions of management accounting systems (e.g. Bromwich, 1990, p. 28; Chenhall, 2003, p. 129; Dávila & Foster, 2005, S. 1040), management control systems (e.g. Malmi & Brown, 2008, p. 290; Merchant & Van der Stede, 2007, p. 5; Simons, 1995, p. 5) and performance management systems (e.g. Broadbent & Laughlin, 2009, p. 283; Ferreira & Otley, 2009, p. 264; Melnyk, Bititci, Platts, Tobias & Andersen, 2014, p. 175; Otley, 1999). Two well-established and frequently used definitions influence this research:

The definition of management control systems by Simons (1995, p. 5), and the definition of performance management systems by Ferreira & Otley (2009, p. 264).

Management accounting. In defining management accounting, Dávila & Foster's (2005, S. 1040) state: "We define management accounting systems as a subset of management control systems [...] that focus on the financial aspects of the company. Thus, we interpret them as a recurring and formalized set of institutionalized protocols, routines, or information gathering mechanisms designed to assist managers to make decisions or fulfill their responsibilities." Management accounting systems can thus be distinct from other management systems by a focus on formalized financial information.

Management control. Management control systems apply financial and non-financial information as well as further practices. In their classical textbook on management control systems, Merchant & Van der Stede (2007, p. 5) define: "Management control includes all the devices or systems managers use to ensure that the behaviors and decisions of their employees are consistent with the organization's objectives and strategies." According to this definition, Merchant & Van der Stede (2007) consider objectives and strategies as pre-given. They do not include the process of strategy formulation and they deliberately limit the scope of management control to the implementation of intended strategies, in contrast to emergent strategies (Mintzberg & Waters, 1985, pp. 257-258).

Malmi & Brown (2008, pp. 290-291) propose a similar definition: "Management controls include all the devices and systems managers use to ensure that the behaviors and decisions of their employees are consistent with the organization's objectives and strategies, but exclude pure decision-support systems". In their view, decision-support systems take on the task of determining new objectives for previously undefined performance standards; they deliberately exclude this task from management control.

Simons' definition of management control systems. In his levers of control theory, Simons (1995) recognizes the need to integrate also the exploration of performance standards, or performance dimensions, respectively, which might become relevant in the future.

Simons' (1995) definition of management control systems
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"Management control systems are the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities." (Simons, 1995, p. 5)
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Simons elaborates his definition word by word (Simons, 1995, p. 5). He is concerned with formal routines and procedures in contrast to informal ones, although he acknowledges role of informal practices. Management control systems are information-based "to signal the domain in which subordinates should search for opportunities, to communicate plans and goals, to monitor the achievement of plans and goals, and to keep informed and inform others of

emerging developments”. His definition is only concerned with management controls that managers use, and not with management routines used on lower levels of the organization. Simons highlights that “these information-based systems become control systems when they are used to maintain or alter patterns in organizational activities”. Desirable patterns are not only oriented towards previously defined performance dimensions and objectives, but also emerging patterns as well as new performance dimensions and objectives are desired. In strategic terms “management control systems must accommodate intended strategies as well as strategies that emerge from local experimentation and independent employee initiatives”.

Performance management. Otley (1999, p. 364) agrees with Merchant & Van der Stede (2007) and Simons (1995) but adds that “performance is itself an ambiguous term, and capable of no simple definition. In particular, the term does not specify to whom the organization is delivering its ‘performance’. We will begin at an organizational level of analysis and assume that an organization that is performing well is one that is successfully attaining its objectives; in other terms, one that is effectively implementing an appropriate strategy.” Otley (1999, p. 364) continues: “Nevertheless, it will become apparent that more attention will need to be paid to the definition of performance from the perspectives of relevant stakeholders.” Put differently, stakeholders define objectives and performance dimensions. These perspectives are not necessarily congruent.

In their seminal paper on performance management systems, Ferreira & Otley (2009, p. 264) propose a definition, which intends to incorporate Simons (1995) and Otley’s (1999) perspectives.

Ferreira & Otley’s (2009) definition of performance management systems

“We view performance management systems as the evolving formal and informal mechanisms, processes, systems, and networks used by organizations for conveying the key objectives and goals elicited by management, for assisting the strategic process and ongoing management through analysis, planning, measurement, control, rewarding, and broadly managing performance, and for supporting and facilitating organizational learning and change.” (Ferreira & Otley, 2009, p. 264)

Ferreira & Otley (2009, p. 264) also elaborate their definition in detail: “Hence we use the term performance management system to encapsulate these more general processes, and our working definition of a performance management system includes both the formal mechanisms, processes, systems, and networks used by organizations, and also the more subtle, yet important, informal controls that are used. It is also based on the premise that key objectives and goals are set by managers at every level, but it does not assume that these objectives and goals are necessarily the ones that best serve the organization as a whole. [...] The definition views the performance management systems as performing a supporting role for a broad range

of managerial activities, including strategic processes – which involve strategic formulation and strategic implementation – and ongoing management. Also, through its learning and change facilitation role, a performance management system can support or foster emergent strategies.”

Comparison of definitions. Compared to Simons’ (1995, p. 5) definition of management control systems, Ferreira & Otley’s (2009, p. 264) definition of performance management systems is significantly broader. First, Ferreira & Otley (2009) explicitly include both formal and informal performance management practices, while Simons (1995) explicitly addresses formal practices only. Second, Ferreira & Otley (2009) refer to “mechanisms, processes, systems, and networks”, which allow for a wider range of practices and also allow for non-routinized practices, while Simons (1995) focuses on “routines and procedures”. Third, Ferreira & Otley (2009) do not explicitly exclude non-information-based, physical performance management practices, while Simons (1995) includes information-based practices only. All authors, however, agree on the necessity to design and use practices in order to facilitate “organizational learning” (Ferreira & Otley, 2009, p. 264) and “maintain or alter patterns in organizational activities” (Simons, 1995, p. 5).

2.2.2. Frameworks in management accounting and control

The core idea of the possibility and usefulness of managerial frameworks is that “the questions themselves [of the framework] appear to remain constant, but organizations need to continually develop new answers to them. This is because the context in which the organization is set is constantly changing and new strategies need to be developed to cope with new operating environments” (Otley, 1999, p. 365). The existence of well-defined questions grounded in theory and tested in practice distinguishes a useful framework from a less useful one.

The management accounting and control literature has developed several notable frameworks: Anthony’s (1965) framework for planning and control, Simons’ (1995) levers of control, Kaplan & Norton’s (1996) balanced scorecard, Kaplan & Norton’s (2001) strategy map, the value-based management framework as discussed in Ittner & Larcker (2001), Malmi & Brown’s (2008) management control systems package, Otley’s (1999) and Ferreira & Otley’s (2009) performance management system framework, the St. Gallen Performance Management Model (Möller, Wirmsperger & Gackstatter, 2015). This study uses Ferreira & Otley’s (2009) performance management framework and Simons’ (1995) levers of control theory as the theoretical foundations from a management accounting and control perspective.

2.2.3. Ferreira & Otley’s performance management framework

Relevance. Ferreira & Otley’s (2009) framework is of utmost significance to this study. Ferreira & Otley’s (2009) 12-questions performance management system framework builds on decades of research first by David Otley (1980, 1987, 1999, 2003, 2008), later by Aldónio Ferreira (2002), has been tested as a frequently quoted working paper in 2005, and culminates in their

2009 paper in the journal ‘Management Accounting Research’ with the title “the design and use of performance management systems: an extended framework for analysis”. Otley’s paper in 1999, Ferreira & Otley’s working paper in 2005 and their Management Accounting Research paper in 2009 have received a lot of attention from other researchers (e.g. Adler, 2011; Berry, Coad, Harris, Otley & Stringer, 2009; Broadbent & Laughlin, 2009; Collier, 2005; Demartini, 2014; Schläfke, Silvi & Möller, 2013; Stringer, 2007; Tuomela, 2005). As of December 2019, their 2009 paper has received more than 1.300 citations on Google scholar.

Core idea. Ferreira & Otley’s (2009, p. 267) core idea is to develop a framework “as a heuristic tool to facilitate the rapid description of significant aspects of performance management systems design and operation”. The framework allows for a quick overview (see figure 2) and is particularly useful to structure exploratory case study research on design and use of performance management systems (Ferreira & Otley, 2009, pp. 276, 278-279). Ferreira & Otley’s (2009) performance management systems framework consists of twelve components, each of which is developed from the management accounting and control literature.

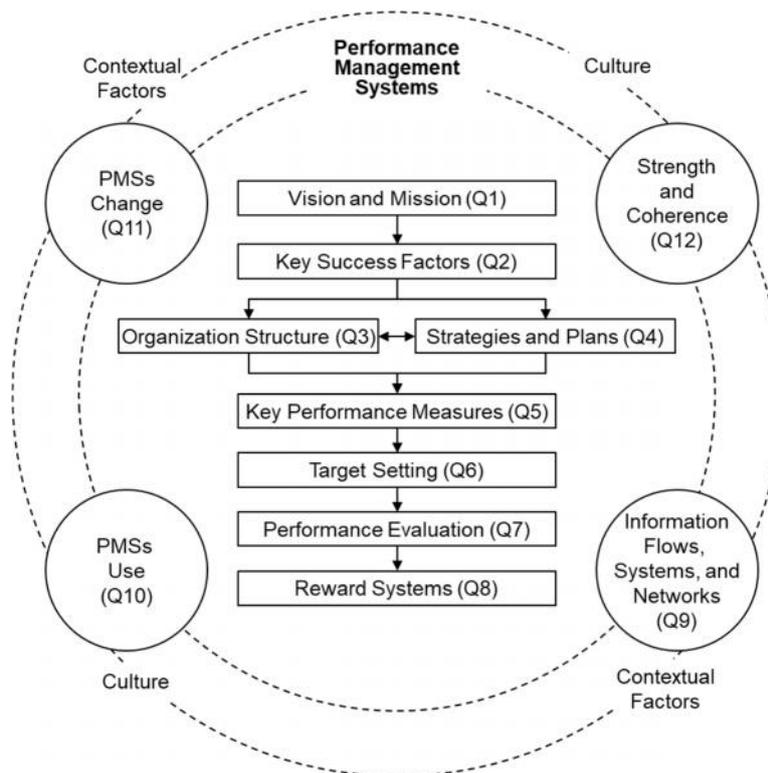


Fig. 2: Ferreira & Otley’s (2009, p. 268) 12-questions performance management systems framework

The twelve questions. Ferreira & Otley’s (2009, pp. 266-267) performance management framework is operationalized by twelve questions, as outlined in table 1. Ferreira & Otley’s (2009, p. 267) point out that “although not exhaustive, all the questions have been found by the authors to yield significant insight into the various aspects of performance management system design and use, and to form a coherent framework that can be used to structure enquiry in this

field". This study uses their twelve questions as an extension to the overarching research question in order to investigate the design and use of performance management systems in entrepreneurial growth companies.

PMS components	Performance management questions
1 Vision & mission	What is the vision and mission of the organization and how is this brought to the attention of managers and employees? What mechanisms, processes, and networks are used to convey the organization's overarching purposes and objectives to its members?
2 Key success factors	What are the key factors that are believed to be central to the organization's overall future success and how are they brought to the attention of managers and employees?
3 Organization structure	What is the organization structure and what impact does it have on the design and use of performance management systems? How does it influence and how is it influenced by the strategic management process?
4 Strategies & plans	What strategies and plans has the organization adopted and what are the processes and activities that it has decided will be required for it to ensure its success? How are strategies and plans adapted, generated and communicated to managers and employees?
5 Key performance measures	What are the organization's key performance measures deriving from its objectives, key success factors, and strategies and plans? How are these specified and communicated and what role do they play in performance evaluation? Are there significant omissions?
6 Target setting	What level of performance does the organization need to achieve for each of its key performance measures (identified in the above question), how does it go about setting appropriate performance targets for them, and how challenging are those performance targets?
7 Performance evaluation	What processes, if any, does the organization follow for evaluating individual, group, and organizational performance? Are performance evaluations primarily objective, subjective or mixed and how important are formal and informal information and controls in these processes?
8 Reward systems	What rewards – financial and/or non-financial – will managers and other employees gain by achieving performance targets or other assessed aspects of performance (or, conversely, what penalties will they suffer by failing to achieve them)?
9 Information flows, systems & networks	What specific information flows – feedback and feedforward –, systems and networks has the organization in place to support the operation of its performance management systems?
10 Performance management system use	What type of use is made of information and of the various control mechanisms in place? Can these uses be characterized in terms of various typologies in the literature? How do controls and their uses differ at different hierarchical levels?
11 Performance management system change	How have the performance management systems altered in the light of the change dynamics of the organization and its environment? Have the changes in performance management systems design or use been made in a proactive or reactive manner?
12 Strength and coherence	How strong and coherent are the links between the components of performance management systems and the ways in which they are used (as denoted by the above 11 questions)?

Tab. 1: The twelve questions of Ferreira & Otley's (2009) performance management framework

Structure of the framework. Performance management as an emerging discipline strives for a holistic view on managing performance. Ferreira & Otley (2009) integrate related managerial disciplines. Question 1 refers to practices used to manage organizational culture and is inspired by Simons (1995, pp. 33-39) beliefs systems. Question 2 and 4 refer to the strategic management literature (Langfield-Smith, 2007, pp. 755-757). Question 3 refers to research on

organizational design (Chenhall, 2003, pp. 144-148). Questions 5 to 8 are the classical areas of management accounting and control, i.e. performance measurement, target setting, performance evaluation, and reward systems (Merchant & Van der Stede, 2007). Questions 5 to 8 also relate to what Simons (1995, pp. 177, 180) refers to as “performance measurement and feedback systems”. Questions 9 to 12 can be described as ‘meta-questions’ in the sense that they permeate questions 1 to 8. They describe supporting practices and systems, their use, their evolution, links and interdependencies.

The performance management framework is organized in three levels (Ferreira & Otley, 2009, p. 277). First, questions 1 to 8 “are at the core of the performance management system”. Second, questions 9 to 12 “pervade the whole performance management system and have been explicitly included to help provide a more holistic perspective”. The third level relates to contingent variables such as national culture (in contrast to organizational culture) and further contextual factors from the business environment. These contexts influence the design and use of the performance management system.

2.2.4. Design of performance management systems

What is design. The design of performance management systems refers to the design options that managers have at their disposal and the design choices managers have to make in specifying the characteristics and attributes of performance management practices (cf. Ferreira, 2002, pp. 24-29). The idea of performance management system design is best illustrated with an example.

In question 3, Ferreira & Otley (2009, p. 269) ask “what is the organization structure [...]?” and they define that “organization structures are [...] formed as means of establishing formally the specification of individual roles and tasks to be carried out [...] and in doing so, they entrust and empower individuals to act within their sphere of responsibility” (p. 269). Ferreira & Otley (2009, p. 269) go on and elaborate on possible *design options*: “[organization] structures include the functional, the multidivisional, the holding company, the matrix, the transnational, the team-based, and the project-based”. When a company adopts a functional organization, then their *design choice* is a functional organization.

Defining design. The exact meaning of ‘design’ seems appears to be not well-defined in the literature. It appears that authors assume that it is just clear what is meant with ‘design of performance management systems’. This lack of definition as well as the lack of a well-developed taxonomy for design options reflects both the rather low level of precise research on the design of holistic performance management systems and the high complexity of this task. This conclusion is unsettling because management practice is confronted with exactly the exercise of designing holistic, integrated performance management systems and not individual performance management practices only. The precondition for design is that managers have the choice as well as the possibility of a deliberate decision – in contrast to decisions being imposed

on them (Malmi & Brown, 2008, p. 294). Performance management design is defined as follows (cf. Ferreira, 2002, pp. 24-29).

Performance management system design

Performance management system *design* is defined as the deliberate, systematic and consistent decision to apply a design option with certain characteristics over a clearly distinct set of other design options with distinguishable characteristics.

Taxonomies of design. The number of potential design options is very large and the task to categorize all design options into an empirical taxonomy or a conceptual typology is difficult. Attempts to provide an overview over design options include Bedford & Malmi's (2015) management control constructs, Malmi & Brown's (2008) description of management control system packages, Merchant & Van der Stede's (2007) management control systems text book as well as Simons' (1995) levers of control theory.

Ferreira & Otley's (2009) framework appears to be the most elaborated, as they propose an extended performance management framework that "provides a useful research tool for those wishing to study the design and operation of performance management systems by providing a template to help describe the key aspects of such systems" (p. 263). However, Ferreira & Otley (2009) are not completely consistent in both defining the themes and practices addressed in their questions and in elaborating design options. Where necessary this study supplements their definitions and design options with established literature such as Bedford & Malmi (2015), Merchant & Van der Stede (2007) and Simons (1995).

Theory development placed in cross case analysis. The development of the theory on each of Ferreira & Otley's (2009) twelve performance management system components is deliberately placed into the cross case analysis in chapter 4.1 for two reasons. First, this combination makes the cross case analysis easier to read and understand. And second, combining theoretical foundations with analysis facilitates the links between theory and empirical evidence from three case studies.

2.2.5. Simons' levers of control theory

An action oriented-theory of control. Simons (1995) introduces an "action-oriented theory of control" (p. ix) in his seminal book "levers of control – how managers use innovative control systems to drive strategic renewal". His theory is action-oriented, as it is the result of a series of well-published case studies (Simons, 1990, 1991, 1994) as well as speeches and teaching. This 'action orientation' shall be highlighted, as Simons bridges the practice-research gap and develops a holistic framework, in contrast to analyzing individual control practices only. His levers of control can also be understood and used by management practitioners (Tessier & Otley, 2012, p. 172). Simons' framework is the theoretical foundation of several frequently

quoted publications, such as Bisbe & Otley (2004), Henri (2006a), Tuomela (2005) and Widener (2007).

Three levels of the levers of control framework. Simons (1995, pp. 6-8) levers of control framework has three levels. First, at the core of his analysis is a sound business strategy for profitable growth. Second, the successful implementation of a sound business strategy for profitable growth requires, according to Simons, the analysis and management of four key constructs: core values, risks to be avoided, critical performance variables, and strategic uncertainties. Core values refer to the purpose, basic values and general direction of the organization (p. 34). Risks to be avoided refer to domains of organizational action that are not acceptable and should not be pursued, for instance due to strategic, compliance or reputational risks (pp. 39-42). Critical performance variables refer to the most important performance dimensions of an organization's intended strategy; they are those factors that "either influence the probability of successfully meeting goals (an effectiveness criterion) or provide the largest potential for marginal gain over time (an efficiency criterion)" (p. 64). Strategic uncertainties refer to the "the uncertainties and contingencies that could threaten or invalidate the current strategy of the business" (p. 94) and might require the development of new, emergent strategies.

The distinction between critical performance variables and strategic uncertainties is important (Simons, 1995, p. 95, exhibit 5.1). Both refer to the classical set of management control systems – objectives, performance measurement, evaluation as well as rewarding, with performance measurement being at the core of Simons' analysis (cf. Simons, 1995, p. 177). However, critical performance variables and strategic uncertainties ask fundamentally different questions and require different answers (Simons, 1995, p. 95). Critical performance variables recurrently require managers to ask: What must we do well to implement today's intended strategy? In contrast, strategic uncertainties require managers to ask: What factors could threaten the achievement of our vision and require a new, emergent strategy for tomorrow? While critical performance variables search for definite and correct *answers* in the present, strategic uncertainties search for the correct *questions* to be asked in the future (Simons, 1995, p. 95).

The third level refers to the actual levers of control. In Simons' (1995) levers of control theory is an alternative term for management control systems. Simons (1995, pp. 6-7) defines that each of the four constructs (core values, risks to be avoided, critical performance variables and strategic uncertainties) "is controlled by a different system, or lever, the use of which has different implications. These levers are: (1) beliefs systems, used to inspire and direct the search for new opportunities; (2) boundary systems, used to set limits on opportunity seeking behavior; (3) diagnostic control systems, used to motivate, monitor and reward the achievement of specified goals; and (4) interactive control systems, used to stimulate organizational learning and the emergence of new ideas and strategies."

Strategy and management control. Simons (1995) elaborates a clear definition of strategy by drawing on Mintzberg's (1987) concept. Each of these concepts of strategy is controlled by a different lever of control. Belief systems control strategy as a perspective – a shared purpose and a unique way of doing things (Simons, 1995, pp. 9-10; Mintzberg, 1987, pp. 16-17). Boundary systems control strategy as a position – competition based on economic substance such as differentiation, cost or customer segments (Simons, 1995, p. 9; Mintzberg, 1987, pp. 15-16). Diagnostic control systems control strategy as a plan – a deliberate and predetermined course of activities (Simons, 1995, p. 8; Mintzberg, 1987, pp. 11-12). Interactive control systems control strategy as a pattern – an intended or spontaneous consistency in organizational behavior and a pattern in a stream of actions (Simons, 1995, p. 9; Mintzberg, 1987, pp. 12-13).

Simons' (1995) definitions of four levers of control

Beliefs systems (core values, strategy as a perspective): “A beliefs system is the explicit set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose, and direction for the organization. [...]. Beliefs systems convey information about how the organization creates value, the level of performance desired, and how individuals are expected to manage relationships both internally and externally. [...]. The primary purpose of a beliefs system is to inspire and guide organizational search and discovery.” (Simons, 1995, pp. 34-36).

Boundary systems (risks to be avoided, strategy as a position): “Boundary systems [...] delineates the acceptable domain of strategic activity for organizational participants. [...]. They establish limits, based on defined business risks, to opportunity seeking.” (Simons, 1995, p. 39).

Diagnostic control systems (critical performance variables, strategy as a plan): “Diagnostic control systems are the formal information systems that managers use to monitor organizational outcomes and correct deviations from preset standards of performance. Three features distinguish diagnostic control systems: (1) the ability to measure the outputs of a process, (2) the existence of predetermined standards against which actual results can be compared, and (3) the ability to correct deviations from standards.” (Simons, 1995, p. 59).

Interactive control systems (strategic uncertainties, strategy as a pattern): “All interactive control systems have four defining characteristics: Information generated by the system is an important and recurring agenda addressed by the highest levels of management. The interactive control system demands frequent and regular attention from operating managers at all levels of the organization. Data generated by the system are interpreted and discussed in face-to-face meetings of superiors, subordinates, and peers. The system is a catalyst for the continual challenge and debate of underlying data, assumptions, and action plans.” (Simons, 1995, p. 97).

Three categories in Simons' four levers. Bisbe & Otley (2004, p. 711) point out that “Simons classifies formal management control systems in three categories: beliefs systems, boundary systems (both used to frame the strategic domain) and feedback and measurement systems (used to elaborate and implement strategy)”. In Simons’ (1995, p. 177) words: “Beliefs systems and boundary systems differ from feedback and measurement systems in their technical design attributes – the type of information they contain, how information is disseminated, and the purpose of the system. Within measurement-based control systems [i.e. diagnostic and interactive control systems], a further distinction can be made according to the attention patterns of senior managers and the effects of these attention patterns on the formation and implementation of strategy.” Simons’ (1995) framework is outlined in figure 3.

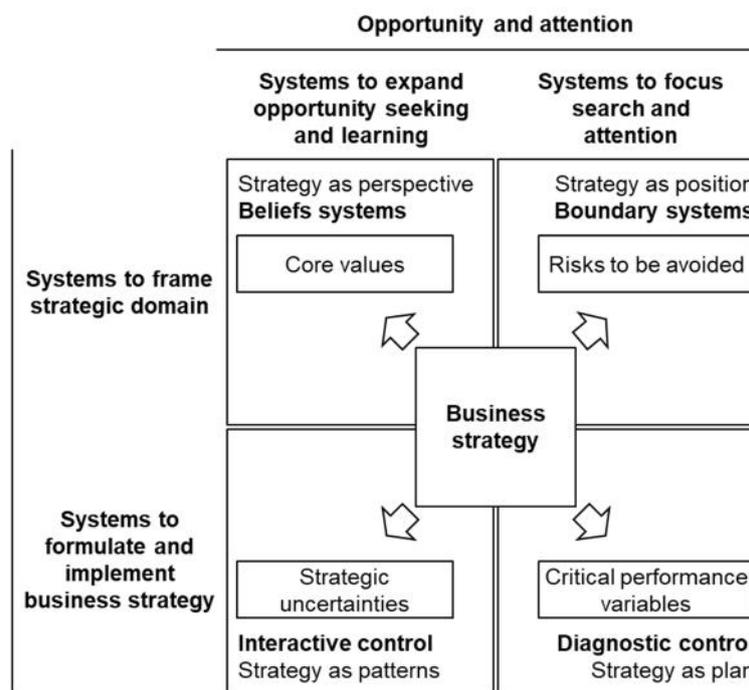


Fig. 3: The four levers of control (adapted from Simons, 1995, p. 157, 159)

Growth and levers of control. Simons (1995, p. 10) makes clear why the association of levers of control to each strategy concept are important: “Implementing strategy effectively requires a balance among the four levers of control. This balance permits the simultaneous management of strategy as plan, pattern, position, and perspective.” And (1995, p. 29, italics added): “Control [of business strategy] implies managing the inherent tension between creative innovation, on the one hand, and predictable goal achievement, on the other, so that *both are transformed into profitable growth*. Effective control of strategy requires both the freedom to innovate and the assurance that individuals are working productively toward pre-defined goals. Beliefs systems, boundary systems, diagnostic control systems, and interactive control systems are the four basic levers used to manage this tension.”

2.2.6. Use of performance management systems

Discussion. Early on the management accounting and control literature recognized that not only the *design* is relevant for the effectiveness of performance management systems, but also the specific *use* of performance management practices and the information they generate (e.g. Govindarajan, 1984; Hopwood, 1972; Otley, 1978). Ferreira & Otley (2009, p. 265) state that “the importance of management control system use is now a well-established aspect of the literature”.

At the same time Ferreira & Otley (2009, p. 274) recognize that “the concept of ‘use’ has not been well developed in the literature” from a theoretical point of view and “there is considerable scope for the development and operationalisation of the concept of use”. In a recent paper, Su, Baird & Schoch (2015, p. 41) agree: “While a significant body of management control system literature has focused on the examination of the existence, characteristics and/or relative importance of controls, less emphasis has been placed on examining the manner in which controls are used and the subsequent impact on organizational performance.” This literature appears to imply that design and use are distinct concepts, whose relationship to each other is not completely clear.

Concepts of use. The underlying premise of the concept of use is that performance management systems and performance information can be used in different “styles” (Chapman, 1997, pp. 192-193). A variety of concepts of use have been suggested by the literature, most notably Broadbent & Laughlin (2009), Ferreira & Otley (2009), Hopwood (1972) and Simons (1995). Table 2 summarizes these four different concepts.

Study	Expand opportunity seeking	Focus search and attention
Hopwood (1972)	Profit conscious and non-accounting use (flexible use)	Budget constrained use (rigid use)
Simons (1995)	Interactive use	Diagnostic use
Broadbent & Laughlin (2009)	Relational use	Transactional use
Ferreira & Otley (2009)	Feed-forward information flows	Feed-back information flows

Tab. 2: Concepts of use

The first (Chapman, 1997, p. 192) and widely adopted concept of use has been suggested by Hopwood (1972). Hopwood (1972, p. 160) distinguishes three different styles of use of accounting information in performance evaluation: the budget constrained style (“the evaluation is primarily based upon the cost center head's ability to continually meet the budget on a short-term basis”); the profit conscious style (“the performance of the cost center head is evaluated on the basis of his ability to increase the general effectiveness of his unit's operations in relation to the long-term purposes of the organization”); and the non-accounting style (“accounting data play a relatively unimportant part in the supervisor's evaluation of the cost center head's performance”).

Broadbent & Laughlin (2009) distinguish transactional use and relational use of performance management systems depending on the level of specification and sophistication of ends to be achieved and means to achieve these ends. Transactional use has “a high level of specificity about the ends to be achieved (e.g. through performance measures, targets, etc.) and often a clear specification of the means needed to achieve these defined ends” (Broadbent & Laughlin, 2009, p. 289). In contrast, relational use involves “the expectation is that the ends and means are deliberately subject to a discourse between the stakeholders and chosen by them” (Broadbent & Laughlin, 2009, p. 289). Broadbent & Laughlin (2009, p. 290) emphasize that “whilst the transactional and relational are absolute ideal-types it is possible and appropriate to see them empirically as two ends of a continuum”.

Simons' concept of use. Ferreira & Otley (2009, p. 274) consider Simons' (1995) theory of diagnostic and interactive use of control information as one of the most substantial contributions to the concept of performance management system use. They apply Simons' theory extensively in their performance management framework (pp. 265-266, 274). They also link their concept of feed-back and feed-forward information flows to Simons' (1995) concept of use (Ferreira & Otley, 2009, pp. 273-274). For this reason, this study applies Simons' (1995) concept of use.

Performance management system use

Diagnostic use: “Diagnostic control systems are the formal information systems that managers use to monitor organizational outcomes and correct deviations from preset standards of performance. Three features distinguish diagnostic control systems: (1) the ability to measure the outputs of a process, (2) the existence of predetermined standards against which actual results can be compared, and (3) the ability to correct deviations from standards.” (Simons, 1995, p. 59)

Interactive use: “All interactive control systems have four defining characteristics: Information generated by the system is an important and recurring agenda addressed by the highest levels of management. The interactive control system demands frequent and regular attention from operating managers at all levels of the organization. Data generated by the system are interpreted and discussed in face-to-face meetings of superiors, subordinates, and peers. The system is a catalyst for the continual challenge and debate of underlying data, assumptions, and action plans.” (Simons, 1995, p. 97)

Simons (1995, p. 158) further explains: “Interactive control requires ongoing and intensive managerial involvement; diagnostic controls need periodic and exception-based involvement; and beliefs and boundary systems require only sufficient downward communication to ensure that core values and rules of the game are understood. Diagnostic control systems conserve management attention; interactive systems amplify management attention.”

Simons (1995, pp. 177, 180) relates his concept of diagnostic and interactive use to performance measurement and feedback systems. As illustrated in figure 4, Simons' (1995, p. 180) makes clear that diagnostic and interactive use are meant only for measurement and feedback systems. Performance measurement and feedback systems relate to Ferreira & Otley's (2009) performance management system components of key performance measures, target setting and performance evaluation. Only key performance measures, target setting and performance evaluation can be used diagnostically or interactively. Rewards systems play a significant role in this context, as these practices can support the type of use that managers choose.

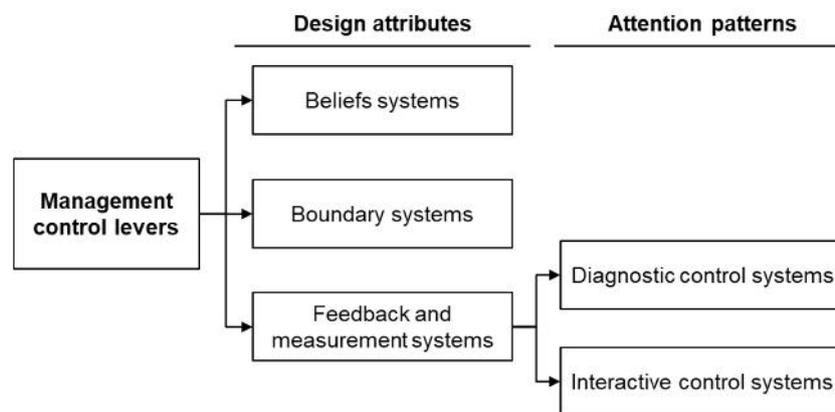


Fig. 4: Distinguishing features of control levers (Simons, 1995, p. 180, figure A.1)

A broader idea of use. However, the other components of Ferreira & Otley's (2009) performance management framework – vision and mission, key success factors (KSF), organization structure, strategies and plans, information flows, systems and networks – can be used in different styles as well. Simons (1995, p. 157) describes beliefs systems and interactive control systems as “systems to expand opportunity seeking and learning”, while boundary systems and diagnostic control systems are defined as “systems to focus search and attention”. For beliefs systems, Simons (1995, pp. 34-36) defines: “The primary purpose of a beliefs system is to inspire and guide organizational search and discovery.” For boundary systems, Simons (1995, p. 39) defines: “They establish limits, based on defined business risks, to opportunity seeking.”

Such definition has substantial similarities to what (Argyris & Schön, 1978, p. 29) define as single loop and double loop learning and what March (1991, p. 78) defines as exploration and exploitation (see chapter 2.3.3). In fact, Simons (1995, p. 160) explicitly states: “All four control systems have elements of both control and learning, and all four work simultaneously. Boundary systems are weighted heavily to control and limits. However, they also reflect learning since past mistakes and the tactical moves of competitors dictate the adjustment of ethical and strategic boundaries. Diagnostic control systems clearly emphasize control and efficiency, but setting goals, measuring outcomes, remedying variances, and assigning rewards

involve elements of innovation and learning. It is mostly single-loop learning, but, occasionally, double-loop learning occurs. Interactive control systems also involve both control and learning although learning and innovation dominate, as senior managers use the interactive control process as a catalyst to force the organization to monitor changing market dynamics and motivate debate about data, assumptions, and action plans. Over time, the information and learning generated by interactive control systems can be embedded in the strategies and goals that are monitored by diagnostic control systems.”

Performance measurement and feedback systems can be used for single loop learning or double loop learning. The use of beliefs systems and boundary systems is in some way more pre-determined than for performance measurement and feedback systems. Beliefs systems, such as mission, vision and values, are more determined and are rather used to support double loop learning. In contrast, boundary systems, such as codes of conducts or rules and procedures, rather support single loop learning. Whether or not beliefs systems, boundary systems as well as performance measurement and feedback systems can be *used* to facilitate single loop learning (exploitation) or double loop learning (exploration) or both (ambidexterity) depends on the *design* of the overall performance management system.

2.2.7. Performance management as system or package

Discussion. Simons’ (1995) levers of control is a well-known example of an integrated system of practices for managing performance. It is a long standing insight in the management accounting and control literature that management controls operate and are effective in relation to and in dependence to each other (see discussions in Dent, 1990; Ferreira & Otley, 2009; Malmi & Brown, 2008; Otley, 1980). The journal Management Accounting Research dedicated the topic “management control systems as a package” a special issue in 2008.

Nonetheless, Bedford & Malmi assess in 2015 that there are still “few systematic insights available” (p. 6). Stringer (2007, p. 97) reviews the literature and finds that “few field studies examine all aspects of a performance management system”. This is surprising as studies conclude that management control systems, which are designed in an internally consistent way in an integrated system, likely enhance firm performance (Bedford, Malmi & Sandelin, 2016, p. 22; Chenhall & Langfield-Smith, 1998, p. 256; Drazin & Van de Ven, 1985; Gong & Ferreira, 2014; Khandwalla 1973; Sandelin, 2008; Widener, 2007).

Theoretical relevance. Malmi & Brown (2008, p. 287-288) identify three theoretically relevant reasons for studying management control holistically. First, management control practices do not operate isolated from each other and explanations on individual practices or particular systems thus remain fragmentary. Second, the effectiveness of management control innovations, can only be assessed in relation to the functioning of the overall management control package. Third, conclusions about the design of individual management control systems

to achieve a desired outcome might only be possible with a consistent understanding of whether, how and why individual control practices are complements or substitutes in different contexts.

Practical relevance. There are also practical reasons to think about management control as a system. Bromwich & Scapens (2016, p. 7) state that “practitioners may be expected to take a more holistic view of organisations” – managers have to design and use the complete system and not just parts of it. The management accounting and control literature is consistent in the analysis that less integrated control practices and systems lead to inferior performance (see above). Milgrom & Roberts (1995, p. 191) find that modifying just some practices may “not come at all close to achieving all the benefits that are available through a fully coordinated move, and may even have negative pay-offs”. Bedford & Malmi (2015, p. 3) state that “piecemeal alterations work against developing efficiency in operational routines and can destroy existing complementarities between components”.

It can be suggested that the success of the balanced scorecard and the strategy map (Kaplan & Norton, 1996, 2001) or value-based management (Ittner & Larcker, 2001) can also be ascribed to the high level of purposefully designed complementarity of several interdependent practices of the holistic performance management system. The evolution from management accounting and control to integrated performance management is also evident in the ambition to consider these interdependencies between individual performance management practices.

System vs. package. Malmi & Brown (2008, p. 291) outline the distinction between system and package: “The term ‘package’ is employed because in most contemporary organisations there are a number of management control systems. If all those were designed and coordinated intentionally, we might call the whole system a management control system. However, the concept of a package points to the fact that different systems are often introduced by different interest groups at different times, so the controls in their entirety should not be defined holistically as a single system, but instead as a package of systems.” Grabner & Moers (2013, p. 408) agree, but they define package and system more precisely.

Package and system

“Management control as a *package* represents the complete set of control practices in place, regardless of whether the management control practices are interdependent and/or the design choices take interdependencies into account.” (Grabner & Moers, 2013, p. 408, italics added)

“Management control practices form a *system* if the management control practices are interdependent and the design choices take these interdependencies into account.” (Grabner & Moers, 2013, p. 408, italics added)

Interdependencies. Following Grabner & Moers (2013, p. 407-408) there are three distinct levels that are subject to analysis: individual control practices (e.g. bonuses), individual

management control systems or sub-systems (e.g. the financial compensation system), and management control systems or packages (e.g. the holistic performance management system as outlined by Ferreira & Otley, 2009, p. 268).

Researchers who investigate individual practices or sub-systems take a reductionist approach, which “assumes that the anatomy of management control within the organization can be decomposed into individual management control practices that can be examined in isolation” (Grabner & Moers, 2013, p. 411). Of course, investigating individual practices or systems do contribute to our understanding. However, “a performance management system is greater than the sum of its parts” (Ferreira & Otley, 2009, p. 275) and interdependencies need to be considered to understand the operation and effectiveness of an organizations performance management approach. Grabner & Moers (2013, p. 408, italics added) propose the following definitions for interdependencies and its two types, complements and substitutes.

Interdependencies: complements and substitutes

“*Interdependence* implies that the value of one management control practice depends on the use of another management control practice, and vice versa.” (Grabner & Moers, 2013, p. 408, italics added)

“Given the importance of interdependence for understanding ‘internally consistent’, we provide a formal definition of interdependence between management control practices and the two types of interdependencies that exist, i.e., complements and substitutes.” (Grabner & Moers, 2013, p. 408)

“Management control practices are *complements* when the benefits of one management control practice increase with the use of (some) other management control practice (and vice versa). Management control practices are *substitutes* when the benefits of one management control practice decrease with the use of (some) other management control practice (and vice versa).” (Grabner & Moers, 2013, p. 412, italics added)

The control problem. Grabner & Moers (2013, p. 414) also elaborate on the control problem as a relevant parameter for interdependence: “Given that a set of controls implemented always reflects the underlying control problem it tries to resolve, it is crucial to first define the control problem that should be addressed by a particular combination of controls. Control mechanisms can be complements in order to solve a control problem that is prevalent in one context, and substitutes to deal with another control problem in a different context.” The discussion of performance management as system or package is thus dependent on the context and the control problem, which interdependent performance management practices in an integrated performance management system are supposed to address.

2.3. Organizational learning

2.3.1. Defining organizational learning

Definition. The concept of organizational learning and its relevance to performance has been subject to research in numerous studies and across academic disciplines. Organizations need to learn in order to adapt to changes in their internal and external environment (Argyris & Schön, 1978, pp. 1-6; Kloot, 1997, pp. 47-50), to continuously improve in their operations (Garvin, 1993, p. 78; Gino & Staats, 2015, p. 112; Sorenson, 2003, pp. 446-447), to innovate new products and services (Chenhall, 2005, p. 404), to find new business opportunities (Argote & Miron-Spektor, 2011, p. 1123; Sosna, Trevinyo-Rodríguez & Velamuri, 2010, pp. 383-385), and to achieve sustainable growth (Macpherson & Holt, 2007, p. 172; Penrose, 1960, p. 3; Raisch & Birkinshaw, 2008, 375-378; Wernerfelt, 1984, p. 178).

Study	Definitions of organizational learning
Argote & Miron-Spektor (2011, p. 1124)	"Most researchers would agree with defining organizational learning as a change in the organization's knowledge that occurs as a function of experience."
Argyris & Schön (1978, p. 29)	"Organizational learning occurs when members of the organization act as learning agents for the organization, responding to changes in the internal and external environments of the organization by detecting and correcting errors in organizational theory-in-use, and embedding the results of their inquiry in private images and shared maps of the organization."
Garvin (1993, p. 80)	"A learning organization is an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insight."
Huber (1991, p. 89)	"An entity learns if, through its processing of information, the range of its potential behaviors is changed."
Levitt & March (1988, pp. 319-320)	"Organizational learning is viewed as routine-based, history-dependent, and target-oriented and organizations are seen as learning by encoding inferences from history into routines that guide behavior."

Tab. 3: Definitions of organizational learning

Several definitions of organizational learning have been suggested, as provided in table 3. This study applies the definition provided by Aranda, Arellano & Dávila (2017). Their definition relies on previous research (Argote & Miron-Spektor, 2011; Huber, 1991; Levitt & March, 1988; Nonaka, 1994). In addition, the authors look at organizational learning from a managerial perspective.

Organizational learning

“Organizational learning is the process of acquiring, translating, and enacting new knowledge through organizational routines that systematically alter subsequent behavior. This type of learning emerges from individuals and their intuition but necessarily involves organizational routines as learning becomes institutionalized. We interpret organizational learning as changes in managers' behavior rather than changes to organizational outputs and outcomes.” (Aranda, Arellano & Dávila, 2017, p. 1193)

Operationalizing organizational learning. In addition to Aranda, Arellano & Dávila's (2017, p. 1193) definition, this study uses three theories to operationalize organizational learning for the investigation. First, Huber's (1991) theory of organizational learning processes outlines the four core processes as well as sub-processes that contribute to organizational learning. Second, Argyris & Schön (1978) outline a theory of the two different organizational learning modes of single loop learning and double loop learning. These two organizational learning modes are similar to March's (1991) theory of exploration and exploitation. Third, Garvin (1993) proposes a concept that outlines different stages of knowledge in an organization, starting from recognizing a good prototype in stage 1 to a fully automated process in stage 8. These three theories are elaborated in the next three chapters.

2.3.2. Organizational learning processes

Definition. An influential paper is Huber's (1991) "organizational learning – the contributing processes and the literatures". His ideas have been previously applied by quantitative and qualitative management accounting and control research such as Batac & Carassus (2009), Chenhall (2005), Kloot (1997) and Aranda, Arellano & Dávila (2017). This study uses Huber's (1991) organizational learning processes to understand how performance management system design and use influence organizational learning in general terms. Huber (1991, p. 90) introduces the following four core processes that contribute to organizational learning: knowledge acquisition, information distribution, information interpretation as well as organizational memory.

Huber's (1991) organizational learning processes

"Knowledge acquisition is the process by which knowledge is obtained. Information distribution is the process by which information from different sources is shared and thereby leads to new information or understanding. Information interpretation is the process by which distributed information is given one or more commonly understood interpretations. Organizational memory is the means by which knowledge is stored for future use." (Huber, 1991, p. 90)

Sub-processes. Huber (1991, p. 90) elaborates on further "sub-processes" that contribute to the four main organizational learning processes. These sub-processes make the four general organizational learning process more concrete and are thus relevant for the analysis. These sub-processes are illustrated in figure 5.

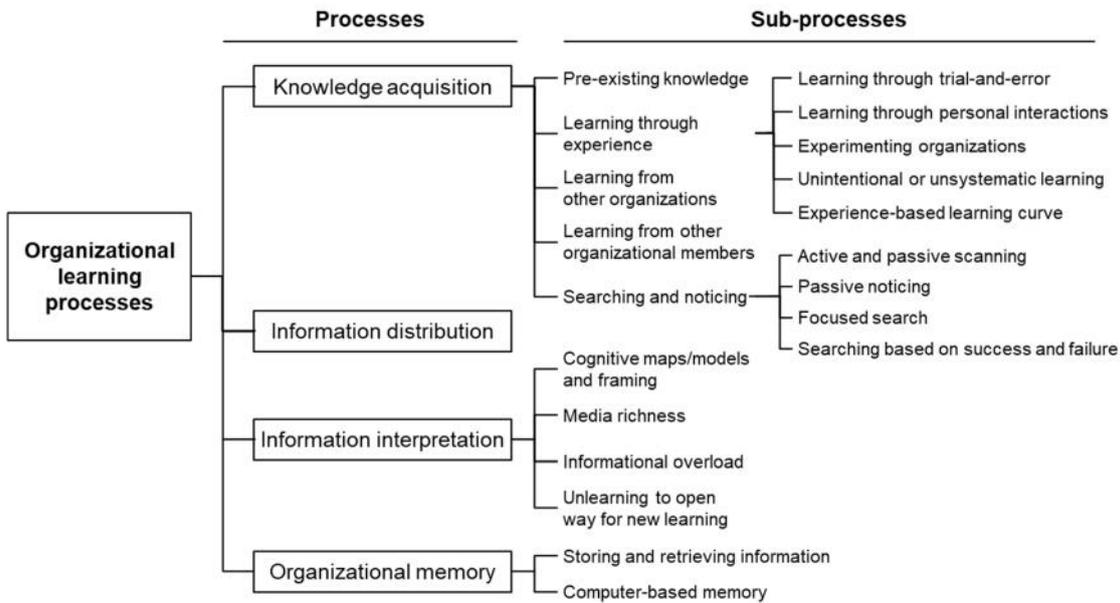


Fig. 5: Organizational learning processes and its sub-processes (adapted from Huber, 1991, p. 90)

Cognitive models and framing. Huber (1991) provides a literature review of academic studies to explain all organizational learning processes and sub-processes. Most of Huber's (1991) organizational learning sub-processes are quite self-explanatory. The only two terms that shall be clarified are "cognitive maps" or "cognitive models", respectively, as well as "framing". For cognitive maps, Kitchin (1994, p. 2) defines: "At its most general, a cognitive map is a mental construct which we use to understand and know the environment. [...]. A cognitive map is a mental devise and store which helps to simplify, code and order the endlessly complex world of human interaction with the environment." Framing relates to the observation that the way of how information is labeled, described and provided affects its interpretation (Dutton & Jackson, 1987; Tversky & Kahneman, 1981). Huber (1991, p. 103) points out that "if information is not uniformly framed when distributed to different units, uniform interpretations are less likely to be achieved". Performance management practices frame performance information and create or at least contribute to cognitive models.

Broad and narrow organizational learning processes. The four organizational learning processes can be broad and general, or narrow and focused. For instance, passive noticing is a rather broad process of knowledge acquisition, while focused search is rather narrow. Unintentional and unsystematic learning is rather broad, while the experience-based learning curve is rather narrow. Generally storing information is rather broad, while the pre-existing structures of computer-based memory of financial information is rather narrow and focused. Most organizational learning processes can be broad or narrow. Broadness and narrowness are a matter of the problems to be solved. For example, trial-and-error can be applied to learn broadly about a high-level idea, and trial-and-error can be used to learn about a specific

efficiency problem. Cognitive models can be broad, e.g. cultural perspectives on the world, or focused, e.g. non-financial KPIs in standardized customer service processes.

Helping or hindering organizational learning. Argyris & Schön (1978, p. 30) pose a question that is central to performance management system design and use: “What facilitates and what inhibits organizational learning?” Huber (1991) proposes the following criteria. “[...] an organization learns if any of its units acquires knowledge that it recognizes as potentially useful to the organization” (Huber, 1991, p. 89). “[...] more organizational learning occurs when more of the organization's components obtain this knowledge and recognize it as potentially useful” (Huber, 1991, p. 90). “[...] more organizational learning occurs when more and more varied interpretations are developed, because such development changes the range of potential behaviors.” And “[...] more organizational learning occurs when more organizational units develop uniform comprehensions of the various interpretations” (Huber, 1991, p. 90). “It follows that variables likely to influence the ongoing effectiveness of organizational memory include membership attrition, information distribution and organizational interpretation of information, the norms and methods for storing information, and the methods for locating and retrieving stored information” (Huber, 1991, p. 90).

Overall, in line with Huber’s (1991) theory this study suggests: Organizational learning is facilitated, when knowledge acquisition, information distribution, information interpretation and organizational memory are facilitated as outlined above. By implication, organizational learning is hindered, when knowledge acquisition, information distribution, information interpretation and organizational memory are inhibited.

2.3.3. Organizational learning modes

Definition. Huber’s (1991) processes are just one dimension of organizational learning. A central interest in organizational learning theory is the interaction between two modes of organizational learning (Gibson & Birkinshaw, 2004, p. 210; Raisch & Birkinshaw, 2008, pp. 377-378). These two modes have been termed differently (Raisch & Birkinshaw, 2008, p. 378), but are commonly referred to as double-loop and single-loop learning (Argyris & Schön, 1978), or exploration and exploitation (March, 1991).

Argyris & Schön (1978, p. 29) define single loop learning and double loop learning as follows:

Single loop and double loop learning

“In organizational single-loop learning, the criterion for success is effectiveness. Individuals respond to error by modifying strategies and assumptions within constant organizational norms. In double-loop learning, response to detected error takes the form of joint inquiry into organizational norms themselves, so as to resolve their inconsistency and make the new norms more effectively realizable.” (Argyris & Schön, 1978, p. 29)

March (1991, p. 71) defines exploration and exploitation as follows:

Exploration and exploitation

“Exploration includes things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation. Exploitation includes such things as refinement, choice, production, efficiency, selection, implementation, execution.”
(March, 1991, p. 71)

Organizational learning triangle. Batac & Carassus (2009) have published one of the few papers that explicitly analyzes the relationship between management accounting and control and organizational learning. They explain single loop and double loop learning well. They use a ‘triangle’ of objectives, behavior/activities/methods and results to differentiate the concept of single loop and double loop learning. This triangle is illustrated in figure 6.

Batac & Carassus (2009, p. 104) explain: “When a discrepancy or deviation appears between objectives, methods and results, learning mechanisms are initiated.” Single loop learning “[...] consists in generating behavior changes which are adaptive but do not lead to any major changes in values, since the objectives remain the same” (p. 104). Double loop learning “[...] occurs when the organization revises its objectives and the criteria it uses to measure its performance. It is thus easier to understand the relationship between control and learning in the management control loop” (p. 104). Single loop learning initiates changes to behavior/activities/methods based on performance outcomes, but does not change underlying objectives. Double loop learning initiates changes to both behavior and underlying objectives.

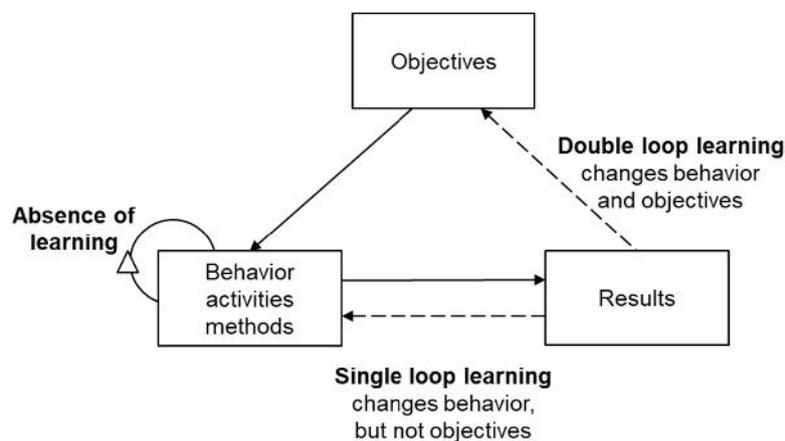


Fig. 6: Single loop learning and double loop learning (adapted from Batac & Carassus, 2009, p. 109)

Organizational learning modes and performance management. Explicit and implicit choices between single loop and double loop learning, or exploration and exploitation, respectively, influence an organization’s approach to performance management. March (1991, p. 71) explains: “Both exploration and exploitation are essential for organizations, but they compete

for scarce resources. As a result, organizations make explicit and implicit choices between the two. The explicit choices are found in calculated decisions about alternative investments and competitive strategies. The implicit choices are buried in many features of organizational forms and customs, for example, in organizational procedures for accumulating and reducing slack, in search rules and practices, in the ways in which targets are set and changed, and in incentive systems.” Therefore, organizational learning modes have profound implications for performance management system design and use, and vice versa.

Balancing organizational learning modes. Exploration and exploitation can be balanced in three different ways: temporal separation, structural separation, and parallel structures (Raisch, 2008, pp. 485-486). Temporal separation includes that organizations pursue exploration and exploitation in different periods. Structural separation means that specific, distinct organizational units are supposed to pursue either exploration or exploitation. Parallel structures allow organizational participants to move back and forth between exploration and exploitation, depending on their respective tasks. Gibson & Birkinshaw (2004, p. 209) suggest a further way, “contextual ambidexterity”, “defined as the capacity to simultaneously achieve alignment and adaptability at a business-unit level”. Birkinshaw & Gibson (2004, p. 50) elaborate that “individual employees divide their time between alignment-focused and adaptability-focused activities” and the “role of top management [is] to develop the organizational context in which individuals act”. This organizational context is created by performance management systems.

2.3.4. Stages of knowledge framework

Dimensions of knowledge. Organizational learning processes and organizational learning modes create organizational knowledge. Aranda, Arellano & Dávila, (2017, p. 1193) define: “Organizational knowledge is the set of concepts and assumptions about the cause-effect relationships that the organization uses to form expectations about its activities and to define the representation of its environment.”

Argote & Miron-Spektor (2011, pp. 1125-1126) emphasize: “Knowledge can be characterized along many dimensions. For example, knowledge can vary from explicit knowledge that can be articulated to tacit knowledge that is difficult to articulate. A related dimension of knowledge is whether it is declarative or procedural. Declarative knowledge is knowledge about facts – what researchers have termed know-what. Procedural knowledge is knowledge of procedures, or know-how. Knowledge can also vary in its causal ambiguity, or extent to which cause-effect relationships are understood. In addition, knowledge can vary in its demonstrability, or ease of showing its correctness and appropriateness. Furthermore, knowledge can be codified or not.”

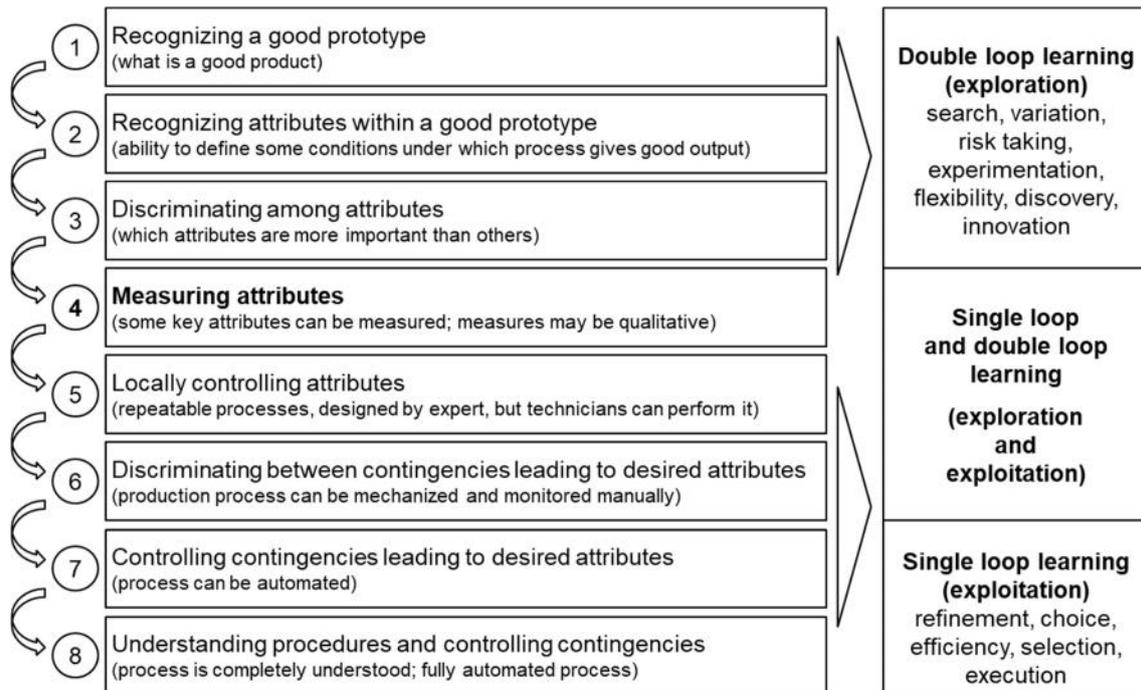


Fig. 7: Stages of knowledge framework and organizational learning (adapted from Garvin, 1993, p. 84)

Stages of knowledge. Argote & Miron-Spektor (2011, pp. 1125-1126) outline only binary dimensions of knowledge. Garvin (1993, p. 84) suggests further dimensions in his “stages of knowledge” framework (see figure 7): “Operating knowledge can be arrayed in a hierarchy, moving from limited understanding and the ability to make few distinctions to more complete understanding in which all contingencies are anticipated and controlled.” Organizational learning is the process of “pushing organizations up the hierarchy, from lower to higher stages of knowledge”.

Knowledge stages and organizational learning modes. This study suggests that organizational learning modes and stages of knowledge relate to each other. Single loop learning requires that an organization can at least measure attributes of a good product (stage 4). However, single loop learning might not work for exploring and building a good product prototype (stage 1). Double loop learning might be useful until an organization can discriminate between contingencies leading to desired attributes (stage 6). Yet double loop learning is not required as soon as a process is completely understood and can be fully automated (stages 7 and 8).

Stages 1, 2 and 3 relate to double loop learning (exploration), while stages 7 and 8 imply single loop learning (exploitation). Startups searching for a new business are located in stages 1-3. Mature companies harvesting an established business might be located in stages 7 or 8. In stages 4, 5, and 6, however, an organization must apply a balance of single loop and double loop learning (or exploration and exploitation, respectively). The organization has learnt sufficient so that it can already engage in single loop learning. At the same time the organization must

still engage in double loop learning to continue learning – about the attributes of successful prototypes as well as about new prototypes. Stage 4 of “measuring attributes” is that stage where the balance of double loop learning and single loop learning, or exploration and exploitation, becomes necessary. Entrepreneurial growth companies are positioned exactly in this middle ground of organizational knowledge.

2.4. Entrepreneurial growth companies

2.4.1. Measuring growth

Measures of growth in entrepreneurship literature. Answers to the question ‘what is growth?’ are diverse. McKelvie & Wiklund (2010, p. 268) find: “Many different measures of growth have been used, including sales levels, profitability, number of employees, and market share. The choice of growth measure represents a different type of growth that may or may not reflect growth in terms of other metrics.” Weinzimmer, Nystrom & Freeman (1998, pp. 255-256) conclude that sales and number of employees are the most prevalent measures for growth. Gilbert, McDougall & Audretsch (2006, p. 929) review the entrepreneurship literature and find: “Growth can occur in many different aspects of a firm’s operations, such as its cash flow, net income, customer base, sales, employment, and market share. Although there is no single overriding measure of new venture growth, our review of the literature suggests that the most important measures of new venture growth are in terms of sales, employment, and market share.” As illustrated in table 4, Shepherd & Wiklund (2009, p. 108) review high-quality growth studies in established journals and find that sales and number of employees are the two most frequently used indicators for growth.

Indicators, formulae and time spans	82 studies
Indicator	
Sales	61
Employees	13
Profit	9
Equity / assets	6
Other	15
Formula	
Relative	37
Absolute	32
Other	6
Not reported	7
Time span	
1 year	14
2 years	11
3 years	5
4 years	5
5 years	13
Other	19
Not reported	8

Tab. 4: *Measuring growth (Shepherd & Wiklund, 2009, p. 108)*

Measures of growth in management accounting and control. Research in management accounting and control mostly agrees on revenue and headcount as growth indicators. Cardinal, Sitkin & Long (2004, p. 422) use sales and net income margin as performance indicators. Dávila & Foster (2005, p. 1048) apply several indicators: “To examine the potential effect of management accounting system adoption on the performance of the company we collected information on number of employees, sales, operating income and valuation.” Sandino (2007, pp. 268, 285) accepts the average annual growth in sales and number of stores as growth indicators in her study. Dávila, Foster, & Li (2009, p. 328) use absolute number of employees as indicator for organizational performance. Dávila, Foster & Jia (2010, p. 83) state that “given our sample of companies, headcount is the most widely available and meaningful variable to assess performance”. Overall, researchers from the entrepreneurship literature and the management accounting and control literature show variation in measuring growth, but mostly agree on revenue and number of employees as the most appropriate indicators.

2.4.2. Life cycle theory

Definition and central assumptions. Life cycle theory supports this study in understanding its research object more precise. Life cycle theory assumes that firms evolve through distinct stages over time. Greiner (1972, p. 4) states that life cycle theory identifies “[...] a series of developmental phases through which companies tend to pass as they grow”. Miller & Friesen (1984, p. 1163) outline the five phases of birth, growth, maturity, revival and decline. These phases or stages can be distinct by factors such as size, age, company objectives, strategic choices, management skills and style, decision-making processes, organizational designs, financial resources, functional specialization, formality of management systems and other factors (Churchill & Lewis, 1983; Greiner, 1972; Kazanjian & Drazin, 1990; Miller & Friesen 1983, 1984).

In adopting a life cycle perspective on the configuration of management control systems, Moores & Yuen (2001, p. 353, italics added) are precise in their definition of the basic assumptions of life cycle theory: “Evidence reveals that internal characteristics of organizations and the external contexts in which they are operated, change across life cycle stages and in fact they define such stages. There are numerous multi-stage life cycle models that use a diverse array of characteristics to describe organizational development phenomena, such as individual cognitive orientation, structure, strategy, leadership style, critical development areas, problems and environmental conditions. Nevertheless, the consensus among these models is that *changes in an organization follow a predictable pattern* across discrete stages of development over time.” The literature has brought forward several life cycle models, including Greiner (1972), Churchill & Lewis (1983), Miller & Friesen (1983, 1984) and Kazanjian & Drazin (1990). Table 5 outlines predictions of life cycle papers on Ferreira & Otley’s (2009) first nine performance management system components.

Ferreira & Otley (2009) PMS components	Greiner (1972) "phase 2 and 3"	Churchill & Lewis (1983) "stages III and IV"	Miller & Friesen (1983, 1984) "growth phase"	Kazanjian & Drazin (1990) "stage 3 growth"
Vision & mission	Work standards	<i>No predictions</i>	<i>No predictions</i>	<i>No predictions</i>
Key success factors	<i>No predictions</i>	<i>No prediction</i>	<i>No predictions</i>	<i>No predictions</i>
Organization structure	Functional structure, increasing decentralization, profit and cost centers, rules and procedures, positions and titles	Functional organization, increasing decentralization, professional managers	Functionally-based structure, middle managers, staff functions, procedures, analytical decision-making	Functional specialization, formalizing decision-making processes, hiring of professional staff
Strategies & plans	Efficiency of operations (phase 2), expansion of market (phase 3)	Growth strategy, strategic planning	Incremental product innovation, rapid sales growth	Balance of profits and growth
Key performance measures	Reports	<i>No predictions</i>	Financial KPIs	<i>No predictions</i>
Target setting	Budgets	Operational budgeting and planning	<i>No predictions</i>	<i>No predictions</i>
Performance evaluation	<i>No predictions</i>	<i>No predictions</i>	<i>No predictions</i>	<i>No predictions</i>
Reward systems	Salary increases, individual bonuses	<i>No predictions</i>	<i>No predictions</i>	<i>No predictions</i>
Info flows, systems & networks	Accounting systems, formalization of communication	Financial, marketing and production systems	Information processing procedures, formal communication	<i>No predictions</i>

Tab. 5: Predictions of life cycle theory for performance management system components

Dickinson's cash flow patterns. The growth stage implies significant changes to an organization's management control system (Dávila, 2005, p. 224; Dávila & Foster, 2005, p. 1057; Moores & Yuen, 2001, p. 356). At the same time the growth stage is difficult to delineate from the stages of startup and maturity. Dickinson (2011) offers a quantitative definition of life cycle stages. Anthony & Ramesh (1992, p. 207), Berger & Udell (1998, p. 623) and Granlund & Taipaleenmäki (2005, pp. 27-30) have brought forward similar arguments. Dickinson's (2011, p. 1969) study "develops a firm life cycle proxy using cash flow patterns". She states that the combinations of cash flows from operating, investing and financing activities represent a firm's operational capabilities, resource allocations and strategic choices and are distinct across the life cycle (Dickinson, 2011, p. 1973).

In the growth stage, operating cash flows are positive as revenue increases and profit margins are optimized, investing cash flows are negative as firms make early large investments in infrastructure to deter entry from competition, and financing cash flows are positive to fund infrastructure and expansion (Dickinson, 2011, p. 1969-1973). The growth stage thus can be defined by the following cash flow pattern: positive cash flows from operations, negative cash flows from investing and positive cash flows from financing (Dickinson, 2011, p. 1972-1974). This definition of the growth stage by cash flow patterns are the foundation of this study's innovative definition of entrepreneurial growth companies.

2.4.3. Defining entrepreneurial growth companies

Definitions of growth companies in the literature. In their 2015 paper, Dávila, Foster & Jia (2015, p. 214) note that “the concept of a new venture has no common definition in the existing entrepreneurship literature”. Indeed, the literature defines ‘new ventures’, growing ventures, ‘growth companies’, ‘rapid growth companies’, ‘growing firms’, ‘startups’ and ‘scaleups’ quite differently.

Moore & Yuen (2001, p. 3) state that “growth firms are those with sales growth greater than 15%, with functionally organized structures, and early formalization of policies.” Dávila (2005, p. 230) outline that “the firms included in the sample are young firms (at most 10 years old when the project started), but with more than 10 employees (to exclude firms too small to have any formal processes).” Granlund & Taipaleenmäki (2005, p. 22) suggest that “new economy firms” target fast growth, operate in the information and communication technology businesses and biotech industry, are R&D and knowledge intensive and are financed by venture capital. Dávila & Foster (2007, p. 911) define their that “the sample selection required the companies to have between 50 and 150 employees at the sampling date, be less than 10 years old, and be independent”.

These definitions hardly help with distinguishing a growth company from a startup or a reviving company. Even more, using size and age as the sole parameters of life cycle stages holds the implicit assumption that companies move monotonically, quasi-linear and almost inevitably through life cycle stages. Dávila, Foster, He & Shimizu (2015, p. 19) find: “High-growth startups are often showcased as having continuous growth paths. [...]. There is much evidence that this continuous growth path is more the exception than the rule even among so-called growth companies.” In addition, companies learn about their business opportunities with different paces. Dickinson (2011, p. 1975) states that “experiential learning causes a divergence between firm life cycle and firm age. Firms of the same age can learn at different rates because of imperfections in their feedback mechanisms. All of the factors mentioned above lead to a misalignment between performance and firm age, manifesting in a nonlinear relation between life cycle and age.”

The necessity of a more precise definition. The studies mentioned above are all qualitative studies. Their definitions might be both advisable and sufficient for this purpose in order to collect samples that are large enough for statistical calculations. However, these definitions are not adequate for theoretical sampling and analytical generalization in case study research (cf. Eisenhardt, 1989a, p. 537; Yin, 2014, pp. 40-45). Grounded in the management accounting and control literature, the life cycle literature as well as the entrepreneurship literature, entrepreneurial growth companies shall be defined using the following eight criteria.

Definition of entrepreneurial growth companies

(1) Growth as key objective: All decision makers of the entrepreneurial growth company – founders, investors, middle managers, key employees – are clearly committed to organizational and business growth (Barringer, Jones & Neubaum, 2005, pp. 671-672; Gilbert, McDougall & Audretsch, 2006, p. 929; Sandelin, 2008, p. 326).

(2) Revenue growth \geq 100% year over year from a revenue base of at least EUR 1mn as a proxy for increasing cash flows from operations (Dickinson, 2011, p. 1973; Shepherd & Wiklund, 2009, p. 108).

(3) Investments in capital and operational expenditure needed for growing the business as a proxy for cash flows from investing activities (Dickinson, 2011, p. 1973).

(4) Provision of venture capital \geq EUR 1mn as a proxy for cash flows from financing activities (Dávila & Foster, 2007, p. 917-918; Dickinson, 2011, p. 1973).

(5) Size \geq 30 employees, as beyond 30 employees the need for formalized performance management systems increases strongly (cf. Dávila, 2005, pp. 234, 243; also see elaborations on one-to-one interactions and span of control in chapter 6.2).

(6) Age \leq 5 years to ensure the growth company is ‘entrepreneurial’ (this criterion is more strict than Dávila & Foster, 2007, pp. 913, 916-917, who use ten years).

(7) Governance and ownership structure: Founders hold key management positions as well as equity in the firm, so that the company is independent and incentives are aligned towards the growth objective (Dávila & Foster, 2007, p. 916-917).

(8) Management experience: Founders and their leadership team have more than 5 years of professional experience, so this study can actually learn from their management approaches (Dávila, 2005, p. 244; Eisenhardt & Schoonhoven, 1990, p. 525).

Comments to the definition. Four comments are necessary to this definition of entrepreneurial growth companies. First, the provision of a significant sum of venture capital is a free market transaction between owners and at least one but usually several venture capital firms. In the course of this market transaction owners and investors agree that the firm is ready to grow, is committed to grow and needs a significant amount of capital to fuel growth. In other words, participants in a free market transaction agree that the organization is an entrepreneurial growth company. The provision of venture capital is the best ex ante and publicly available indication that a company is an entrepreneurial growth company (cf. Dickinson, 2011, p. 1973). The idea of using a free market transaction as well as the resources to finance growth is truly innovative and could facilitate research on growth companies, for instance by allowing more targeted survey research than the ones mentioned above.

Second, the presence of venture capitalists (Dávila & Foster, 2007, p. 917-921) and the experience of the management team (Dávila & Foster, 2005, p. 1040) have been found to be a driver to professionalize the firm. These criteria ensure that this study can learn from top management teams' approaches to performance management. Third, limiting the age to no more than five years at the point of data collection distinguishes entrepreneurial growth firms from 'innovative' growth firms, which are growing due to recent innovations and can be in the maturity stage already, and 'reviving' growth firms, which are growing due to a successful turnaround that follows on a significant decline. Finally, these criteria also include that high performance outcomes can be reasonably assumed, at least at the time of investigation, as entrepreneurial growth companies received significant venture capital, achieve high revenue growth with their company, and successfully attracted employees to build up an organization.

Different terms for the research object. Entrepreneurial growth company is the correctly defined term for the type of organizations investigated. The name 'entrepreneurial growth company' is assumed from Kollmann, Kuckertz & Stöckmann's (2009) paper on "continuous innovation in entrepreneurial growth companies". The term 'venture' is commonly used in the entrepreneurship literature (Gilbert, McDougall & Audretsch, 2006); in this study 'venture' refers to both startups and entrepreneurial growth companies.

2.5. Contingency theory

Definition. Contingency theory is one of the most extensively applied theories in management accounting and control research (Bromwich & Scapens, 2016, p. 4; Ditillo, 2004, p. 407). In a recent paper, Otley (2016, p. 55) concludes: "The work conducted under the banner of contingency theory has been one of the success stories of research in management accounting and control over the past forty years. It has given insights into how different configurations and uses of control systems have resulted in a variety of different consequences."

The general idea of contingency theorizing is that circumstances and situations, i.e. contingent variables, are associated with distinct designs of management control systems. Otley's (1980, p. 413) early definition of contingency theory is widely adopted.

Definition of contingency theory

"The contingency approach to management accounting is based on the premise that there is no universally appropriate accounting system, which applies equally to all organisations in all circumstances. Rather, it is suggested that particular features of an appropriate accounting system will depend upon the specific circumstances in which an organisation finds itself. Thus, a contingency theory must identify specific aspects of an accounting system which are associated with certain defined circumstances and demonstrate an appropriate matching." (Otley, 1980, p. 413)

Contingency framework. Otley (1980) suggests a framework for contingency research. Otley's (1980, p. 421) "minimum necessary contingency framework" has four parts, as illustrated in figure 8. First, contingent variables are factors that cannot really be influenced. Chenhall (2003, p. 127) considers "environment, technology, size, structure, strategy and national culture" as the most relevant contingent variables. Otley (1980) also considers organizational objectives as contingent variables stating that "the one exception is the use of organizational objectives as a contingent variable, because of their special nature as a criterion by which organizational effectiveness will be assessed" (p. 422). Second, the organizational control package includes management control systems as well as the organizational design. Third, intervening variables are not further specified by Otley (1980) himself; papers using a contingency framework refer to intervening variables such as dynamic capabilities (Henri, 2006a, p. 534), strategic alignment and organizational learning (Chenhall, 2005, p. 398), or management attention and organizational learning (Widener, 2007, p. 758). Finally, organizational effectiveness is defined as the dependent variable and is typically measured in relation to organizational objectives.

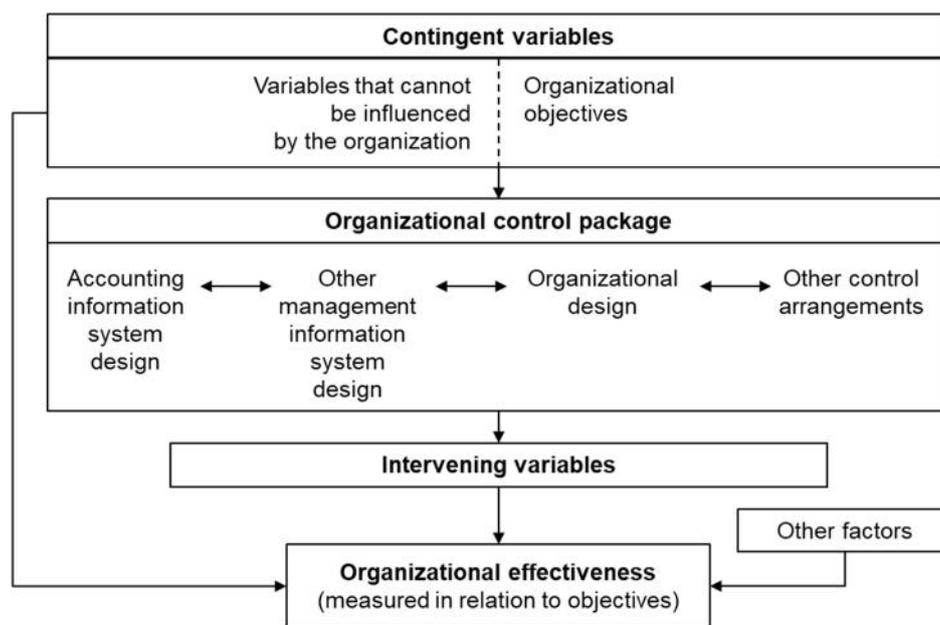


Fig. 8: Otley's minimum necessary contingency framework (Otley, 1980, p. 421)

Fit, mis-fit and performance. The overarching idea is that "fit" between contingent variables, management control systems and intervening variables results in superior performance, whereas "mis-fit" results in inferior performance (Burkert, Dávila, Mehta & Oyon, 2014, p. 8). Fit, or mis-fit, respectively, can relate to making the right choices about which management control system to adopt (cf. Dávila & Foster, 2005, 2007), and to deciding for the right performance management system design and use given the most dominant contingent variables (cf. Moores & Yuen, 2001). This research assumes a mediation type of contingency fit, in contrast to a moderation type of fit (Gerdin & Greve, 2004, pp. 309-310).

2.6. Theoretical model

2.6.1. The growth objective as contingent variable

Growth as contingent variable. Classical contingent variables for management control systems design and use include external environment, technology, structure, size, strategy and national culture (Chenhall, 2003, p. 128). As outlined above, Otley (1980, p. 422) also includes organizational objectives as contingent variables. In his frequently cited review on contingency research in management accounting and control, Chenhall (2003, p. 144) assesses: “There has been little work that has investigated how management control systems are best suited to different stages in the growth of the firm. [...]. Questions arise concerning the requirements of management control systems at these different stages, particularly the extent to which management control systems can assist in the transition from early growth to more mature stages.” Dávila, Foster & Jia (2015, p. 213) agree: “Another contextual variable is company growth.”

The objective to grow as dominant contingent variable. The relationship between strategy and management control systems has been discussed in depth (Chenhall, 2003, 2005; Langfield-Smith, 1997, 2007). Findings are consistent that management control systems are designed purposefully to implement strategy (Chenhall, 2003, p. 150) and have a significant role in the formulation of strategy (Simons, 1990, 1991, 1994, 1995).

Stakeholders of an entrepreneurial growth company, as per the definition elaborated in chapter 2.4.3, are strongly aligned behind the objective to grow the business (Strauss, Nevries & Weber, 2013, pp. 155, 156, 159, 169). Granlund & Taipaleenmäki (2005, p. 49) find that “all interest groups have great expectations of future growth [...]”. Kolvereid (1992, p. 209) concludes: “If the decision to start a business is a choice made by the founder, it may also be assumed that the decision to grow the business is a choice made by the entrepreneur.” Growth does not just happen. It is founders’ and other stakeholders’ objective to grow the business that starts the growth journey. Along with the literature cited above, it can be argued that the growth objective is the most dominant contingent variable for the design and use of performance management systems in the beginning of the growth stage.

Measures of growth. Revenue and headcount (number of employees) are the key measures of growth, as outlined in chapter 2.4.1. Revenue and headcount are not independent measures, they interact. On the one side, revenue growth requires headcount growth and headcount growth enables revenue growth. On the other side, revenue growth is necessary to finance headcount by cash inflow or to justify venture capital funding (Davidsson & Wiklund, 2006, p. 54). The ultimate objective of a growth strategy – the organizational effectiveness or performance outcome – is growing revenues while maintaining a certain level of profitability. Entrepreneurs aim at maximizing revenue growth while minimizing organizational growth.

2.6.2. Performance management and organizational learning

Organizational learning theory is used in some but not many management accounting and control papers. Examples include Argyris (1977), Batac & Carassus (2009), Chenhall (2005), Henri (2006a), Kloot (1997), Simons (1995) and Widener (2007). Only a few papers investigate the interaction between organizational learning and management control explicitly. Batac & Carassus (2009, p. 102) find that “only Kloot (1997) has investigated this interaction further”.

Kloot (1997). After reviewing several definitions of management control and organizational learning, Kloot (1997, p. 53) proposes a definitional link between the two concepts: “The definitions of management control systems and organizational learning display commonality of purpose: both are concerned with changing or adapting an organization to ensure its fit with its environment.” Kloot (1997, p. 58) states: “Organizations can be designed in such a manner that the opportunities for both adaptive and generative learning are maximized.” As illustrated in table 6, Kloot (1997, p. 47) suggests that management control systems are practices for organizational learning, if their design facilitates Huber’s (1991) organizational learning processes.

Management control characteristics	Organizational learning processes as per Huber (1991)
Strong planning systems	Knowledge acquisition
Strong internal controls: routines, procedures, reports	Knowledge acquisition, information distribution and interpretation, organizational memory
Environmental scanning and reporting: e.g. competitive position, product and service reviews	Knowledge acquisition, organizational memory
Participation in decision-making	Knowledge acquisition, information distribution and interpretation
Financial performance measurement and evaluation: accounting and budgetary control reports, financial ratios	Knowledge acquisition, information distribution and interpretation, organizational memory
Non-financial performance measurement (e.g. Balanced Scorecard)	Knowledge acquisition
Horizontal and bottom-up vertical information flows	Information distribution
Training and development programs	Information distribution and interpretation, organizational memory
Teamwork	Information interpretation
Broad set of values and stakeholders, respect for creativity	Information interpretation

Tab. 6: Management control characteristics and organizational learning processes (Kloot, 1997, p. 56)

Batac & Carassus (2009). Following Kloot’s (1997) lead, Batac & Carassus (2009, p. 103) investigate “which management control systems hinder the distribution and mobilization of knowledge and which, on the other hand, stimulate organizational learning”. They find that accounting, budget, operational, management, legal and political control can stimulate organizational learning, whereas cultural and bureaucratic control can hinder organizational learning (Batac & Carassus, 2009, p. 110 table 4).

Argyris (1977). Argyris (1977) analyzes the problem of implementing strategy using management information systems and notes that “in order to get at the inner contradictions we must view management information systems as part of a more general problem of

organizational learning” (p. 113). And: “The attempts to produce a more effective management information system would not only be of value to the practitioners but they could provide the basis for *resting theories on organizational learning* [...]” (p. 122, italics added).

Simons' (1995). After a series of case study papers (Simons, 1990, 1991, 1994) on the role of management control systems in strategic management, Simons explicitly links his levers of control theory to the concepts of single loop and double loop learning. He concludes (p. 106): “Diagnostic control systems facilitate single loop learning; interactive control systems facilitate double loop learning. The single loop learning keeps a process within desired bounds; double loop learning leads to questions about the very basis upon which strategies have been constructed.” Simons (1995) makes statements on how to design diagnostic controls (pp. 71-85) and interactive controls accordingly (pp. 110-113 and pp. 117-119).

Ferreira & Otley (2009). Ferreira & Otley (2009, p. 264) include organizational learning in their definition of performance management systems. When Ferreira & Otley's (2009, p. 264) definition is ‘shortened’, a direct relationship between performance management and organizational learning surfaces: “We view performance management systems as the evolving formal and informal mechanisms, processes, systems, and networks used by organizations [...] for supporting and facilitating organizational learning and change”. Ferreira & Otley (2009) refer to Simons (1995) and apply the concept of single loop learning and double loop learning in order to elaborate theory on the use of performance management systems.

Quantitative studies. A couple of quantitative studies have investigated the relationship between management control and organizational learning. Chenhall (2005, p. 404) finds evidence for his hypothesis that “a distinctive characteristic of strategic performance measurement systems is their objective of ensuring that the organization can develop a capacity to innovate by encouraging learning. There are arguments to support the view that integrative strategic performance measurement systems can contribute to each of the four elements of learning: information acquisition, interpretation, distribution and organizational memory.” Henri (2006a, pp. 538, 543) theorizes that “the dynamic tension resulting from a balanced use of performance measurement systems in a diagnostic and interactive fashion tends to positively influence the capabilities of market orientation, entrepreneurship, innovativeness and organizational learning”. Widener (2007, pp. 765, 779) assumes that all levers of control facilitate organizational learning and finds support that especially beliefs system and diagnostic control system are positively associated with organizational learning.

Conclusion. There appears to be sufficient theory as well as empirical studies to assume a relationship between performance management and organizational learning. If entrepreneurial growth companies intend to grow, then their main control problem might be organizational learning. Thus, this study suggests that organizational learning might help to explain and predict

performance management system design and use in entrepreneurial growth companies. Therefore, the relationship between performance management design and use and organizational learning is investigated in depth in this study.

2.6.3. Organizational learning and firm growth

Penrose's theory of firm growth. The idea that growth is driven by organizational learning is widely accepted in managerial studies. According to Macpherson & Holt (2007, p. 172) "this link is considered to be a legacy of Penrose's (1959) seminal text 'The Theory of the Growth of the Firm', in which she proposes that growth is dependent on the application of entrepreneurial and managerial knowledge configured as resources". McKelvie & Wiklund (2010, p. 271) agree: "Many of the recently published studies in leading journals specifically examining growth have used Penrose's theory. Her work appears to be the main, or at least most highly used, theory of growth."

In Penrose's (1959, 1960) theory of the growth of the firm, companies organize valuable resources. These resources are configured in a way that the entrepreneurs can perceive and capture the firm's set of productive opportunities (Penrose, 1959, p. 31). The main function of entrepreneurs is to decide how to deploy these resources and what activities to carry out to capture a firm's productive opportunity set. This main function requires two firm-specific competences: the entrepreneurial competence and the managerial competence (Penrose, 1959, pp. 34-35). The entrepreneurial competence is essential for recognizing market opportunities and environmental changes. The managerial competence is required to create stable processes, structures and systems to exploit these opportunities. A company grows due to the interaction between the entrepreneurial competence to learn about a market opportunity, and the managerial competence to learn about the execution on the market opportunity.

Macpherson & Holt's literature review. In their extensive literature review on empirical findings on the relationship between organizational learning and venture growth, Macpherson & Holt (2007, p. 179) summarize: "The entrepreneur's ability to create both suitable organizational systems and activities that support knowledge transfer and encourage learning is an important antecedent for growth." Macpherson & Holt (2007, p. 172) conclude: "Expansion is intimately associated with the processes through which knowledge is acquired and applied. Thus, the possession of knowledge defines the shape and trajectory of a firm's growth, and a lack of managerial knowledge resources, or competences, may undermine a small firm's ability to grow." Macpherson & Holt (2007, p. 183) also highlight the complexity of the topic: "Knowledge and learning support growth in idiosyncratic and complex ways."

Wernerfelt and March. In his seminal paper on the resource-based view of the firm Wernerfelt (1984, p. 178) states that "[...] the optimal growth of the firm involves a balance between exploitation of existing resources and development of new ones". This idea has been picked up

by March (1991) in his seminal paper on exploration and exploitation (see chapter 2.3.3). March (1991, p. 71) finds that “[...] maintaining an appropriate balance between exploration and exploitation is a primary factor in system survival and prosperity”.

Organizational ambidexterity. March’s theory was the starting point for what was later termed “organizational ambidexterity” (Raisch & Birkinshaw, 2008). In their literature review on organizational ambidexterity, Raisch & Birkinshaw (2008, p. 378) find: “Despite the differences between the two learning processes [exploration and exploitation], scholars have long believed that a well-balanced combination of the two types of learning is essential for long-term organizational success.” Raisch & Birkinshaw’s (2008, p. 381) organizational ambidexterity framework links organizational learning directly to firm growth.

Kaplan & Norton’s learning and growth perspective. The management accounting and control literature has elaborated on the link between learning and growth as well. A well-known example is Kaplan & Norton’s (2001) strategy map. Kaplan & Norton’s (2001, p. 77) strategy map assumes cause-and-effect relationships between four essential perspectives of strategy implementation. In fact, Kaplan & Norton (2001, p. 77) explicitly link the vision of the company with organizational learning when they formulate the key question of the learning and growth perspective: “To achieve my vision, how must my organization learn and improve?” Kaplan & Norton elaborate (2001, p. 95): “We placed the [learning and growth] perspective at the bottom because it is the foundation for everything else above it. Or, to use another metaphor, learning and growth objectives are like the roots of a tree. They are the source of support, nourishment, and growth for the beautiful foliage and blossoms (financial breakthroughs) that appear at higher elevations of the scorecard. The learning and growth initiatives are the ultimate drivers of strategic outcomes.”

Conclusion. Grounded in these literatures, this study assumes that organizational learning is positively associated with growth. Organizational learning processes (Huber, 1991) and the two organizational learning modes (Argyris & Schön, 1978; March, 1991) appear to play significant roles in driving growth. The relationship between organizational learning and growth is assumed based on these established literatures, yet the relationship is not examined in this study.

2.6.4. The growth stage contingency model

Similar contingency models. The theoretical model of this study shall be termed the ‘growth stage contingency model’. In determining the growth stage contingency model, this study can refer to several models from previous studies. In Chenhall’s (2005, p. 398, figure 1) model, strategic performance measurement systems affect organizational learning processes, which in turn impact performance outcomes. Gibson & Birkinshaw (2004, p. 210, figure 1) assume that a balanced approach to performance management results in a higher level of ambidexterity, which leads to superior performance. In Widener’s (2007, p. 758, figure 1) model, strategic

uncertainties determine the levers of control, which impact organizational performance through management attention and organizational learning. The growth stage contingency model proposes a structure similar to the models outlined above and reflects Otley's (1980, p. 421) minimum necessary contingency framework.

The growth stage contingency model. The growth stage contingency model is illustrated in figure 9. Chapter 2.6.1 argues that the growth objective is the dominant contingent variable that influences the design and use of performance management systems. Chapter 2.6.2 provides studies that elaborate on the relationship between performance management system and organizational learning. Chapter 2.6.3 summarizes studies on the positive relationship between organizational learning and growth. This study, therefore, proposes the following growth stage contingency model: The growth objective influences performance management system design and use, which in turn impacts growth through organizational learning. This theoretical model guides the efforts to answer this study's research question and to examine its theoretical proposition.

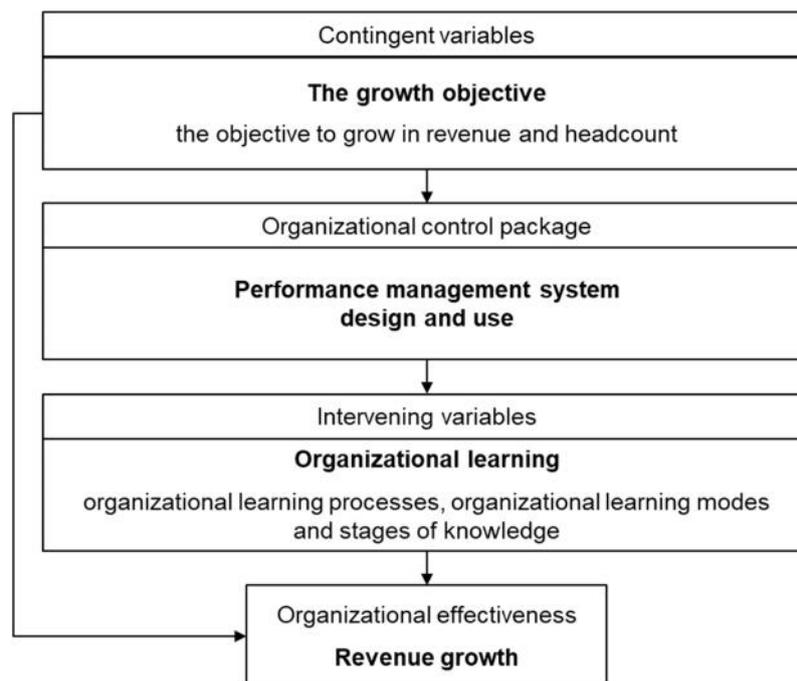


Fig. 9: *The growth stage contingency model (adapted from Otley, 1980, p. 421)*

The conclusion drawn by Von Krogh & Cusumano (2001, p. 54) on learning and growth has had much influence on this study: "We concluded that companies must combine strategies for growth with explicit strategies for learning." Growth is driven by learning. This insight is central, because it has managerial implications. Organizational learning can be managed. Organizational learning processes and organizational learning modes can be organized by the purposeful design and use of the performance management system.

2.7. Literature review

2.7.1. Growth factors in the entrepreneurship literature

State of the literature. To investigate how entrepreneurial growth companies design and use their performance management system, it is instructive to understand what factors influence that growth. Some researchers describe the literature as fragmented and inconclusive (e.g. Shepherd & Wiklund, 2009, p. 105). Other researcher find that “the literature is rather rich and mature” (Barringer, Jones & Neubaum, 2005, p. 666).

To review the literature and understand what is known about venture growth, this study examines 47 empirical studies from the entrepreneurship literature and related disciplines as well as the management accounting and control literature. The six categories of growth factors are adapted from Gilbert, McDougall, Audretsch (2006). The studies selected are all quantitative studies. Most studies use sales growth as growth indicator. This literature review highlights 23 factors that impact venture growth. Table 7 provides an overview of findings.

In their frequently quoted literature review on venture growth, Gilbert, McDougall & Audretsch (2006, p. 937) summarize: “The extant models presented in our review commonly reflect that the entrepreneur must choose growth and that growth will occur most readily when the entrepreneur possesses the resources that enable growth, has a strategy that fosters growth, operates in an industry conducive for growth, and develops structures and systems that accommodate growth.” Three comments shall be added to these growth factors.

Competition. Reading through this list of growth factors, one might miss competition. Contrary to expectations, competition seems not to play a significant role. For instance, Eisenhardt & Schoonhoven (1990, p. 508) could not confirm their hypothesis that lower competition is associated with higher growth. Dávila, Foster, He & Shimizu (2015, pp. 24-27) theorize that competition is a reason for revenue and job destruction rather than creation. Competition can be considered as a reason why ventures *do not* grow, rather than why they *do* grow.

Strategy. Strategy as a growth driver is more complex than table 7 suggests. A positive relationship or fit between strategy and venture growth is contingent on other variables. For example, Chandler & Hanks (1994b, pp. 331-332) report that ventures with a quality differentiation strategy achieved better growth performance in sales, cash flow and market share only when their had resources such as financial capital and skilled employees that supported this differentiation strategy. Sandberg & Hofer (1987, pp. 5-7) find that differentiation strategies are more effective if the venture is an early entrant to an emerging market, while for late entrants a focus strategy appears to be more effective. Sandino (2008, pp. 286-288) concludes that fit between initial management control systems and (low cost vs. differentiation) strategy results in superior business performance.

Growth factors	Studies
Industry context	
The venture's founding market is in the growth stage	Park, Chen & Gallagher (2002); Chandler & Hanks (1994b); Eisenhardt & Schoonhoven (1990)
Access to resources	
The venture has access to sufficient financial resources	Song, Podoynitsyna, van der Bij, Halman (2008); Lee, Lee & Pennings (2001); Cooper, Gimeno-Gascon & Woo (1994)
The venture is funded by venture capital	Bertoni, Colombo & Grilli (2011); Colombo & Grilli (2010); Dávila, Foster & Gupta (2003); Lee, Lee & Pennings (2001)
The venture has access to qualified human resources	Barringer, Jones & Neubaum (2005); Chandler & Hanks (1994a); Cooper, Gimeno-Gascon & Woo (1994)
The venture has access to outsiders' competencies	Christman, McMullan & Hall (2005); Bamford, Dean & Douglas (2004); Dollinger (1985)
The venture leverages the right partnerships	Read, Song, Smit (2009); Barringer, Jones & Neubaum (2005); Lee, Lee & Pennings (2001)
The venture is part of innovation cluster (e.g. Silicon Valley)	Folta, Cooper & Baik (2006); Deeds, DeCarolis & Coombs (1999)
Entrepreneur characteristics	
Entrepreneurs have prior industry experience	Song, Podoynitsyna, van der Bij, Halman (2008); Baum, Locke & Smith (2001); Siegel, Siegel & MacMillan (1993); Feeser & Willard (1990)
Entrepreneurs have higher education	Gimmon & Levie (2010); Barringer, Jones & Neubaum (2005); Watson, Steward & BarNir (2003); Cooper, Gimeno-Gascon & Woo (1994)
Entrepreneurs have previous startup experience	Barringer, Jones & Neubaum (2005); Baum, Locke & Smith (2001); Wasilczuk (2000); Cooper, Gimeno-Gascon & Woo (1994)
Entrepreneurs have a broad social & professional network	Barringer, Jones & Neubaum (2005)
Management team characteristics	
The venture is founded by a team	Eisenhardt (2013); Song, Podoynitsyna, van der Bij, Halman (2008); Amason, Shrader & Tompson (2006); Barringer, Jones & Neubaum (2005); Colombo & Grilli (2005); Barkham (1994); Eisenhardt & Schoonhoven (1990); Fesser & Willard (1990)
The management team shows diversity	Eisenhardt (2013); Amason, Shrader & Tompson (2006); Colombo & Grilli (2005); Eisenhardt & Schoonhoven (1990)
The management team has joint prior work experience	Eisenhardt & Schoonhoven (1990)
The management team show more cohesion	Ensley, Pearson & Amason (2002); cf. Eisenhardt & Schoonhoven (1990) for team tenure
Strategy	
The venture follows a growth-oriented vision and aspiration	Baum, Locke & Smith (2001); Watson, Steward & BarNir (2003); Barkham (1994); Kolvereid (1992)
The venture has a clear strategic focus	Barringer, Jones & Neubaum (2005); Baum, Locke & Smith (2001); Siegel, Siegel & MacMillan (1993); Fesser & Willard (1990)
The venture follows a product innovation strategy	Li, Atuahene-gima (2001); Roper (1997);
The venture's growth strategy fits to its financial resources	Lee, Lee & Pennings (2001); Chandler & Hanks (1994b)
The venture internationalizes early on	Zahra, Ireland & Hitt (2000); McDougall & Oviatt (1996); Fesser & Willard (1990); literature review on international entrepreneurship in Keupp & Gassmann (2009)
Organizational Structures and Systems	
The venture adopts formal management systems early	Dávila, Foster & Jia (2015); Dávila, Foster & Jia (2010); Strehle, Katzy & Dávila (2010); Dávila & Foster (2005, 2007); Granlund & Taipaleenmäki (2005); Dávila (2005)
Management control systems fit to its growth strategy	Dávila, Foster & Jia (2015); Sandino (2008)
The management team introduces functional specialization	Moore & Yuen (2001); Kazanjian & Drazin (1990); Miller & Friesen (1983, 1984)

Tab. 7: Literature review on growth factors in the entrepreneurship literature

Structures and systems. Structures and systems provide one of six of the categories of growth factors outlined in table 7. Therefore, management control systems play a crucial role in mediating between a venture's competitive strategy and its dynamic business environment (Sandino, 2008). In the context of high-tech ventures, Burgelman & Siegel (2008, p. 147) emphasize the crucial question of "how well the company's internal selection environment (its administrative and cultural structures, systems, and processes) works to dynamically align strategic action with stated strategy as well as distinctive competence with the basis of competition in the face of changes in the external selection environment". In a series of papers, Dávila & Foster (2005, 2007) and their colleagues have established the relevance of the adoption of management control systems for new venture growth.

Lack of explanation. These 23 empirical growth factors are insightful when it comes to *describing* venture growth and *predicting* growth potential. Yet it can be questioned whether these growth factors are sufficient to *explain* new venture growth. This study argues that most of these growth factors can be explained by a theory of performance management and organizational learning. Organizational learning processes help entrepreneurial growth companies to understand, manage and leverage these growth factors. In her theory, Penrose (1960, p. 1) promotes a similar argument: "Growth is governed by a creative and dynamic interaction between a firm's productive resources and its market opportunities." Penrose (1959, p. 7) concludes: "It is at the organization as a whole that we must look to discover the reasons for its growth."

2.7.2. Management control systems in the growth stage

State of literature. The main focus of management accounting and control research has long been and still is on established, mature, rather large companies (Moore & Yuen, 2001, p. 351). With respect to startup companies, the idea persisted for a long time that management control systems are too bureaucratic to allow for creativity, stifle innovation and harm the entrepreneurial spirit – hence entrepreneurs should relax managerial control (Freeman & Engel, 2007, pp. 95-96). It might be for this reason that research interest in management control in the growth stage is emerging only recently, roughly since the 2000s (Dávila, 2005, p. 225). This chapter provides a literature review of 15 relevant studies on management control systems in the growth stage. The literature can be categorized into adoption and evolution of management control in the growth stage.

Adoption. The adoption of management control systems refers to questions of what practices are adopted, when practices are adopted, why they are adopted, and what the performance implications are of the adoption of management control systems. Table 8 provides an overview of the literature review on management control systems adoption in the growth stage.

Study	Main findings	Quote
Dávila & Foster (2005): Management accounting systems adoption decisions: evidence and performance implications from early-stage/startup companies	The presence of venture capital, CEO experience and her/his belief about the value of MCS, the hiring of a financial manager, and number of employees are associated with MCS adoption. Faster adoption of operating budgets is associated with faster growing startups.	"Companies that adopt operating budgets sooner grow faster" (p. 1060).
Dávila (2005): An exploratory study on the emergence of MCS - formalizing human resources in small growing firms	The size and age of the organization, replacement of the founder as CEO, and outside investors are drivers for the decision to adopt management control systems.	"The adoption of management control systems is a key element in managing the tension that growth imposes on young growing firms" (p. 223).
Dávila & Foster (2007): Management control systems in early-stage startup companies	The most widely adopted MCS in the growth stage are related to planning purposes. Number of employees, presence of venture capital, international operations, and time to revenue are positively associated with the rate of MCS adoption. CEOs with lower adoption of MCSs are more likely to be replaced.	"[MCS] are needed to provide the management infrastructure that supports growth beyond the informal stage; simultaneously, these systems are needed only if growth exists."
Dávila, Foster & Li (2009): Reasons for management control systems adoption: insights from product development systems choice by early-stage entrepreneurial companies	External reasons/events for MCS adoption include contracting with external parties and legitimizing the company. Internal reasons for MCS adoption include managers' background, code learning, need to focus on the strategy and reaction to problems. Managers' background is associated with the fastest time-to-adoption and with product development performance.	"Managers [...] perceive MCS as management infrastructure required to facilitate growth." (p. 338)
Dávila, Foster & Jia (2010): Building sustainable high-growth startup companies: management systems as an accelerator	Venture capital and professional management facilitate the adoption of MCS. Manager background, need to focus, reaction to managerial chaos, need for codifying learning, externally legitimizing the company, and contracts with external partners are reasons for MCS adoption.	"Management systems are associated with growth, growth and management systems go together" (p. 86)
Dávila, Foster & Jia (2015): The valuation of management control systems in start-up companies: international field-based evidence	Higher intensity of MCS has a positive impact on startup valuation. The valuation implication is more pronounced in highly competitive environments and for rapid-growth ventures. Equity investors value MCS more than debt financiers. Systems that implement strategy are more valued.	"Results [...] suggest that a 10% increase in management control systems adoption is associated with a 3.3% increase in firm value" (p. 209).
Granlund & Taipaleenmäki (2005): Management control and controllership in new economy firms - a life cycle perspective	New economy firms prioritize planning and forecasting over control. Venture capital drives the adoption of MCS. Sample firms showed a low use of MCS overall, presumably due to lack of time and engineering-oriented cultures.	"As all interest groups have great expectations of future growth, we may even talk about a temporary situation where planning and forecasting have a strong prerogative over control." (p. 49)
Sandino (2007): Introducing the first management control systems: evidence from the retail sector	Fit between low cost vs. differentiation strategy and the early adoption of different types of MCS is associated with higher perceived usefulness of MCS and higher venture growth.	"[...] the real question is not whether MCS are needed, but which MCS are best suited to the contingencies of each firm." (p. 268)
Strehle, Katzy & Dávila (2010): Learning capabilities and the growth of technology-based new ventures	The adoption of eight bundles of MCS (strategic planning, financial planning and evaluation, human resource planning and evaluation, product development, marketing and sales, and partnership management) are positively associated to the growth of the venture.	"Group comparison between ventures that adopt MCS faster and ventures that adopt MCS slower shows that MCS adopters grow much stronger [...]" (p. 37).

Tab. 8: Literature review on adoption of management control in the growth stage

Evolution. The evolution of management control systems investigates how practices develop through the life cycle stages of a growing firm. Table 9 provides an overview of the literature review on management control systems evolution.

Study	Main findings	Quote
Moore & Yuen (2001): Management accounting systems and organizational configuration - a life-cycle perspective	The formality of MAS changes over the life cycle of firms. Formality increases from birth to growth and from maturity to revival, but the decreases in management accounting systems formality are more significant when firms transit from growth to maturity and from revival to decline.	"[...] it is growth firms that pay particular attention to increasing the formality of their management accounting systems." (p. 351)
Cardinal, Sitkin & Long (2004): Balancing and rebalancing in the creation and evolution of organizational control	Imbalances between formal and informal controls are a key driver of shifts in control configurations. Imbalances lead to performance crisis, which forces managers to regain balance for further growth. There are five methods to rebalance the control system: subtracting, adding, modifying, substituting, or reactivating of controls.	"While we have suggested that some form of the balance-imbalance-rebalance pattern exists in all organizations, it is likely to be more pronounced in emerging organizations or organizations undergoing substantial and rapid growth." (p. 428)
Collier (2005): Entrepreneurial control and the construction of a relevant accounting	MCS packages are constructed and synchronized by the entrepreneur. High-growth strategy can be implemented using a combination of performance indicators (the formal spreadsheet model), informal social controls and high rewards. The possibility to exercise social control is dependent on the founder's abilities.	"The growth-oriented strategy, formal spreadsheet model and the informal social control together comprise a system of control that is particular to [the case study]." (p. 334)
Sandelin (2008): Operation of management control practices as a package - a case study on control system variety in a growth firm context	The functionality of a control package depends on internal consistency, with internal consistency relying on the reciprocal linkages of design and use between a primary control system and other control elements. The design of management control is driven by functional demands, which, however, can be met by equifinal control configurations. Informal control practices can significantly affect formal controls.	"The evidence suggests that appropriate management control packages are not mere functions of a single control element, such as culture or results, but are based on combinations of control elements that can support a particular control orientation or management philosophy, at least in a growth firm context." (p. 338)
Strauss, Nevries & Weber (2013): The development of MCS packages - balancing constituents' demands	MCS are introduced by growing ventures in three phases. The relative importance of informal controls decreases in favor of formal controls during early years of a startup. MCS can be full in use, decoupled from each other, or even empty shells, i.e. not in use at all.	"In situations where firms face dramatic changes in its constituents and availability of resources, the question of balancing MCS becomes critical because an MCS package that fails to align the different stakeholder interests, could threaten the firm's existence in the long run." (p. 159)
Su, Baird & Schoch (2015): The moderating effect of organizational life cycle stages on the association between the interactive and diagnostic approaches to using controls with organizational performance	Interactive use of MCS is positively (negatively) associated with organizational performance in the growth (revival) stage. The use of the diagnostic approach is positively (negatively) associated with organizational performance in the revival (maturity) stage.	"In order to enhance performance, managers in growth stage organisations should consider placing greater emphasis on frequent discussions, face-to-face meetings and continual information exchange amongst the different hierarchical levels, thereby facilitating product innovation and generating new ideas and initiatives." (p. 50)

Tab. 9: Literature review on the evolution of management control systems

Further notable management control studies in the context of growing ventures include: Cassar (2009), Dávila, Foster, He & Shimizu (2015), Dávila, Foster & Oyon (2009), Hellmann & Puri (2002), Lukka & Granlund (2003), Perren & Grant (2000), Reid & Smith (2000), Wasserman (2003).

Theories in use. Management accounting and control studies refer to a variety of theoretical explanations on the adoption and evolution of management control systems in the growth stage. Table 10 provides an overview of theories in use. Chapter 5.1 reviews these theories as rival theoretical explanations to this study's theoretical proposition.

Theoretical explanations	Studies for adoption of MCS	Studies for evolution of MCS
Agency theory	Dávila & Foster (2007, p. 909); Dávila & Foster (2005, p. 1043)	
Contingency theory	Sandino (2007, pp. 268-269); Dávila (2005, p. 226)	Sandelin (2008, p. 325)
Information processing and decision-making	Dávila, Foster & Jia (2015, pp. 207-209); Dávila, Foster & Jia (2010, p. 82); Dávila & Foster (2005, p. 1043)	
Life cycle theory	Dávila, Foster & Jia (2015, p. 208); Dávila, Foster & Jia (2010, p. 80); Dávila, Foster & Li (2009, p. 324); Sandino (2007, p. 268); Dávila (2005, p. 226); Granlund & Taipaleenmäki (2005, pp. 22-23)	Su, Baird & Schoch (2015, pp. 43-44); Moores & Yuen (2001, pp. 353-355)
Organizational learning	Strehle, Katzy & Dávila (2010, pp. 38-42); Dávila, Foster & Li (2009, p. 327)	Su, Baird & Schoch (2015, pp. 41-43); Collier (2005, p. 322); Cardinal, Sitkin & Long's (2004, pp. 412-413)

Tab. 10: Theoretical explanations for management control systems in the growth stage

What is known. These studies allow for an assessment of what is known about management control systems in the growth stage. First, management control systems play an essential role in the survival and growth of ventures. Second, ventures that adopt management control systems earlier grow faster and achieve a higher firm valuation. Third, fit between growth strategy and management control systems adoption results in higher growth. Fourth, the experience of the CEO, internationalization, the hiring of a financial manager, the age and organizational size and venture capital investors are associated with the adoption of management control systems. Fifth, replacing the CEO leads to earlier adoption, while founder CEOs, who use management controls more intensively, are replaced less frequently. Sixth, reasons and events for management control systems adoption include contracting with external parties, legitimizing the company to stakeholders, managers' background, the coding of learning, the need to focus on the growth strategy as well as reaction to problems and internal chaos. Seventh, growing companies often prefer cultural control and planning over other forms of control. Finally, growing ventures pay particular attention to increasing the formality of their systems. They move from informal to formal controls; imbalances or inconsistencies between informal and formal controls, or in-between formal components of the overall management control package, can create performance crises.

What is not known. These studies consistently tell us that growing ventures should adopt performance management practices. For example, studies make clear that entrepreneurs should *adopt* operational targets (Granlund & Taipaleenmäki 2005, p. 21; Dávila & Foster, 2007, p. 907). However, it is not known *how they design and use* operational target setting. Are targets easy, challenging or nearly impossible to achieve? What is the design of the operational target setting process? How often do they evaluate performance and set new targets? Are targets imposed on subordinates, are employees consulted or do employees even decide themselves on their operational targets?

The entrepreneurship literature makes clear that performance management systems are factors for growth. The management accounting and control literature makes clear that entrepreneurs should adopt and evolve performance management practices generally. The consequential next step is to ask: How do entrepreneurial growth companies design and use their performance management systems specifically? How do practices change? How do founders achieve strength and coherence between performance management practices? Are there consistent patterns and can these patterns be theoretically explained?

2.8. Research question and theoretical proposition

Research question. Otley (2008, p. 236) reflects on how to study performance management systems and states: “My central research question can be formulated as follows: How do organizations configure their control arrangements to enable them to adapt to, and survive in, a rapidly changing environment?” Otley’s “central research question” is the role model for this study’s research question.

The relevance and content of the research question are elaborated in previous chapters. Chapter 1 outlines the importance of entrepreneurial growth companies to economy and society. Chapters 2.1 and 2.2 explain how management accounting and control evolves to performance management, how Ferreira & Otley’s (2009) 12-questions performance management systems framework can be used as a research instrument and why performance management systems should be studied holistically. Ferreira & Otley’s (2009) twelve questions are considered extensions to this study’s research question. Chapter 2.4 precisely defines entrepreneurial growth companies as this study’s research object. Chapter 2.7.1 reviews the entrepreneurship literature and identifies the crucial role of performance management systems the growth of new ventures. Chapter 2.7.2 reviews the literature on management accounting and control in the growth stage and identifies an interesting gap. The importance of management control systems adoption is known and there is indication about how management control evolves through life cycle stages. Yet there is not much knowledge about the design and use of performance management systems in order to achieve growth. These theoretical foundations lead to this study’s research question.

Research question

How do entrepreneurial growth companies design and use their performance management systems?

Theoretical proposition. There is sufficient theory to develop a theoretical proposition to this research question. Chapter 2.3 outlines organizational learning as well as three concepts to operationalize organizational learning. Chapter 2.5 reviews contingency theory and introduces Otley's (1980, p. 421) minimum necessary contingency framework. Grounded in contingency theory, chapter 2.6 elaborates this study's theoretical model. Chapter 2.6.1 elaborates on the link between the growth objective as a contingent variable and the design and use of performance management systems. Chapter 2.6.2 establishes the link between performance management systems and organizational learning. Chapter 2.6.3 explains the relationship between organizational learning and firm growth. Chapter 2.6.4 summarizes these theoretical developments into the growth stage contingency model. These theoretical foundations lead to the following theoretical proposition.

Theoretical proposition

Entrepreneurial growth companies design and use their performance management systems to facilitate organizational learning processes and to balance single loop and double loop learning.

The theoretical purpose of this study is theory elaboration (see chapter 3.1). For this reason, the research question can be considered as exploratory. Exploratory research does not necessarily require a theoretical proposition (Yin, 2014, p. 30). However, a proposition, which is well-grounded in theory, offers clear methodological advantages (Yin, 2014, pp. 37-45). First, case studies generalize to theories. Hence, the more developed the theoretical foundation, which is manifested in a theoretical proposition, the better the possibility of analytical generalization of results to other cases (Yin, 2014, p. 20). Second, the prior development of theoretical propositions can guide, carefully and within boundaries, the collection and analysis of empirical data (Yin, 2014, pp. 30). Third, theoretical development before data collection is the key difference between case study research as a scientific method and related methods such as ethnography and grounded theory (Yin, 2014, p.37). Forth, starting with a theoretical proposition is a requirement for using pattern matching as an analytical technique (Yin, 2014, p. 143). Since there is sufficient theoretical foundation and due to these four methodological reasons, this study develops a theoretical proposition.

3. Methodology

3.1. Philosophy of science

The quest for sound methodology. The nature of the research question, the possibility of developing theoretical propositions or hypotheses, the study's theoretical purpose as well as the epistemological perspective determine whether a certain scientific methodology is appropriate and whether a study's conclusions can be considered sound and reliable. The quest for sound methodology starts with the research question and to what extent the research question can be developed out of existing theory and knowledge about the object of study. Yin (2003, p. 9) states: "A literature review is not about giving the answer to a question, but to develop more interesting, insightful and sharper questions about a topic." The research question thus determines whether or not theoretical propositions or even hypotheses can be constructed.

Three theoretical purposes. The possibility of stating propositions or hypotheses determines the theoretical purpose of the study, as outlined in figure 10 (HSG PhD seminar by Schmid, March 2017; Bluhm, Harman, Lee & Mitchell, 2010, p. 5; Lee, Mitchell & Sablynski, 1999, p. 165). No research question or a research question without theoretical propositions suggest a theory building purpose; this approach is often based in grounded theory (Glaser & Strauss, 1967). The possibility of stating a research question including theoretical propositions suggests a theory elaboration purpose. The development of deductive hypotheses suggests a theory testing purpose. Theory building is typically achieved using qualitative research methods. Theory elaboration can be done by both qualitative and quantitative approaches. Testing of theories and their hypotheses is the domain of quantitative research (Eisenhardt & Graebner, 2007, p. 25).

Theory building (induction)	<ul style="list-style-type: none"> ▪ Develop theory in new, interesting research areas ▪ Start with sensitizing concepts (Glaser & Strauss, 1967), or start with a-priori constructs (Eisenhardt, 1989) ▪ Formulate new, testable research propositions ▪ Qualitative research designs
Theory elaboration	<ul style="list-style-type: none"> ▪ Elaborate, redirect or integrate existing theory ▪ Start with a conceptual framework or ideas in which formal hypothesis are not necessarily included ▪ Elaborate on emergent theory or solve theoretical conflict ▪ Qualitative, quantitative or mixed methods
Theory testing (deduction)	<ul style="list-style-type: none"> ▪ Test existing, well-formulated theory ▪ Start with clear theoretical assumptions and hypothesis that inform study design ▪ Support or reject hypotheses ▪ Typically quantitative, survey-based research

Fig. 10: Three theoretical purposes of research

This study develops a theoretical proposition to the research question: Entrepreneurial growth companies design their performance management systems to facilitate organizational learning processes and to balance single loop learning and double loop learning. Yet given existing literature, this study is not able to suggest a set of quantitatively testable hypotheses. Therefore, the theoretical purpose of this study is to elaborate and integrate existing theory (cf. Bluhm, Harman, Lee & Mitchell, 2010, p. 5).

Post-positivistic perspective. The epistemological perspective also determines the appropriate use of methodology. Gephart (2004, pp. 455-456) holds that “researchers need to use methodologies that are consistent with the assumptions and aims of the theoretical view being expressed”. Some combinations exclude each other, while other combinations are difficult to defend (cf. Gephart, 2004, p. 456). This study adopts a post-positivistic perspective.

Post-positivism

“Positivism and postpositivism adopt the stance of realism and rely on the assumption of an objective world external to the mind that is mirrored by scientific data and theories. Positivism and postpositivism are efforts to uncover truth or true reality. Post-positivism, the more recent view, differs from positivism in holding that reality can be known only probabilistically, and hence verification is not possible. Falsification, not verification, of hypotheses becomes the basic task of research. Well-developed post-positivist qualitative methods can uncover facts and compare facts to hypotheses or prior findings in an attempt to falsify prior hypotheses or to contradict previous knowledge.” (Gephart, 2004, p. 456)

The state of literature on the design and use of performance management systems in entrepreneurial growth companies, this study’s purpose of theory elaboration and the epistemological perspective of post-positivism imply that this research uses a qualitative research approach. More precisely, this study applies action research in the more general context of case study research. Although there are voices that point to a clash between a positivistic understanding of science and action research, arguments have been brought forward in favor of the reconciliation of positivistic perspectives and the action research approach (for this discussion see Elden & Chisholm, 1993; Kock, McQueen & Scott, 1997).

3.2. Qualitative research in management accounting and control

Case study research. There is a large variety of qualitative methods (e.g. Glaser & Strauss, 1967; Eisenhardt, 1989a; Miles & Huberman, 1984; Silverman, 2000; Yin, 2014). Real-life case studies are a widely used qualitative method. Case studies are rich descriptions of a contemporary phenomenon that can be informative to comparable situations (Eisenhardt & Graebner, 2007, p. 25). A phenomenon can be studied using a single case or multiple cases (Yin, 2014, pp. 49-63). Case study research can start with no theory or research question at all

(Glaser & Strauss, 1967), with a research question only (Eisenhardt, 1989a, p. 536), or with a research question and a theoretical proposition (Yin, 2014, p. 30). Case studies can be explanatory, exploratory or pure descriptions, and usually use research questions of the type “how” and why” (Yin, 2014, pp. 9, 15).

The case study method is often described as “a linear but iterative process” (Yin, 2014, p. 1). The case study method follows distinct steps that the researcher passes through several times to generate insights. The literature typically outlines the following steps: definition of research question and if possible theoretical proposition, designing a research strategy along with instruments, protocols and selecting cases, collecting empirical evidence in the field, analyzing evidence within each case study and across case studies, unfolding existing literatures, and reporting analyses, results and insights for the critique by an informed audience (Eisenhardt, 1989a, p. 533; Yin, 2014, pp. 1-5).

In contrast to deductive quantitative methods, theory from case studies is developed and evolved inductively. Ideally, insights are grounded in a variety of perspectives on the topic, i.e. triangulation of data, investigators and theories (Eisenhardt, 1989a, p. 533; Hopper & Hoque, 2006). Insights need to closely fit the data, as “[...] close adherence to the data keeps researchers ‘honest’. The data provide the discipline that mathematics does in formal analytic modeling” (Eisenhardt & Graebner, 2007, p. 25). The insights emerging are developed “by recognizing patterns of relationships among constructs within and across cases and their underlying logical arguments” (Eisenhardt & Graebner, 2007, p. 25). And: “frame breaking insights, the tests of good theory (e.g. parsimony, logical coherence), and convincing grounding in the evidence are the key criteria for evaluating this type of research” (Eisenhardt, 1989a, p. 532).

Qualitative research in management accounting and control. In management accounting and control research, qualitative approaches are a popular research method according to a recent review conducted by Bromwich & Scapens (2016). Hopper & Bui (2016, p. 10) find an “increasing use of qualitative methods over a wide range of topics”. In fact, the majority of papers published in the *Management Accounting Research* between 2010 and 2014 were grounded in qualitative methods (Hopper & Bui, 2016, p. 14).

Langfield-Smith (1997, p. 221) highlights the advantage that “case studies can allow a wide range of controls to be studied, including those that are difficult to measure with surveys”. Chenhall (2003, pp. 159-160) adds that “the generation of propositions concerning novel relationships, processes and their contextual setting are often best identified and elaborated by using case study methods”. And Sandelin (2008, p. 326) concludes in the context of his research on integrated control packages in a fast growing technology firm that “a case study appears to be the most promising mode of enquiry because it makes possible a comprehensive approach to the study of controls in use”.

Case study research on holistic performance management systems. Reviewing this literature, there appears to be a link between investigating holistic performance management systems and case study research as the preferred method. Simons presented a series of comprehensive case studies (Simons, 1990, 1991, 1994) that enabled him to develop his integrated levers of control framework (Simons, 1995; Langfield-Smith, 1997, p. 223). Kaplan & Norton's (1996) balanced scorecard is the result of multiple case studies and an innovation action research approach (Kaplan, 1998). The performance management frameworks proposed by Otley (1999) and Ferreira & Otley (2005, 2009) are developed inductively through a series of case studies. So far, their frameworks are applied in case studies only (e.g. Collier, 2005; Ferreira, 2002; Stringer, 2007; Tuomela, 2005; Yap & Ferreira, 2010). Ferreira & Otley (2009, p. 276) themselves write that case study research is most suitable to assess and advance their framework.

Qualitative research as preferred research strategy. This study investigates a contemporary phenomenon – entrepreneurial growth companies and their performance management systems (Yin, 2014, p. 16). This contemporary phenomenon includes many variables whose relationships are not yet clear (Yin, 2014, p. 16). In fact, 54 performance management themes and practices are researched as per Ferreira & Otley's (2009) 12-questions framework (chapter 4.1). Access to investigating entrepreneurial growth companies turned out to be challenging; action research provided access to case studies (chapter 3.3.2). The literature and theories on both the holistic design and use of performance management systems and the growth of such organizations are emerging only recently (chapters 2.1, 2.2, 2.7). This study's ambitions relate to theory elaboration (chapter 3.1) as well as to generating sound insights for managerial practice (chapter 6). For these reasons, action research in the context of the case study approach is the preferred research strategy.

3.3. Research strategy

3.3.1. Managerialist studies and action research

Relevance of managerialist studies. In their editorial on the special issue on the 25th anniversary of the Management Accounting Research, Bromwich & Scapens (2016) provide an overview of current topics in management accounting and control research. Identifying the “practice-research gap” as one of the most pressing issues (p. 1; see also chapter 2.1.2), they find that “management accounting research tends to follow (rather than lead) practice” (p. 6), and conclude that “case studies and field-based research, including interventionist research, could help to provide this practical knowledge” (p. 8).

In the same special issue, Malmi (2016) undertakes an extensive literature review on managerialist studies in leading management accounting and control journals. He defines managerialist studies as “studies in which at least one of the aims is to directly support or help,

in one way or another, organizational decision-making and control” (Malmi, 2016, p. 31). The common attribute is the objective to produce managerially-relevant insights while investigating the phenomenon (Malmi, 2016, p. 31).

Types of managerialist studies. Malmi (2016) further classifies managerialist studies into interventionist and non-interventionist approaches (table 11). In interventionist studies the researcher adopts an active role and participates in developing solutions for the organization during the investigation; consulting project and research project are interlinked (pp. 31-32, 37). In non-interventionist studies, the researcher aims at creating insights relevant to and potentially used by managers but has no active role in developing solutions while being part of the organization (pp. 31-34). Malmi (2016) identifies further categories of interventionist and non-interventionist studies and provides definitions and exemplary papers.

Type of study	Description
Interventionist studies	
Action research aiming to theorize based on learnings during the intervention	The researcher participates in the organizational change processes in order to learn and theorize based on experiences.
Action research demonstrating the value of existing accounting concepts	The researcher illustrates or tests the value of some existing practice or method.
Action research developing novel constructs but not showing its use or benefits	The researcher creates new practices or methods, but the use of, or the benefits from, practices and methods are not illustrated.
Action research with field experiments	The researcher helps organizations to develop or implement existing methods or practices to address practical problems and then assess the relative merits of the alternatives.
Constructive approach	The researcher creates a theoretically novel construct and demonstrates its practical applicability, actual use and value.
Non-interventionist studies	
Descriptive studies	Descriptive studies identify practices developed in the field and provide a description of that practice for managers and researchers to consider. The researcher has no active role in developing the practice.
Prescriptive studies	Prescriptive studies provide normative or prescriptive advice to managers without empirical content, empirical proof or building on a coherent theory.
Frameworks/models/methods created by researchers without explicit empirical input	Frameworks/models/methods are developed based on the researcher's own reasoning, creative act, and without empirical evidence to inform the development work. Please note this category conflates chapters 4.1 and 4.2 in Malmi (2016).
Frameworks/models/methods created by researchers relying on existing ones	Frameworks/models/methods use existing frameworks/models/methods and develop an application appropriate to management accounting and control.
Frameworks/models/methods created by researchers based on their empirical research	Frameworks/models/methods are developed based on existing theory and the researcher's own empirical observations.

Tab. 11: Types of interventionist and non-interventionist studies (adapted from Malmi, 2016)

Defining action research. Action research is one of the two interventionist types of managerialist research next to the constructive approach. Action research has a long, successful tradition (see review in Kaplan, 1998, p. 90). Malmi (2016, pp. 37-40) identifies four types of action research. Action research can aim at theorizing based on learnings during the intervention. Action research can aim at demonstrating the value of pre-existing management control concepts. Action research can aim at developing novel constructs (i.e. frameworks,

concepts, models, methods) but not show its use or benefits. And researchers can use an action research approach to conduct field experiments.

Malmi (2016, p. 40) finds that “the majority of action research [...] seems to follow the original idea of Lewin (1946), aiming to contribute to more general theorizing based on learning from interventions”. Eden & Huxham (1996, p. 75) state: “The common theme to which most users of [action research] would subscribe is that the research output results from an involvement with members of an organization over a matter which is of genuine concern to them.” In explaining his concept of innovation action research, Kaplan (1998, p. 90) brings forward a similar idea: “Our form of action research is directed more at creation and learning, than at testing.” Reason & Bradbury (2008, p. 4) define: “Action research is a participatory process concerned with developing practical knowing in the pursuit of worthwhile human purposes. It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities.” This study uses the following definition of action research.

Definition of action research

“Action research refers to other types of interventionist studies in which researchers have participated in the change process, but where the purpose of interaction is not to create a theoretically novel construct.” (Malmi, 2016, p. 32)

“Most action researchers in accounting participate in the organizational change processes in order to learn from that process and to theorize based on those experiences”. (Malmi, 2016, p. 37)

Action research vs. constructive approach. The second type of interventionist studies is the constructive research approach (cf. Kasanen, Lukka & Siitonen, 1993). In order to make methods clear, Malmi (2016) sharply contrasts action research from constructive research. Malmi (2016, p. 32) defines that the “constructive research approach refers to research in which a theoretically novel construct is created, and its practical applicability is demonstrated”. In the constructive research approach, the researcher is obliged to create a novel framework, model or method and demonstrate that management practitioners use it and use it successfully. Malmi (2016, p. 42) notes that “there have not been many studies applying the constructive research approach and none of these have been published during past ten years”.

This study applies an action research approach in line with the definitions provided above. The study is managerialist in nature, as the action projects did support organizational decision-making and control at case studies. The research adopts an action research approach due to the direct participation in the change process of three case studies. The intention was to learn from

that process, to gather data, to theorize based on observations, to answer the research question and to follow the theoretical proposition through empirical evidence.

3.3.2. Evaluating action research

Action research offers several advantages when fitting to the research question and current state of theory. Yet action research also comes with critical aspects to deal with and requires certain skills from the investigator. Action research's advantages need to be leveraged. Disadvantages and critical aspects must be counteracted by dedicated provisions.

Four reasons for action research. There are four main reasons why this study applies an action research approach to answer the research question. First, as Malmi (2016, p. 42) points out, action research is well-suited to study contemporary developments when not much knowledge has been accumulated about a phenomenon. The rapid growth of firms, as we experience it in the digital age, are such a contemporary phenomenon. The literature about this phenomenon is developing only recently (Dávila, 2005, p. 225).

Second, action research allows for access to case studies. This advantage is particularly important with case firms that work under strong performance pressure, whose alternative to growth is typically fighting for survival, whose founders and managers are particularly occupied, and that are thus not necessarily open for other research strategies. Other approaches such as case study interviews or surveys do not generate value for those firms and might thus not be able to capture the most interesting details (Eden & Huxham, 1993, p. 83). This description fits entrepreneurial growth companies. In fact, despite my personal relationships to founders, I myself did not get interviews in the beginning of this research project. Only when I started to offer consulting along with the investigation in an action research approach, case firms opened their doors to me as a researcher.

The third reason is stated well by Allen, Burdon & Dovey (2016, p. 4): "Certain forms of knowledge – or knowing – only manifest in practice (that is, in doing) and accessing such knowledge requires participation in the actions through which such knowledge manifests." The empirical data needed to understand a phenomenon can best be tapped into by being a participant and not an observer only. This is even truer when members of the case firm have incentives to provide accurate information, spend time with the investigator, provide feedback and challenge results (Kaplan, 1998, p. 114; Wouters & Wilderom, 2008, p. 500). Action research allows to acquire exceptionally intimate, detailed, real-time data (Lüscher & Lewis, 2008, p. 222). The research question and the use of the Ferreira & Otley (2009) framework as the extension of the research question require an exceptional amount of formal data as well as informal information and direct observation in order to triangulate findings.

Finally, action research can be considered "as a solution for a dual problem: without it practitioners engage in uninformed action and researchers develop theory without application"

(Labro & Tuomela, 2003, p. 412). Action research already reveals the most pressing problems and evaluates solutions together with organizational participants. Lüscher & Lewis (2008, p. 224) speak of “negotiated reality”. Chapter 6 translates theoretical findings to the research question and theoretical proposition into practical innovations. Action research might be the preferred method to give credibility to these practical innovations.

Three critical aspects of action research. The literature notes critical aspects: “The ‘action research’ label is often used as a way of excusing sloppy research” (Eden & Huxham, 1993, p. 76). First, action research comes with pressure to develop solutions for the case firm. This might increase the personal involvement and decrease the investigative distance of the researcher. The researcher might be selective in looking for empirical evidence with a bias towards expected findings in the context of the project (Wouters & Wilderom, 2008, p. 500). These potential errors and biases should be counteracted by sound theory development before the study, a structured, theory-based data collection protocol (Lüscher & Lewis, 2008, pp. 225-226), as well as by the replication logic (Eisenhardt, 1989a, p. 534).

Second, action research projects not only take a lot of time, but also create significant value for the case firm. For this reason, action projects are typically compensated. As stated in chapter 3.4.2, this study’s action projects were compensated. Kaplan (1998, p. 113) finds that compensation is often necessary for the commitment and involvement of the case firm and its managers. Compensation, however, can also corrupt the investigator (Eden & Huxham, 1993, pp. 75-76). Kasanen, Lukka & Siitonen (1993, p. 246) and Malmi & Granlund (2009, p. 614) introduce the guideline of a constant link to theory in order to delineate scientific investigations from plain consultancy. Kaplan (1998, p. 114) adds the criteria of publishing: “A critical aspect, distinguishing scholars from pure consultants, is their willingness, even their obligation, to continue to publish their ideas.”

Finally, probably the most significant challenge comes from the high demands to the researcher’s competences and skills. The distinguished role of the action researcher is highlighted in all methodological papers on action research (Jönsson & Lukka, 2007, pp. 382-383). A particular challenge is to distinguish the two roles as a consultant and as a researcher. Eden & Huxham (1996, pp. 84-85) summarize: “Action research is also challenging for two further reasons: the uncertainty and lack of control creates anxiety for anyone other than confident and experienced researchers; and doing action in action research demands experience and understanding of methods for consultancy and intervention. This second challenge suggests the need to face up to conceptual issues about the nature of problems in organizations and the concomitant demands for change, the nature of a client-centered activity, the issues involved in building and sustaining a consultant-client relationship, and so the nature of power and politics in the context of intervention. As an aside, the above suggests that action research is likely to be a problematic research methodology for doctoral students.” This study is only possible,

because I as the researcher have been a management consultant and a Finance Director in an entrepreneurial growth company before starting this research project.

3.4. Research process

3.4.1. Developing research question and theoretical proposition

Groupon as 'meta case study'. My research interest started with a general question: How to manage a young, rapidly growing company? This general question was inspired by my previous experience as Regional Finance Director Central Europe at the social commerce platform Groupon. Groupon grew extraordinarily fast and achieved to generate USD 1 billion in gross revenue less than two years after its inception (Steiner, 2010). Shortly after one of the largest initial public offerings of an internet company to the NASDAQ, Groupon faced difficulties. As a finance executive, I was part of the leadership team that had to deal with these difficulties. Although we had *adopted* all relevant performance management practices, I realized that our difficulties originated in the *design and use* of our performance management system.

Groupon could be considered as a 'meta case study' to my scientific research. Burgelman & Siegel (2008, p. 141) write that their "research relies on [their] method of 'interactive field research and executive experience', combining data gathered through academic, in-depth field research about a limited set of companies and supplementing this with additional data obtained through the authors' executive, consulting, and board experience gained over many years". My research approach is similar. During the more than four years as a finance executive at Groupon, I experienced all possible stages of the organizational life cycle. I joined Groupon in its birth phase, served as Head of Controlling EMEA during Groupon's extraordinary growth phase, became Regional Finance Director in its maturity phase, experienced decline after the initial public offering, and was part of a successful turnaround of Central Europe as a region. During this time, I contributed to the design of several versions of our performance management system. Groupon inspires my research. My colleagues and I published about Groupon's approach to performance management and growth strategy (Engelhardt, Gassmann & Möller, 2019). I give lectures about my experiences. My work at Groupon makes me credible as an action researcher.

Research question. The literature reviews in chapter 2.7 reveal that the adoption and evolution of performance management practices are essential factors for venture growth. However, previous studies do not investigate the specific design and use of performance management systems or do so only in an aggregated and abstract manner (e.g. Barringer, Jones & Neubaum, 2005; Cardinal, Sitkin & Long, 2004; Moores & Yuen, 2001). Grounded in this review of available literature and theory, this study formulates a precise research question (chapter 2.8): How do entrepreneurial growth companies design and use their performance management systems?

Eisenhardt (1989a, p. 536) states: “Such definition of a research question within a broad topic [permits] investigators to specify the kind of organization to be approached, and, once there, the kind of data to be gathered.” The “kind of organizations” are entrepreneurial growth companies as defined in chapter 2.4.3. The “kind of data to be gathered” is defined by Ferreira & Otley’s (2009) 12-questions performance management system framework.

The twelve questions of Ferreira & Otley’s (2009) performance management framework are theory-based extensions of this study’s overarching research question. Furthermore, their framework and theoretical developments provide precise construct measures to be studied in each of the three case studies (Eisenhardt, 1989a, p. 533). Eisenhardt (1989a, p. 536) points out: “A priori specification of constructs can also help to shape the initial design of theory building research. [...]. If these constructs prove important as the study progresses, then researchers have a firmer empirical grounding for the emergent theory.” Moreover, Ferreira & Otley’s (2009) framework provides an informative structure to relevant research instruments, i.e. field diary, data collection protocol, case study database and case study report. This consistency particularly strengthens this study’s chain of evidence. Finally, using Ferreira & Otley’s (2009) framework supports the within case analyses, the cross case analysis, the reflection of findings with theory and the reporting of the results (cf. Yin, 2014, p. 36).

Unit of analysis. The formal research question also results in a clear understanding of this study’s specific units of analysis. Yin (2014, p. 31) defines that “the tentative definition of your case or the unit of analysis is related to the way you define your initial research question”. Following Yin (2014, pp. 31, 50, 62-63), this study applies a multiple cases design with embedded units of analysis. AlphaCo, BetaCo and DeltaCo are the three case studies that are combined to the multiple case study design. Ferreira & Otley’s (2009) theoretical development of their performance management systems framework suggests several embedded units of analysis. More precisely, each performance management practice is a unit of analysis within each case as well as across cases. It should be added that this multiple cases design with a large number of embedded units of analysis as well as the necessity to triangulate three different data sources make this research project complex and increases the extent of the study.

Theoretical proposition. Qualitative research can begin without theoretical propositions (Yin, 2014, p. 30). In fact, qualitative research for theory building purposes ought to start without theoretical assumptions (cf. Eisenhardt, 1989a, p. 536). However, the formulation of a theoretical proposition is not entirely subject to the researcher’s free decision: Research question and the state of literature determine possibility and necessity of formulating a theoretical proposition. Further, the formulation of a theoretical proposition has methodological advantages (Yin, 2014, pp. 30, 37-45, 143; see chapter 2.8) and especially contributes to the possibility of analytical generalization of a study’s insights (Yin, 2014, p. 20). This study formulates the following theoretical proposition (chapter 2.8): Entrepreneurial growth

companies design and use their performance management systems to facilitate organizational learning processes and to balance single loop and double loop learning.

The research project started with the investigation of AlphaCo, the first case study, with the research question outlined above, but without theoretical propositions. One of my first observations was AlphaCo's founders' extraordinary focus on knowledge, information, data and organizational learning processes. At about the same time of the action project with AlphaCo, I read Von Krogh & Cusumano's (2001) paper on "three strategies for managing fast growth" as well as Kloot's (1997) paper on "organizational learning and management control systems". These papers' insights corresponded well to the observations at AlphaCo.

The organizational learning literature provides three organizational learning concepts, i.e. organizational learning processes (Huber, 1991), organizational learning modes (Argyris & Schön, 1978; March, 1991), and stages of knowledge (Garvin, 1993). These three concepts proved to be highly useful in explaining the findings at AlphaCo as well as in predicting observations at BetaCo and DeltaCo. As I reflected AlphaCo's empirical data with organizational learning theory during the investigation, I became able to formulate a theoretical proposition. This theoretical proposition guided the investigations into BetaCo and DeltaCo as well as the within case and cross case analysis of all three case studies.

3.4.2. Theoretical sampling and finding case firms

Theoretical sampling. Eisenhardt (1989a, p. 537) defines: "The goal of theoretical sampling is to choose cases which are likely to replicate or extend the emergent theory" and "selection of an appropriate population controls extraneous variation and helps to define the limits for generalizing the findings." Eisenhardt & Graebner (2007, p. 27) add: "Theoretical sampling simply means that cases are selected because they are particularly suitable for illuminating and extending relationships and logic among constructs." The definition of entrepreneurial growth companies, as elaborated in chapter 2.4, ensures the precise theoretical sampling of this study's three case studies.

This study adopts a multiple case study design, which corresponds to this study's purpose of theory elaboration. Graebner & Eisenhardt (2007, p. 27) compare single case research and multiple case research and state that "theory building from multiple cases typically yields more robust, generalizable, and testable theory than single case research". In addition, multiple cases enable deeper and broader exploration of research questions, can clarify whether findings are idiosyncratic to a single firm or replicable across cases, and ground theoretical propositions deeper in empirical evidence (Graebner & Eisenhardt, 2007, p. 27).

Number of cases and GammaCo. Overall, four case studies were conducted: AlphaCo, BetaCo, GammaCo and DeltaCo. AlphaCo, BetaCo and DeltaCo are analyzed and results are presented in this study. GammaCo was an interesting case, as the company developed a portfolio of highly

innovative technologies at the intersection of neuroscience, virtual and augmented reality, and artificial intelligence, and achieved a ‘unicorn’ valuation of more than USD 1 billion just four years after inception. However, GammaCo did not comply with the revenue growth criterion of the definition of suitable case studies. Although surely informative to this study, GammaCo is thus not included in the set of case studies. Three case studies are sufficient for literal replication across cases as well as for the analytic technique of pattern matching, since this study relies on the theoretical proposition and uses this theoretical orientation as its analytic strategy (Yin, 2014, pp. 136, 146, 239; see chapter 3.4.5).

Finding cases. The process of finding case firms was rather unstructured, opportunity-based and driven by personal network. Contact was made with many potential case studies in order to find firms that would fulfill the eight criteria for entrepreneurial growth companies. In addition to these criteria, a significant amount of trust was required between a case firm’s founders, middle managers, employees and me as the researcher. Trust is important for action research to get unobstructed access to the organization for interviews, to receive confidential and sometimes critical internal documentations, to conduct action projects to the case firm’s satisfaction without compromising research efforts, and to maintain a long-term relationship for further discussions and especially for the key informant review and approval of case study reports (Davison, Martinsons & Kock, 2004, p. 69; see chapters 3.4.6 and 3.5.1).

Action projects. All action projects related to a concrete managerial problem of case studies. Managerial problems to be addressed were rather urgent, founders were motivated to design the respective performance management practices, and suggested solutions were implemented by all three case studies (chapter 3.6.3). All action projects also related to at least one of Ferreira & Otley’s (2009) performance management system components. This requirement was not optional, it was mandatory to ensure successful action research (cf. Davison, Martinsons & Kock, 2004, p. 75). In total the action projects at AlphaCo, BetaCo and DeltaCo related to all of Ferreira & Otley’s (2009) components with the exception of question 4 on strategies and plans. Further, the action projects allowed for a significant amount of time on site and sitting next to founders and middle managers in order to collect sufficient empirical data.

Researcher-client agreement. A sound researcher-client agreement is the first of Davison, Martinsons & Kock’s (2004, p. 69) five principles for rigor and relevance in action research (see chapter 3.5.2). A contract was signed between AlphaCo, BetaCo, GammaCo, DeltaCo, respectively, and the Chair of Controlling / Performance Management of the University of St. Gallen. The contract specified the objectives and evaluation criteria of the consulting project, the compensation for the consulting work to the Chair of Controlling / Performance Management, confidentiality agreements as well as the case firm’s agreement to be a scientific case study in publications and presentations in the context of this research project.

The first case study. The very first case study is of particular importance to the research process. The first case study sharpens the research question, improves research instruments and investigative procedures, and trains the researcher's skills. The empirical data gathered in the first case study is the basis for reflecting about theory. The first case study allows for building a track record as a consultant and action researcher. This track record helps with being recommended to other potential case firms. The first case study AlphaCo allowed to formulate a theoretical proposition. In the acquisition process of BetaCo and DeltaCo, it was important to signal managerial experience (Groupon) as well as experience with action research at AlphaCo. AlphaCo also allowed to test the usefulness of Ferreira & Otley's (2009) performance management framework as a research instrument.

3.4.3. Research instruments and chain of evidence

Four research instruments. In order to adhere closely to the empirical evidence and to also manage the vast amount of data (Eisenhardt & Graebner, 2007, p. 25; Mintzberg, 1979, p. 587), four key research instruments are applied: field diary, case study database, data collection protocol and case study report. These four research instruments support a consistent and auditable chain of evidence.

Miles & Huberman (1984, pp. 28-33) recommend using a framework to systemize empirical data, to highlight the purpose and focus of the investigation, to uncover relationships between constructs, and to ensure that the same constructs are investigated across case studies. For this reason, field diary, data collection protocol, case study database and case study report are structured along Ferreira & Otley's (2009) 12-questions performance management systems framework. This approach supports a consistent and auditable chain of evidence as well.

Field diary. Eisenhardt (1989a, p. 539) states that "field notes are an ongoing stream-of-consciousness commentary about what is happening in the research, involving both observation and analysis – preferably separated from one another". The field diaries were used to document, structure and pre-analyze the empirical data. Observations as well as statements from interviews are documented right in the situation or shortly after. During the action projects on site at AlphaCo, BetaCo and DeltaCo, reviewing handwritten notes and structuring them into the field diary was a regular activity in the evening (Jönsson & Lukka, 2007, pp. 382, 385). All three field diaries are structured along Ferreira & Otley's (2009) framework and include their twelve questions. Next to general information about the respective case study, interviewees and key documents, field diaries also include research question and theory developments in order to keep the research purpose present and instantly reflect empirical data with theoretical aspects of performance management practices (Eisenhardt, 1989a, pp. 538-539).

Case study database. Yin (2014, p. 238) defines the case study database as "the systematic archive of all the data (field notes, documents, archival records etc.) from a case study,

assembled to enable the later retrieval of specific pieces of evidence, if needed, and sufficiently organized so that the entire archive can be reviewed by an outside reader, if desired". The three case study databases provide a complete record of all empirical evidence (Yin, 2014, p. 123) collected before, during and after action projects at AlphaCo, BetaCo and DeltaCo. Case study databases' folder structures are identical across all cases. Folder structures include a folder for all results from action projects, folders for each of Ferreira & Otley's (2009) twelve performance management system components as well as folders for interviews, photos and press articles.

Data collection protocol. Yin (2014, p. 240) defines the data collection protocol as "the procedural guide for collecting the data for a case study, including a set of field questions to be addressed by the researcher, representing the researcher's mental agenda". As for the field diary, the data collection protocol is used as an extension of the research question. For this reason, the data collection protocol is structured strictly along Ferreira & Otley's (2009) framework and theoretical developments of each performance management system component. The data collection protocol stores the empirical evidence for the design and use of performance management practices. It also provides a complete overview of all interviews conducted and all internal documents used for case study analyses. The data collection protocol also translates the real names of interviewees and internal documents into anonymized names and titles.

In the data collection protocol, the empirical evidence is categorized as interview quote, quote from an internal document, and direct observation as a participant in the change process. This categorization supports the data triangulation in the within case analysis as well as the preparation of the case study report. This organization of the data collection protocol also prepares the cross case analysis and particularly the analytic technique of pattern matching through tabulation (Eisenhardt, 1989a, pp. 542-543; Miles & Huberman, 1984, p. 158; Yin, 2014, pp. 165-167). The tabular displays in appendix B on performance management design and use, which triangulate interviewees' statements, quotes from internal documents as well as observations, are the result of this procedure in AlphaCo, BetaCo and DeltaCo's data collection protocols.

Case study report. The case study reports of AlphaCo, BetaCo and DeltaCo are detailed write-ups of each case study (Eisenhardt, 1989a, p. 540). Case study reports include descriptive narratives as well as preliminary analyses. The three case study reports are extensive and comprehensive documents. AlphaCo's case study report consists of 16.193 words over 41 pages, BetaCo's report consists of 18.582 words over 45 pages, and DeltaCo's report consists of 11.808 words over 32 pages.

Case study reports are formulated in continuous text in order to make argumentations explicit, to specifically address key informants at case studies as well as further interested parties (Yin,

2014, pp. 181-182). Case study reports are also organized to facilitate the cross case analysis and to provide indications of the specific circumstances of data collection (Yin, 2014, pp. 93-94). For these purposes, case study reports have consistent structures across all three case studies: (1) information about the case firm, confidentiality, contract between case firm and University of St. Gallen, research purpose, name and position of the key informant; (2) descriptive statistics about the case study; (3) overview of all sources of evidence; (4) descriptions of action projects conducted at the case firm; (5) within case analysis and results along Ferreira & Otley's (2009) framework including selected power quotes from interviews and proof quotes from documents (cf. Langley & Abdallah, 2011, p. 121); (6) preliminary conclusions in the context of the theoretical proposition; (7) concluding remarks; (8) further information about the research project. All case study reports were reviewed, discussed in person and approved by key informants from AlphaCo, BetaCo and DeltaCo (Gibbert, Ruigrok & Wicki, 2008, p. 1467).

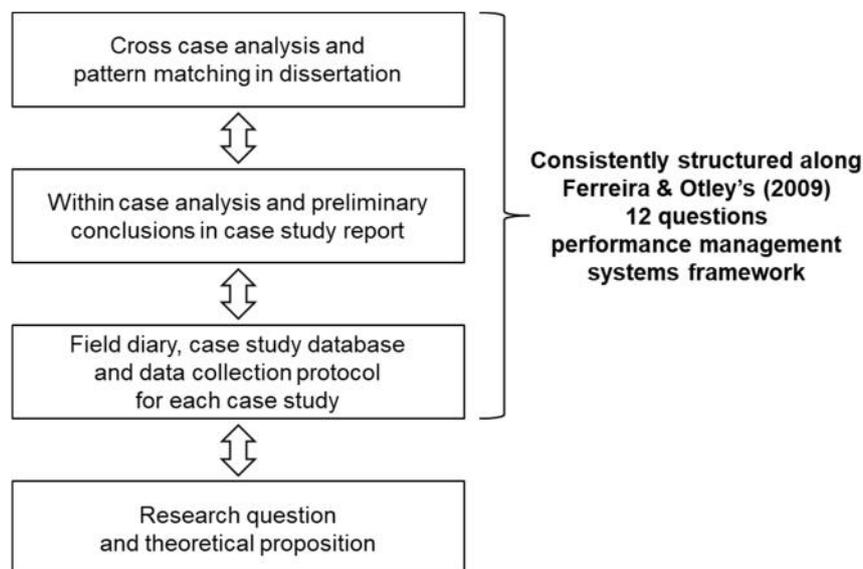


Fig. 11: Consistent and auditable chain of evidence (adapted from Yin, 2014, p. 128)

Chain of evidence. Yin (2014, p. 127) outlines the idea of a chain of evidence: “The principle is to allow an external observer – in this situation the reader of the case study – to follow the derivation of any evidence from initial research questions to ultimate case study conclusions. Moreover, this external observer should be able to trace the steps in either direction (from conclusions back to initial research questions or from questions to conclusions).” As illustrated in figure 11, this study maintains clear linkages between (1) research question and theoretical proposition, (2) field diary, case study database and data collection protocol for each case study, (3) within case analysis and case study report for each case study, and (4) cross case analysis and conclusions. The chain of evidence is consistently structured along Ferreira & Otley's (2009) framework in order to support its consistency and auditability.

3.4.4. Sources of evidence for data triangulation

Yin (2014, p. 105) defines six sources of evidence: documentation, archival records, interviews, direct observations, participant observation, and physical artifacts. In order to triangulate findings in tabular displays, these sources of evidence are collapsed into interviews, documents, and observations.

Interviews. Two types of formal interviews were conducted at AlphaCo, BetaCo and DeltaCo. The first type of interviews were semi-structured along Ferreira & Otley's (2009) performance management framework and their twelve questions. Semi-structured interviews were conducted with founders, middle management and at least one long-term, lower level employee. Four semi-structured interviews were conducted at AlphaCo, five at BetaCo, and three at DeltaCo. The second type of interviews related to projects in the context of action research. Since action projects must relate to performance management practices, these interviews were also relevant to the investigation. Project interviews were conducted with employees across all levels of organizational hierarchy. Interviews were conducted in German or English; German statements used are translated into English. 15 project interviews were conducted at AlphaCo, 18 at BetaCo, and 33 at DeltaCo.

Documents. A large variety of internal documents and archival records were collected, including: all hands presentations, brand analyses, compensation schemes and policies, competitor analyses e-mails, employee contracts, employee handbooks, employee lists, organization charts, financial business plans, financial statements, human resources presentations, job descriptions, KPI dashboards, legal fact books, letters, meeting schedules, onboarding presentations, performance evaluation tools, performance management presentations, performance reports, policies and procedures of all kind, presentations by investors, presentations for investors, process flow charts, quantitative analyses, recruiting standards, salary and position schemes, sales pitch presentations, service level agreements, strategic business plans, surveys, training materials. All case studies provided user access to information systems. Documents are written in German or English; German statements used are translated into English. In the analyses, 16 internal documents are used from AlphaCo, 31 internal documents from BetaCo, and 40 internal documents from DeltaCo.

Observations. Direct, real-time observations are one of the great advantages of case study research (Brown & Eisenhardt, 1997, p. 5). Action research makes the researcher a member of case studies' teams and a participant of the change processes (Yin, 2014, p. 115-117; also see Wouters & Wilderom, 2008, p. 500). Observations took place in formal settings, such as in meetings, trainings, conferences, strategy retreats and project workshops. Observations also took place in more casual circumstances, for instance by sitting in the same office, during team events and parties, private get-togethers, lunches and coffee breaks. Observations were entered

into field diaries in the situation, shortly after the situation, or on a regular basis in the evening (cf. Eisenhardt, 1989a, p. 539). Direct observations and participant observations increase with the time spent at case studies' offices. I spent 20 days on site with AlphaCo, 13 days with BetaCo, and 29 days with DeltaCo.

Physical artefacts. Yin (2014, pp. 117-118) highlights the relevance of physical artefacts. This study considers physical artefacts as evidence at the intersection of documentation and observation. Physical artefacts can be documented of course, but their meaning and practical use is a matter of observation. Descriptions were made and photos taken of physical artefacts such as the office design, work of art, the kitchen's white board, cartoons expressing the team's attitude towards the firm, organizational values systems hanging on the wall, social events, and other impressions that contribute to the overall picture. This approach allowed to recognize how case studies use non-information-based, physical performance management practices.

3.4.5. Replication logic, analytic strategy and analytic technique

Replication logic. Eisenhardt (1989a, p. 542) defines: "In replication logic, cases which confirm emergent relationships enhance confidence in the validity of the relationships." Yin (2014, p. 57) distinguishes literal and theoretical replication. Literal replication refers to "the selection of two (or more) cases within a multiple case study because the cases are predicted to produce similar findings" (Yin, 2014, p. 239). Theoretical replication refers to "the selection of two (or more) cases in a multiple case study because the cases are predicted to have contrasting findings, but for anticipatable reasons" (Yin, 2014, p. 241). The theoretical proposition predicts consistent patterns for the design and use of performance management systems across AlphaCo, BetaCo and DeltaCo. Therefore, this study uses a literal replication logic.

Analytic strategy. Yin (2014, pp. 132-142) suggests four general analytic strategies to analyze empirical data and draw conclusions. Since the study formulates a theoretical proposition, the analytic strategy of "relying on theoretical propositions" (p. 136) is most appropriate. This analytic strategy requires to follow the theoretical proposition through the empirical data and use it as a theoretical orientation in data analyses as well as in the presentation of results (Yin, 2014, p. 136). The empirical evidence is analyzed according to whether or not the theoretical proposition can be correct – or has to be rejected. This analytic strategy is supported by "examining plausible rival explanations" (Yin, 2014, p. 140) in chapter 5.1.

Analytic technique. The formulation of a theoretical proposition implies the use of "pattern matching" (Yin, 2014, p. 143) as analytic technique. Yin (2014, p. 240) defines that pattern matching is the "analysis of case study data by comparing or matching the pattern within the collected data with a pattern defined prior to data collection". This study's theoretical proposition predicts that AlphaCo, BetaCo and DeltaCo consistently facilitate organizational learning processes and balance organizational learning modes by the designs and uses of their

performance management systems. Yin (2014, p. 147) highlights that case study research and the analytic technique of pattern matching allows for “interpretive discretion on the part of a researcher”. This is true for this study as well. Various measures are applied to counteract this interpretive discretion, as outlined in chapter 3.5.

Tools. A selection of four specific tools are applied that support the within case analyses, the cross case analysis as well as the reporting of results. First, rich descriptions and narratives for each case study are provided (Eisenhardt & Graebner, 2007, pp. 28-29). Second, tabulation is used to triangulate evidence (Eisenhardt, 1989a, pp. 542-543; Miles & Huberman, 1984, p. 158; Yin, 2014, pp. 165-167), which is a particular suitable tool to compare and contrast patterns within case data and across case studies (cf. Brown & Eisenhardt, 1998). Third, and related, “power quotes” and “proof quotes” (Langley & Abdallah, 2011, p. 121) are used to support and illustrate findings. These quotes are provided in appendix B. Fourth, “causal models” (Miles & Huberman (1984, p. 190) or “logic models” (Yin, 2014, p. 239) are used to illustrate relationships between constructs.

3.4.6. Within case analysis

Within case analysis. Eisenhardt (1989a, p. 540) defines: “The overall idea [of the within case analysis] is to become intimately familiar with each case as a stand-alone entity. This process allows the unique patterns of each case to emerge before investigators push to generalize patterns across cases.” AlphaCo was the first case, then BetaCo, and then DeltaCo. Research skills and the four research instruments outlined in chapter 3.4.3 improved from one case study to the next. Only when the within case analyses for all cases were brought to saturation and formally closed with the key informant review, the cross case analysis was initiated.

Data collection approach and within case analysis. The approach to data collection supports the within case analysis on the holistic performance management system of each case study (see chapter 3.6.3 and table 19 for an overview). First, semi-structured interviews covered Ferreira & Otley’s (2009) questions and provided broad data as well as explanations on the design and use of performance management system components. Second, action projects allowed data collection through project interviews and project-related documents, and thus provided in-depth data on performance management system components. Third, being on site and being part of the team allowed to collect observations about all performance management system components.

Iteration between data and theory. Ferreira & Otley’s (2009) framework is used in the within case analysis and in the case study reports. This approach supported the overlap of data collection and data analysis during action projects (Eisenhardt, 1989a, pp. 539-539). This approach also facilitated the iteration between data and theories. First, the iteration between case study data and management accounting and control theory is used to identify design and

use of performance management systems for each case. And second, the iteration between case study data and organizational learning theory contributes to explaining the design and use of performance management systems of each case. Iterations between data and theories are reflected in the structure of case study reports.

Case study report. The compilation of case study report was the objective of each within case analysis. The finished case study report also denoted the completion of the within case analysis. The writing of the case study report required the constant and simultaneous use of field diary, case study database, data collection protocol as well as management accounting and control theory and organizational learning theory. Accordingly, AlphaCo, BetaCo and DeltaCo's case study reports include two main sections for analysis. First, a section to answer the research question on the design and use of performance management systems for each case. And second, a section to reflect findings to the research question with organizational learning theory as an explanation for design and use. In general, the flow of analysis started with field diary and case study database, continued with the data collection protocol, and culminated in the preparation of the case study report for each case study.

Key informant review and approval. Key informants reviewed and approved respective case study reports. Case study reports were adapted based on the feedback of these key informants. Case study reports were sent to key informants prior to the discussion. All discussions took place in person. All key informants approved respective case study reports. At AlphaCo the founder & CEO reviewed and approved the AlphaCo case study report. At BetaCo the founder & CEO reviewed and approved the BetaCo case study report. At DeltaCo the COO & Managing Director as well as the Senior Manager Corporate Development reviewed and approved the DeltaCo case study report.

3.4.7. Cross case analysis and synthesis

Cross case synthesis. Yin (2014, p. 238) defines the cross case synthesis as "a compiling of data for a multiple case study, by examining the results for each individual case and then observing the pattern of results across the cases". This study aims at literal replication across three case studies (Yin, 2014, p. 239; chapters 3.4.2 and 3.4.5). The analytic strategy is to rely on the theoretical propositions and follow it through the evidence (Yin, 2014, p. 136; chapter 3.4.5). The analytic technique is pattern matching (Yin, 2014, p. 143; chapter 3.4.5). Grounded in these approaches, this study analyzes the empirical evidence across case studies, conducts a cross case analysis, and provides a cross case synthesis to answer the research question as well as to examine the theoretical proposition and its theoretical model.

Triangulation. Triangulation is most essential to the literal replication logic, the analytic strategy, the analytic technique as well as the presentation of results in the cross case synthesis. Hopper & Hoque (2006, pp. 478-482) identify three approaches to triangulation: data

triangulation, theoretical triangulation and investigator triangulation. Data triangulation is applied. To some degree, this study also applies theoretical triangulation. However, a single researcher cannot apply investigator triangulation.

	AlphaCo	BetaCo	DeltaCo
Interviews	Power quote from semi-structured or project interviews	Power quote from semi-structured or project interviews	Power quote from semi-structured or project interviews
Documents	Proof quote from documents in case study database	Proof quote from documents in case study database	Proof quote from documents in case study database
Observations	Observation from field diary or data collection protocol	Observation from field diary or data collection protocol	Observation from field diary or data collection protocol

Tab. 12: Triangulation tables of data sources in cross case analysis

Data triangulation. Hopper & Hoque (2006, p. 482) define: “Data triangulation involves using a variety of data sources within a single study. The strategy mixes both qualitative and quantitative methods including interviews, detailed observations and shadowing, documentary evidence and questionnaires to help the researcher to generate a rich source of field data with internal checks on its validity.” Interviews, documents and observations are used to triangulate patterns on the design and use of performance management systems at AlphaCo, BetaCo and DeltaCo. As recommended by Yin (2014, pp. 165-166), tabulation is used for this purpose. Triangulation tables, as illustrated in table 12, are organized the same way for all sections in chapter 4.1 and displayed in appendix B. Interview statements are used as “power quotes” and statements from internal documents are used as “proof quotes” (Langley & Abdallah, 2011, p. 121); both are triangulated with participant observations.

Theoretical triangulation. Hopper & Hoque (2006, p. 482) define: “Theoretical triangulation involves using various factors from a variety of theoretical perspectives simultaneously to examine the same dimension of a research problem.” Theoretical triangulation is applied in two ways. First, the study uses different theoretical perspectives to understand the phenomenon of growth (chapter 2). These theoretical perspectives include management accounting and control theory, organizational learning theory, life cycle theory as well as studies from the entrepreneurship literature. Second, results are critically reflected with the findings from previous studies for each performance management practice (chapter 4.1). Third, rival theoretical explanations and examined – and rejected (chapter 5.1).

Parts of the cross case synthesis. The cross case synthesis consists of three parts, as described in detail below. These three parts relate to research question, theoretical proposition and growth stage contingency model. Chapter 4.1 provides answers to the research question and examines patterns of performance management systems design and use across AlphaCo, BetaCo and DeltaCo. Chapter 4.2 examines the theoretical proposition and relates the results on

performance management systems design and use to the three concepts of organizational learning. Finally, chapter 4.3 discusses the validity of the growth stage contingency model and generalizes the cross case synthesis to entrepreneurial growth companies.

3.4.8. Reporting analyses and results

Yin (2014, p. 186) recommends: “[In multiple case studies], there may be no separate chapters or sections devoted to the individual cases. Rather, your entire report may consist of the cross case analysis, whether purely descriptive or also covering explanatory topics.” AlphaCo, BetaCo and DeltaCo’s case study reports include the within case analysis. Following Yin’s advice, this study reports the cross case analysis only.

Structure of chapter 4.1. Chapter 4.1 is structured along Ferreira & Otley’s (2009) 12-questions performance management system framework. The chapter aims at answering the research question by answering Ferreira & Otley’s (2009) twelve questions. A total of 54 performance management themes and practices are investigated.

Each chapter starts with definitions of performance management practices from the management accounting and control literature. Next, a summary is provided of the key findings at AlphaCo, BetaCo and DeltaCo and reflect them with previous studies for theoretical triangulation. Next, the detailed analyses and explanations of performance management design and use are provided. Where appropriate these analyses are supported with tabular displays as well as causal models. Power quotes, proof quotes and observations are provided in tabular displays in appendix B for all three case studies.

Mostly just the cross case analysis is provided. However, in some instances the analysis is conducted case by case. This approach is chosen when the analysis is complex and requires detailed explanation, when results of each case are particularly interesting, when findings are idiosyncratic yet relevant to a case firm, or when case studies show inconsistent patterns and do so for a reason.

The study also identifies and elaborates on ‘emergent themes’. Emergent themes are results, which are considered relevant for the understanding of the design and use of performance management systems in entrepreneurial growth companies. These insights are also interesting for the further development of a holistic framework of performance management such as Ferreira & Otley’s (2009) as well as for performance management as a discipline itself.

Structure of chapter 4.2. Chapter 4.2 is also structured along Ferreira & Otley’s (2009) framework. Chapter 4.2 examines the results from chapter 4.1 on the design and use of performance management systems in light of the theoretical proposition on case studies’ intention to facilitate organizational learning. Each chapter starts with power quotes or proof quotes from case studies (cf. Langley & Abdallah, 2011, p. 121) as well as with supportive

quotes from previous scientific studies. Each chapter continues with a short summary on the patterns of performance management systems design and use choices identified in chapter 4.1. The design and use choices are then examined and explained using the three organizational learning concepts of organizational learning processes (Huber, 1991), stages of knowledge (Garvin, 1993) and organizational learning modes (Argyris & Schön, 1978; March, 1991).

Structure of chapter 4.3. Chapter 4.3 mirrors the theoretical developments of chapter 2.6. The results from the cross case analysis are aggregated to the growth stage contingency model in order to generalize findings. First, the growth objective is examined as the dominant contingent variable (chapter 4.3.1). Second, case studies' choices for performance management system design and use are summarized and explained in overview tables (chapter 4.3.2). Third, results for the theoretical proposition as well as for the three organizational learning concepts are summarized in the context of actual design and use choices (4.3.3). Fourth, this study's theoretical assumptions about the relationship between organizational learning and growth are summarized and an evaluation about the growth stage contingency model's validity and potential for analytical generalization is provided (chapter 4.3.4).

3.5. Quality criteria

3.5.1. Quality criteria for qualitative research

Standards for rigor and relevance. The challenges of case study research and action research call for clear standards to ensure scientific rigor as well as theoretical and practical relevance. Yin (2014, pp. 45-49) has established four criteria for judging the quality of case study research: construct validity, internal validity, external validity and reliability. Yin (2014) is widely recognized as a standard textbook for case study research and is referred to in high-class publications such as Batac & Carassus (2009), Collier (2005), Dávila (2005), Kloot (1997), and Sandelin (2008). The four quality criteria for qualitative research shall be defined as follows.

Yin's (2014) four quality criteria for case study research

Construct validity: The study identifies the correct operational measures for the concepts being studied, i.e. the study investigates what it claims to investigate.

Internal validity: The study interprets the relationships between variables correctly.

External validity: The study's results can be generalized to theoretical propositions and the study defines the domain to which results can be generalized.

Reliability: The study can be repeated with the same results.

Yin (2014, p. 45) also proposes “several tactics for dealing with these four [quality criteria] when doing case study research”. Based on Yin’s work, Gibbert, Ruigrok & Wicki (2008, 1466) elaborate on a framework of specific “research measures or actions that case study researchers may take for each criterion”. Yin’s (2014) tactics as well as the framework of measures proposed by Gibbert, Ruigrok & Wicki (2008) are used to ensure validity and reliability in this study. Table 13 provides a summary and refers to respective chapters.

Quality criteria and associated measures	Criteria met?	Chapter
Construct validity - the study investigates what it claims to investigate		
Data triangulation	yes	3.4.4
Peer reviews / investigator triangulation	no	
Key informant reviews	yes	3.4.6
Consistent chain of evidence	yes	3.4.3
Indication of data collection circumstances	yes	3.6
Explanation of analytic techniques applied	yes	3.4.5
Internal validity - the study interprets relationships correctly		
Theory-based research framework	yes	2.2
Theoretical triangulation	yes	4.1
Analytic technique applied consistently	yes	3.4.5
Addressing rival explanations	yes	5.1
External validity - the study’s results can be analytically generalized		
Theoretical sampling of case studies	yes	3.4.2
Conducting multiple case studies	yes	3.4.2
Description of specific contexts of case studies	yes	3.6
Reliability - the study can be audited and repeated with same results		
Systematic, theory-based data collection protocol	yes	3.4.3
Structured and complete case study database	yes	3.4.3
Consistent and auditable chain of evidence	yes	3.4.3

Tab. 13: Quality criteria for validity and reliability (Gibbert, Ruigrok & Wick, 2008; Yin, 2014)

Construct validity. Construct validity can be ensured by data triangulation, by peer reviews, by key informants reviews, by a auditable chain of evidence, by an indication of data collection circumstances as well as by providing an explicit explanation of analytic techniques (Gibbert, Ruigrok & Wicki, 2008, pp. 1466-1468; Hopper & Hoque, 2006, p. 482; Yin, 2014, pp. 45-49). This study ensures construct validity with the following measures.

First, the action research approach opens access to all of the main sources of empirical data (Yin, 2014, p. 105). Specifically, the study can triangulate findings using semi-structured interviews, interviews for project purposes, documents and archival records, observations, participant observations as well as physical artefacts. Second, although I am in discussions about findings with academic peers, gave many lectures on findings, and published some of this study’s insights already (Engelhardt & Möller, 2017; Engelhardt, Gassmann & Möller, 2019), results were not systematically reviewed by peers. Case studies were also not conducted together with other investigators (“investigator triangulation” as defined by Hopper & Hoque, 2006, p. 482). The measure of peer reviews is the only measure suggested by Gibbert, Ruigrok & Wicki (2008) and Yin (2014) that this study does not apply. Third, results from action projects as well as findings and insights from this research are discussed with key informants

from the three case studies. Key informants from AlphaCo, BetaCo and DeltaCo reviewed and approved respective case study reports. Fourth, the study maintains a consistent chain of evidence. Fifth, overviews and details of the particular circumstances of data collection are provided. Finally, the study explicitly uses pattern matching as an analytical technique to draw conclusions.

Internal validity. Internal validity can be ensured by deriving the research framework explicitly from the literature, by theoretical triangulation, by the use of a consistent and explicit analytic technique, as well as by addressing rival explanations (Gibbert, Ruigrok & Wicki, 2008, pp. 1466-1468; Yin, 2014, pp. 45-49). Theoretical triangulation refers to the use of different theoretical lenses or bodies of literature to the subject of investigation (Hopper & Hoque, 2006, pp. 478-482). This study uses all of these measures to ensure internal validity.

First, the research framework is explicitly developed out of well-established management accounting and control theory (most notably Ferreira & Otley, 2009, and Simons, 1995), contingency theory (Otley, 1980), life cycle theory (especially Dickinson, 2011, and Greiner, 1972) as well as organizational learning theory (especially Argyris & Schön, 1978, Huber, 1991, and March, 1991). Grounded in management accounting and control theory, the study provides theoretical definitions of all constructs. Second, the study adopts multiple – yet entangled – theoretical perspectives on the research question in order to triangulate theories. Findings are also reflected with conclusions from previous studies. Third, pattern matching is used as consistent analytic technique. As the study formulates a theoretical proposition, empirically observed patterns can be compared with patterns both reported in previous studies as well as predicted and explained by the theoretical proposition. Finally, chapter 5.1 addresses rival theoretical explanations.

External validity. External validity can be ensured by theoretical sampling of cases (Eisenhardt, 1989a, pp. 536-537), by conducting multiple case studies in contrast to just one, as well as by providing details on the specific contexts of the cases (Gibbert, Ruigrok & Wicki, 2008, pp. 1466-1468; Yin, 2014, pp. 45-49). This study uses all these measures to ensure external validity and especially analytical generalization. First, a strictly theory-based definition of entrepreneurial growth companies is applied. The theoretical definition is grounded in management accounting and control research and integrates further academic literatures. Second, three in-depth case studies were conducted, which comply with the theoretical sampling definition. Finally, overviews and detailed descriptions on the particular situations of the three case studies are provided.

Reliability. Reliability can be ensured by using a systematic, theory-based data collection protocol, by maintaining a structured and complete case study database as well as by explicating a consistent chain of evidence (Gibbert, Ruigrok & Wicki, 2008, pp. 1466-1468; Yin, 2014, pp.

45-49). This study uses all these measures to ensure reliability. First, field diary, data collection protocol and case study database are structured along Ferreira & Otley's (2009) performance management framework, their twelve questions as well as their theoretical development. Their framework is grounded in management accounting and control theory and thus facilitates data analysis and the reporting of results. Second, a comprehensive case study database is maintained, which includes all data collected before, during and after the investigations of AlphaCo, BetaCo and DeltaCo. Finally, a consistent chain of evidence is ensured, and other researchers would be able to conduct this research in the same way. More specifically, other researchers could audit this study and most likely reach to the same conclusions.

3.5.2. Quality criteria for action research

Several frameworks and quality criteria have been outlined specifically for action research across academic disciplines (e.g. Davison, Martinsons & Kock, 2004; Eden & Huxham, 1993; Herr & Anderson, 2005; Jönsson & Lukka, 2007; Kaplan, 1998; Reason & Bradbury, 2008). A frequently cited framework are the five principles of action research proposed by Davison, Martinsons & Kock (2004). They refer to "canonical action research", as they intend to express a very pure adopted approach to action research. To avoid confusion this study refers to 'action research' only. Davison, Martinsons & Kock (2004) suggest the following five principles.

Davison, Martinsons & Kock's (2004) five principles of action research

- (1) The principle of the researcher-client agreement:** Researcher and client have full agreement and commitment over the study's objectives, focus, benefits, responsibilities, data collection and analysis.
- (2) The principle of the cyclical process model:** Action research projects go through the five stages of diagnosis, planning, intervention, evaluation and reflection.
- (3) The principle of theory:** Action research needs to be informed by theory and a theoretical framework, not necessarily in the beginning but latest as part of the planning stage.
- (4) The principle of change through action:** Change and action are indivisible, action is taken with the explicit objective to produce change of the current situation.
- (5) The principle of learning through reflection:** Reflection of learnings includes both practical change for the client, generalizable practical implications as well as theoretical advancement of knowledge.

To further define their five principles of action research, Davison, Martinsons & Kock (2004) outline criteria for each principle and express these criteria in the form of questions. These questions are supposed to be answered with yes or no. Their 31 criteria and this study's efforts to meet them are summarized in table 14.

Principles and their criteria	Criteria met?	Chapters
(1) Principle of the researcher-client agreement		
1a Did both the researcher and the client agree that action research was the appropriate approach for the organizational situation?	yes	3.4.2
1b Was the focus of the research project specified clearly and explicitly?	yes	3.4.2
1c Did the client make an explicit commitment to the project?	yes	3.4.2
1d Were the roles and responsibilities of the researcher and client organization members specified explicitly?	yes	3.4.2
1e Were project objectives and evaluation measures specified explicitly?	yes	3.4.2
1f Were the data collection and analysis methods specified explicitly?	yes	3.4.2, 3.4.6
(2) Principle of the cyclical process model		
2a Did the project follow the cyclical process model or justify any deviation from it?	yes	3.4
2b Did the researcher conduct an independent diagnosis of the organizational situation?	yes	3.6.3
2c Were the planned actions based explicitly on the results of the diagnosis?	yes	3.6.3
2d Were the planned actions implemented and evaluated?	yes	3.6.3
2e Did the researcher reflect on the outcomes of the intervention?	yes	3.4.6
2f Was this reflection followed by an explicit decision on whether or not to proceed through an additional process cycle?	yes	3.4.6
2g Were both the exit of the researcher and the conclusion of the project due to either the project objectives being met or some other clearly articulated justification?	yes	3.4.6
(3) Principle of theory		
3a Were the project activities guided by a theory or set of theories?	yes	chapter 2
3b Was the domain of investigation, and the specific problem setting, relevant and significant to the interests of the researcher's community of peers as well as the client?	yes	2.7, 3.6
3c Was a theoretically based model used to derive the causes of the observed problem?	yes	2.2, 2.3
3d Did the planned intervention follow from this theoretically based model?	yes	2.6
3e Was the guiding theory, or any other theory, used to evaluate the outcomes of the intervention?	yes	2.6
(4) Principle of change through action		
4a Were both the researcher and client motivated to improve the situation?	yes	3.4.2, 3.6.3
4b Were the problem and its hypothesized causes specified as a result of the diagnosis?	yes	3.4.2, 3.6.3
4c Were the planned actions designed to address the hypothesized causes?	yes	3.4.2, 3.6.3
4d Did the client approve the planned actions before they were implemented?	yes	3.4.2, 3.6.3
4e Was the organization situation assessed comprehensively both before and after the intervention?	yes	3.4.2, 3.6.3
4f Were the timing and nature of the actions taken clearly and completely documented?	yes	3.4
(5) Principle of learning through reflection		
5a Did the researcher provide progress reports to the client and organizational members?	yes	3.4.6
5b Did both the researcher and the client reflect upon the outcomes of the project?	yes	3.4.6, 3.6.3
5c Were the research activities and outcomes reported clearly and completely?	yes	3.4.6
5d Were the results considered in terms of implications for further action in this situation?	yes	3.6.3, 6.1
5e Were the results considered in terms of implications for action to be taken in related research domains?	yes	chapter 5
5f Were the results considered in terms of implications for the research community (general knowledge, informing/re-informing theory)?	yes	chapter 5
5g Were the results considered in terms of the general applicability of action research?	yes	6.1, 7.1

Tab. 14: Criteria for rigor and relevance in action research (Davison, Martinsons & Kock, 2004)

This study intends to meet all five principles and all 31 criteria. Table 14 provides the chapters, which address the respective measures. Gibbert, Ruigrok & Wicki (2008, p. 1468) hold that “methodological rigor is not a random attribute”. Rigor comes with work and deliberate action. As chapter 3.5 illustrates, this study takes great care to ensure sound methodology.

3.6. Introduction to case studies

3.6.1. Descriptions of AlphaCo, BetaCo and DeltaCo

My analysis and results are grounded in empirical evidence that are gathered from three case studies. For confidentiality reasons these three case studies are named AlphaCo, BetaCo and DeltaCo. Table 15 provides descriptive statistics. I remain in contact with all three companies. As of December 2019, all companies are in business.

	AlphaCo	BetaCo	DeltaCo
Industry	Healthcare, diagnostic imaging services	Nutrition, wellness, fitness	Mobile advertising technology
Market	Total addressable market is large and growing	Total addressable market is large and growing	Total addressable market is large and strongly growing
Business model	Diagnostic imaging as a service	Online platform and e-commerce	In-app marketing and app install marketing
Commercial relationships	Business to business to customers	Business to customers	Business to business
Year founded	2011	2013	2012
Headquarter	Berlin	Munich	Berlin
Technology	High-tech	Internet	High-tech
Strategy	High growth strategy	High growth strategy	High growth strategy
Business environment	Stable, regulated market	Dynamic business environment	Dynamic and volatile market, fast changing industry
Type of ownership	Founders and one strategic investor	Founders, strategic investor, seed investor, business angels	Founders and investors

Tab. 15: Descriptive statistics of AlphaCo, BetaCo and DeltaCo

AlphaCo. AlphaCo is an entrepreneurial growth company in the health care industry in Germany. The firm was founded in Berlin in 2011 by three experienced entrepreneurs, who have backgrounds in engineering, strategy consulting and international corporations. In 2015, shortly before the investigation, an international private equity firm invested a significant amount of venture capital.

AlphaCo's value proposition slogan is "diagnostic imaging as a service". AlphaCo intends to disrupt the way diagnostic imaging – computed tomography scanning and magnetic resonance imaging – is provided to both patients and radiologists. Patients benefit from extended availability due to long business hours as well as short waiting times. Radiologists do not have to own their own diagnostic center and equipment. Instead they pay per image in a pay-per-use model. Radiologists profit from AlphaCo's process knowledge, highly qualified personnel and can concentrate on the diagnosis of radiological images. AlphaCo's concept intends to optimize the entire value chain for diagnostic imaging. More specifically, AlphaCo digitizes all core processes with their proprietary software, the "AlphaCo Information System". AlphaCo is able to realize efficiency potentials in the fields of processes, organisation, technology as well as practice architecture. By focusing on efficiency gains and by applying a pay-per-use business model, AlphaCo changes diagnostic imaging from the classical hardware business to a services business.

AlphaCo developed well since the investigation. As of September 2019, AlphaCo operates twelve diagnostic centers, with four additional centers under construction. AlphaCo has internationalized to three countries, one of which is outside Europe. In 2017, founders have secured an eight digits capital infusion for further growth.

BetaCo. BetaCo is an entrepreneurial growth company in the nutrition and fitness industry in Germany. The firm was founded in Munich in 2013. The four founders are experienced and have backgrounds as serial entrepreneurs, as strategy consultants, in engineering, and in venture capital. BetaCo received seed investments from a company builder; in 2015 a corporate venture capital investor invested significant capital for further growth.

BetaCo's value proposition slogan is "Your expert for real vitality". The firm operates an online platform for products and services in the area of nutrition, dieting, wellness, fitness and beauty. BetaCo develops and sells private label products as well as third party brands. BetaCo combines the sale of these products with services, advice and expert content.

BetaCo experienced difficulties, but overall developed well since the investigation. The firm acquired two competitors and internationalized to two countries. For further acquisition as well as organic growth, BetaCo secured an eight digits growth capital infusion in 2018.

DeltaCo. DeltaCo is an international entrepreneurial growth company in the mobile advertising industry. The company was founded in Berlin in 2012 by a Berlin-based company builder, who finances startups in areas such as advertisement technology and financial technology. One of this company builder's founding partners launched DeltaCo. In 2013, DeltaCo received a significant venture capital investment to support further growth. DeltaCo initiated two startups and bought two other companies before the time of investigation. The three members of the C-level have extensive experience as serial entrepreneurs as well as in strategy consulting, venture capital, business development and general management.

DeltaCo's value proposition slogan is "data driven app marketing". The firm develops advertisement technology ('ad tech') and is specialized in ad tech on mobile phones. DeltaCo is a two-sided marketplace and provides a technology platform for advertisers to reach their target audiences on mobile phones. The platform connects advertisers (demand), who want to advertise in apps on mobile phones, with media partners (supply), who have media space or media inventory, and provide access to potential customers for advertisers' mobile app. The technology and its algorithms support in showing the right target audience the right advertisement and in calculating the right price of the media inventory. DeltaCo uses external software solutions and develops a proprietary software, the "DeltaCo DL 360".

DeltaCo operates in a dynamic market. After the investigation, the ad tech market consolidated. A strategic investment holding acquired DeltaCo in a successful trade sale in June 2019.

3.6.2. Conformity with theoretical sampling definition

Growth indicators. AlphaCo, BetaCo and DeltaCo comply with the theoretical definition of entrepreneurial growth companies (see chapter 2.4.3). Tables 16 and 17 provide respective summaries. Cases studies have developed an innovative business model, pursue a growth strategy and are less than five years old at the time of investigation. Starting from significant sales already, all case studies grew at least 100% in sales as well as at least 50% in headcount year over year at the time of investigation. All case studies received more than EUR 9 million in venture capital, which is at the upper range of such investments (Bundesverband Deutsche Startups, 2018, p. 58). Founders hold the most relevant executive positions and own their companies to a significant degree.

	AlphaCo	BetaCo	DeltaCo
Sales	Significant sales (no indication as per CEO's request)	> EUR 10mn	> EUR 25mn
Headcount	> 90	> 40	> 200 (excluding affiliated firms)
Sales growth rate (year v year)	> 100%	> 100%	> 170%
Employees growth rate (year v year)	ca. 75%	ca. 50%	ca. 100%
Profitability	profitable	not yet profitable	profitable
Investing activities	dedicated and substantial investing activities	dedicated and substantial investing activities	dedicated and substantial investing activities
Growth capital	> EUR 15mn	> EUR 9mn	> USD 20mn

Tab. 16: Growth indicators of AlphaCo, BetaCo and DeltaCo

Management team experience. Profound management experience ensures that action research can learn from the approaches of these three case studies. Founders', managers' and key employees' professional record on LinkedIn are reviewed, such as university degrees, diversity in work experience, previous management positions, and previous entrepreneurial experience. Managerial capabilities were also assessed during projects.

Professional experiences and management skills are high in all three cases, most notably of founder teams, and on the side of middle managers as well. Founders have backgrounds as serial entrepreneurs, as strategy consultants, venture capitalists and/or have worked in senior management positions at large international corporations. With the exception of one founder at BetaCo, founders are all in their 30s or early 40s.

	AlphaCo	BetaCo	DeltaCo
Experience per functions			
CEO	high (founder & MD)	high (founder, MD)	high (founder, MD)
Sales	high (founder & MD)	same as CEO	high (MD)
Marketing	same as Sales	high	medium
Key account management	same as Sales	none	high
Operations	same as CEO	high (founder)	high (founder, MD)
Engineering	high (founder & MD)	high (founder)	high
IT infrastructure	medium	same as engineering	outsourced
Product development	same as engineering	medium	high
Customer service	high	same as operations	same as key account management
Finance	high	high	high
Investor relations	high (all founders and Finance)	high (all founders)	high (all founders)
Human resources	high	high	medium
Corporate development	high (Head of Knowledge & Quality)	none	medium
Other	high (Head of Special Projects)	high (founder & seed investor)	high (several managers in operations)
Overall experience assessment			
Founders	high	high	high
Middle mgmt.	high	high	high
Overall assessment	high	high	high

Tab. 17: Assessment of management team experience

As per the assessment of management team experience, it is sound to assume that these experienced entrepreneurs of already successful entrepreneurial growth companies design and use their performance management system in an informed and deliberate way.

3.6.3. Descriptive statistics of action projects and empirical evidence

Action projects. In the course of action research projects, I spent a total of 62 days on site in the headquarters of AlphaCo, BetaCo and DeltaCo. I worked next to and with founders, managers and employees. I became part of their teams. At AlphaCo, the first case study, I was even termed the “super intern” (“der Super-Praktikant”). At all case studies a member of the founder team was the project sponsor. The main project contacts were either founders themselves or senior managers from the middle management. Table 18 provides an overview.

	AlphaCo	BetaCo	DeltaCo
Research dates	28.9.2015 - 30.10.2015	2.11.-6.11.2015; 25.1.-2.2.2016; 19.2.2016	11.4.2016-18.6.2016
Number of days	20 days on site	13 days on site	29 days on site
Project sponsor	Founder and CEO	Founder & CEO, Founder & COO	COO & Managing Director
Project main contacts	Founder & CEO, Head of Finance, Head of Knowledge & Quality	Founder & CEO, Founder & COO	Senior Mgr. Corp. Development, Head of HR, VP Finance
Action projects	Procurement process, spending & transaction policy	Nov 2015: Cost control report; procurement process; accounts payable process; spending & transaction policy Jan/Feb 2016: Strategic KPI system; review HR processes; feedback on organizational culture; analysis key success factors.	DeltaCo Growth Cycle (performance measurement system), OPEX reduction, cost control, re-organization of business intelligence team, HR KPI reporting, compensation structure

Tab. 18: Description of action research projects

Action projects explicitly relate to Ferreira & Otley's (2009) performance management system components, as summarized in table 19. Strategy & plans were not part of any action project. Target setting was not a project in any of the cases explicitly. Yet the projects on key performance measures implicitly strongly impacted the design of target setting. In addition, at BetaCo and DeltaCo Objectives & Key Results (OKRs) as goal setting system was analyzed prior to implementation. Performance management system use, performance management system change as well as strength and coherence are 'meta-questions'. Thus, these components cannot be part of action projects and need to be investigated by participant observations.

	AlphaCo	BetaCo	DeltaCo
Vision & mission		Review vision statement, review organizational values	
Key success factors		Analysis key success factors	Analysis key success factors
Organization structure	Procurement process, spending & transaction policy	Spending & transaction policy	Re-organization of business intelligence team, spending & transaction policy
Strategies & plans			
Key performance measures	Cost control reporting	BetaCo Strategic KPI System, cost control report	DeltaCo Growth Cycle, OPEX reduction, cost control reporting, HR KPI reporting
Target setting		Feedback on OKR implementation	Feedback on OKR implementation
Performance evaluation		BetaCo Strategic KPI System report and meeting process, review HR processes	DeltaCo Growth Cycle report and meeting process
Reward systems			Analysis compensation structure
Info flows, systems & networks	Procurement process	Procurement process, accounts payable process	Re-organization of business intelligence team

Tab. 19: Action projects and performance management system components

Empirical evidence. The action research approach generated in-depth empirical data, as summarized in table 20. A total of 66 interviews were conducted in the course of action projects, five workshops about the action projects as well as twelve semi-structured interviews along Ferreira & Otley's (2009) performance management framework. These interviews do not include countless meetings that were done in the course of the action projects. Interviews were conducted across all levels of the hierarchy. The focus, however, was on founders and senior managers. Table 69 in appendix A provides a detailed overview of interview partners and dates at case studies.

AlphaCo, BetaCo and DeltaCo granted access to all sorts of documents. Several of these documents are confidential, such as investor presentations, strategic business plans, financial business plans or financial statements. In total, this study uses 87 relevant internal documents for the analysis of case studies' performance management systems. Table 70 in appendix A provides a detailed overview of internal documents used in the analysis.

	AlphaCo	BetaCo	DeltaCo
Number of project interviews	15 interviews across all org. levels	18 interviews across all org. levels; 5 CEO coaching sessions	33 interviews across all org. levels
Number of semi-structured interviews	4 interviews with: founder & CEO, Head of Finance, Head of Personnel & Academy, employee Personnel & Academy	5 interviews with: founder & CEO, founder & COO, three interviews with Head of New Brand & Business Development	3 interviews with: COO & MD, VP Finance, Senior Manager Corporate Development
Interview hours	ca. 17 interview hours	ca. 27 interview hours	ca. 31 interview hours
Workshops	1 workshop with CEO and mid-management over ca. 90 minutes	no workshops, but final presentations to the team	Four workshops with managing directors over about 7 hours
Number of documents	16 documents	31 documents	40 documents
Key informant reviews	Founder & CEO, 17.10.2018	Founder & CEO, 19.11.2018	COO & MD, 24.9.2018; Senior Manager Corp. Dev., 24.10.2018

Tab. 20: Summary of empirical evidence

The data gathered and analyzed from AlphaCo, BetaCo and DeltaCo can be back traced through the case study's consistent and auditable chain of evidence. For each of the three case studies, the raw data – interviews, internal documents and participant observations – is stored in their respective case study database, documented in their respective field diaries and data collection protocols as well as analyzed in their respective case study reports. Case study reports were reviewed, discussed in person and approved by at least one founder as key informant. This empirical evidence is the foundation for the cross case analysis on the design and use of AlphaCo, BetaCo and DeltaCo's performance management systems.

4. Analyses and Results

4.1. Performance management system design and use

4.1.1. Vision and mission

Ferreira & Otley's (2009, pp. 266-267) first question is:

“What is the vision and mission of the organization and how is this brought to the attention of managers and employees? What mechanisms, processes, and networks are used to convey the organization's overarching purposes and objectives to its members?”

Ferreira & Otley's (2009, pp. 267-268) first performance management system component includes theoretical elaborations on four themes: vision statement, mission statement, organizational values system as well as the cultural education process. In addition, the investigation into AlphaCo, BetaCo and DeltaCo identifies two interesting and relevant emergent themes: practices for making organizational culture visible and tangible as well as the value proposition to customer groups as part of the organizational culture.

Vision statement

Definition. An organization's vision “sets out the desired future state, the aspiration of the organization” and “is part of the process of setting the direction for the organization” (Ferreira & Otley, 2009, p. 268). Collins & Porras (1996, p. 73) elaborate criteria: “A true [vision statement] is clear and compelling, serves as a unifying focal point of effort, and acts as a catalyst for team spirit. It has a clear finish line, so the organization can know when it has achieved the goal; people like to shoot for finish lines. A [vision statement] engages people – it reaches out and grabs them.”

Overview. AlphaCo, BetaCo and DeltaCo use formal vision statements. Founders frequently and explicitly communicate their visions. Case studies' vision statements outline founders' ambitions of becoming relevant players or even market leaders in their respective industry and geography. Vision statements express founders' strong commitment to growth. Findings correspond to previous research (Barringer, Jones & Neubaum, 2005, p. 671; Hambrick & Crozier, 1985, p. 43, Kolvereid, 1992). Table 71 in appendix B1 provides empirical evidence from three different data sources.

Design of the vision statement. AlphaCo, BetaCo and DeltaCo formalize their visions in short sentences. These short sentences are repeated frequently by founders, middle managers and employees. In all cases, there are several versions of the vision statement, but with the same content. The focus is clearly on growth. All case studies aim at making their company a market leader. Visions are big, but achievable within a certain timeframe. Founders find it important

to make vision statements short, tangible, compelling and easy to remember. Growth visions are present in and important to all stakeholders.

Use of the vision. Vision statements are used to communicate founders' focus and commitment to growing their company. Vision statements also delineate the respective industry case studies consider themselves part of. Vision statements work as a reference point for key success factors, strategic objectives and operational targets. Vision statements are used to provide direction and motivation to organizational participants. In many cases visions serve as criteria for operational decision-making as well in the sense of 'does this decision, goal or action contribute to our vision statement?' Vision statements are also used to evaluate and convince recruiting candidates to join the organization.

All case studies use revenue as the key performance indicator for measuring progress towards the vision. At the same time revenue as the KPI is seen critical, as it is related too strongly to the current business and too less to new business ideas. Vision statements are also supposed to inspire the development of new value propositions to support further growth. Founders use their vision statements both to expand opportunity seeking and learning, for instance when visions inspire new value propositions, and to focus search and attention, for instance when visions limit the opportunity space and delineate strategic domains.

Mission statement

Definition. Ferreira & Otley (2009, 268) define that "the mission statement outlines the overriding purpose of the organization in line with the values or expectations of stakeholders [...]". Chenhall (2003, p. 136) elaborates that "[...] a mission statement aims to identify the requirements to attract and maintain shareholders, employees, and customers and to do so in ways that are socially acceptable". Baetz & Bart (1996, p. 530) find that mission statements are used to "guide or promote strategic planning, scope of business operations, a common purpose, a sense of shared expectations, leadership styles, the interests of stakeholders, employee motivation, training and development, organizational structure, performance evaluation, budgeting system, recruitment and selection, refocusing the organization during a crisis, job descriptions and job designs, types of rewards as well as allocation of resources".

Overview. AlphaCo, BetaCo and DeltaCo have mission statements. Mission statements are less developed compared to visions and value propositions; yet all case studies highlight the need to define and use clear missions. In all cases, missions, visions and value propositions are interlinked. AlphaCo's overarching mission could be described in the objective to be a "disruptive innovator" in its "inefficient" industry (strategic business plan). BetaCo's mission is congruent with their value proposition to be "your expert for real vitality" (COO). DeltaCo has a formalized mission statement to "fuel customer's growth". Findings are supported by

previous studies (Dávila, 2005, p. 243; Dávila & Foster, 2007, p. 914). Table 72 in appendix B1 provides empirical evidence from three different data sources.

Design of the mission statement. Mission statements are outlined in a statement but are still quite close to value propositions. Missions are less developed and less frequently used compared to vision statements. Visions seem to be stronger, more compelling and more tangible to stakeholders at the beginning of the growth stage. The vision and value propositions seem to be a prerequisite for finding and defining a credible mission. The mission statement design is short, engaging, inspiring and easy to remember. Mission statements outline a higher purpose and clear contribution to a fundamental human need. Missions are credible given the founders' background and intention as well as align all stakeholders. In contrast to the vision, progress towards missions can be made and measured, but missions can never be fully achieved.

Use of the mission. The missions outline the overarching purpose of their organizations and their contribution to customers or society as a whole. Missions relate to visions and value propositions, but exceed the area of business to demonstrate a larger idea. Mission statements are used to promote a common purpose among all stakeholders, to signal that founders have a big idea, to establish criteria for selection of organizational participants and to motivate employees intrinsically. The mission is also supposed to sharpen case studies' brands towards all stakeholders. Mission statements are used mainly to expand opportunity seeking.

Organizational values system

Definition. Collins & Porras (1996, p. 66) define: "Values are the essential and enduring tenets of an organization. A small set of timeless guiding principles, core values require no external justification; they have intrinsic value and importance to those inside the organization." Simons (1995, p. 167) states: "The core values of any organization are rooted in its history, traditions, and the values of its current senior managers. Core values create momentum that can either help or hinder the implementation of business strategies." Lencioni (2002, p. 6) adds that "core values are the deeply ingrained principles that guide all of a company's actions; they serve as its cultural cornerstones."

Overview. All case studies use formalized organizational values systems. AlphaCo and DeltaCo developed values systems early on and based on founders' personal values. BetaCo's founders formalize their values at the time of investigation. Organizational values appear to be one of the earliest and strongest performance management practices. The values system guides and controls required activities and desired patterns of behavior so that progress towards vision and mission is made and the value proposition is delivered reliably. This study identifies four categories of organizational values that are used for different organizational learning modes. Observations are supported by previous research (Akroyd & Kober, 2019, p. 7; Dávila, 2005,

p. 243; Dávila & Foster, 2007, p. 914; Fombrun & Wally, 1989, pp. 115-116). Table 73 in appendix B1 provides empirical evidence from three different data sources.

Design of the values systems. In all three cases, values explicitly demand learning from employees and the organization. AlphaCo’s onboarding presentation describes their culture as “a culture of learning”. BetaCo’s COO states that “startup spirit is much about learning fast”. DeltaCo asks organizational participants to be “driven by our curiosity and build an environment where we can fully unleash our talent”.

Organizational values are a few, short and often summarized in catchy sentences. Values are customized to the venture’s value propositions and vision statements. Values are deeply rooted in founders believes and can be advocated by founders both formally and informally. The design is chosen so that organizational values can decide discussions AlphaCo, BetaCo and DeltaCo are all very deliberate in designing their values systems.

Values systems are created performance dimensions, which are used for performance evaluations on the employee level. AlphaCo translate their values system into four performance criteria that are used to calculate the “Index Score” for employees in their diagnostic centers. DeltaCo translates their values system into the two performance dimensions, “performance competencies” and “potential competencies”, of their “Talent Management Matrix”. The “Talent Management Matrix” is used “to develop people both professionally and personally, while strengthening competences needed for *growing DeltaCo* successfully on all levels” (italics added).

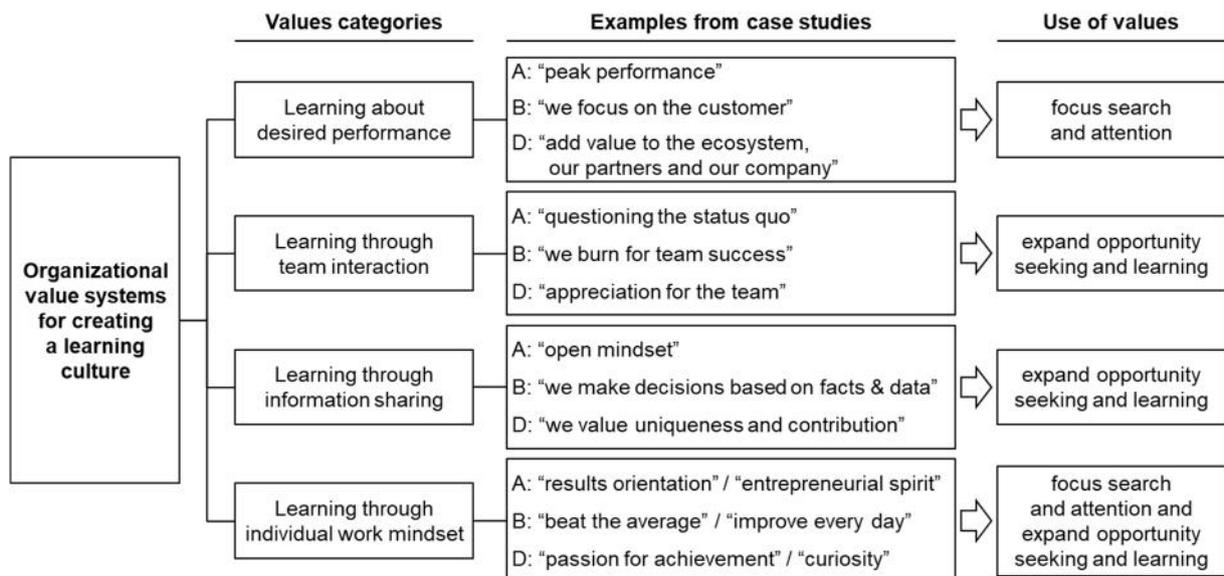


Fig. 12: Four categories of organizational values and their use

Organizational values express the learning culture of case studies. As illustrated in figure 12, AlphaCo’s, BetaCo’s and DeltaCo’s values systems can be conflated into four categories: how

to determine expected and desired performance; how organizational participants are expected to work together; how information should be shared; as well as how organizational participants are expected to work individually.

Use of organizational values. Organizational values systems are used for several purposes. Values are used as a system of criteria to make decisions. Such decisions can be large, for instance what strategies can be pursued. Such decisions can be small, for instance whether or not to send an e-mail. Furthermore, personnel decisions are made with explicit reference to organizational values. For instance, at AlphaCo and BetaCo senior managers were let go with explicit reference to organizational values. Similarly, values are used to determine who fits to the venture's culture and should be hired. In some cases, organizational values are translated into or complemented with behavioral standards to determine the boundaries of what behavior is acceptable; in this sense values take the form of rules.

Organizational values systems are used to create a learning culture. Most of case studies' values induce behavior that facilitate processes of individual and organizational learning. Interestingly, values systems emphasize both organizational learning modes. The first category outlines what performance is expected from organizational members and focuses search and attention. The second category emphasizes learning through interaction with other team members; this category appears to be directed on opportunity seeking, although there are elements of execution as well. The third category highlights learning through sharing of knowledge and information and relates to expanding opportunity seeking and learning as a team. Finally, the fourth category highlights the relevance of learning through individual work mindset; the individual mindset creates both focus of attention and facilitates opportunity seeking.

Cultural education process

Definition. Cultural education refers to “mechanisms, processes, and networks that are used to convey the organization's overarching purposes and objectives to its members” (Ferreira & Otley, 2009, pp. 266-267). Ferreira & Otley (2009, p. 268) elaborate further: “The focus of this question is to elicit information on how organizational values and purposes are established and communicated as a means of influencing the behavior of organizational participants.” Cultural education is an ongoing process. The cultural education process involves most performance management practices. Also, the cultural education process extends over the whole employee cycle. Employee cycle refers to the four phases that employees typically go through: selection, socialization, performance and exit (cf. Malmi & Brown, 2008, pp. 294-295).

Overview. AlphaCo, BetaCo and DeltaCo are deliberate in educating organizational members about their cultures. Foremost, they educate employees about vision, mission and values as well as customer groups and associated value propositions. Case studies use formal and informal practices during the cultural education process: meetings, documents such as presentations or

handbooks, workshops as well as informal practices centered on founders. Practices in use is changed over the employee cycle, as illustrated in figure 13. The analyses are supported by previous research (cf. Fombrun & Wally, 1989, pp. 115-116). Table 74 in appendix B1 provides empirical evidence from three different data sources.



Fig. 13: Cultural education over the employee cycle

Meetings. AlphaCo, BetaCo and DeltaCo use meetings and events to convey organizational culture. They use regular all-hands meetings such as BetaCo’s “First Monday Meeting” or social events such as BetaCo’s “Hüttner-Gaudi”. BetaCo’s founders use meetings and social events extensively to maintain their young startup culture. Founders also use all-hands meetings triggered by events. For instance, at AlphaCo a senior manager severely violated AlphaCo’s values; the CEO communicated this manager’s immediate layoff publicly and with explicit reference to organizational values in an ad-hoc team meeting. Another type of event are farewell events for employees leaving the company.

Documents. Organizational culture is described and transmitted in several important documents. AlphaCo, BetaCo and DeltaCo create recruiting guidelines and specific recruiting processes to find out whether a candidate fits to their organizational cultures. As soon as a new employee is selected, they are socialized using onboarding documents and presentations, employee handbooks and leadership handbooks with explicit reference to vision, mission, values as well as further key aspects of the business. Press reports on startup media platforms such as “Gründerszene” (BetaCo), “VentureBeat” (DeltaCo) or traditional media such as FOCUS Online (AlphaCo) might be an often underestimated source of documented culture might. Press reports particularly convey their growth visions to potential and actual employees.

Workshops. Culture and strategy workshops are a further formal practice. Founders conduct workshops together with middle managers and key employees to educate but also to shape and even to define organizational culture. AlphaCo’s “OGSM 2016 Workshop Series” is designed explicitly for these two purposes. Interestingly, founders combine discussing culture with discussing strategy.

Informal cultural education. Founders and executives emphasize practices for informal cultural education. Practices concentrate on personal interactions with founders, executives and occasionally with veterans. AlphaCo’s founder & CEO, for instance, uses every occasion:

“Let’s use the front door and go through the entire office and say hello to everyone. As a founder you got to show presence every single time it’s possible.” BetaCo’s founders are accessible and open during social events. DeltaCo’s CEO tries “to meet and talk to every new employee in person”. Founders and executives use informal conversations with their teams, leading by example and educating their middle managers to convey their messages about vision, mission and values. Another powerful source of cultural education are entrepreneurial stories about founders’ personalities and the early days of the venture.

Use of the cultural education process. AlphaCo, BetaCo and DeltaCo use meetings, social events, documents, workshops, informal communication as well as the overall design and use of the performance management system as practices in their extensive and ongoing cultural education process. Case studies use – or rather emphasize – different performance management practices along the employee cycle. In the selection phase, cultural criteria are important for choosing employees. In the socialization phase formal documents and presentations are used to educate new employees about leadership and organizational culture. In the performance phase the overall ‘culture-based’ performance management system further educates and also enforces organizational culture.

Cultural education through performance management system. The overall performance management system should be considered part of the cultural education process as well. On the one hand, the performance management system shapes and therefore educates about organizational culture. On the other hand, the design of these performance management practices does consider vision, mission and values. ‘Hard performance management powers’ need to fit to the rather ‘soft power’ of organizational culture. If culture and other performance management practices fit together, organizational participants get to learn a clear picture of the overall performance management system. If culture and other practices conflict, then the ‘hard’ practices – target setting, key performance measures and especially rewarding – are likely stronger, prevail and contradict the intended organizational culture.

Emergent theme – visibility of organizational culture

Definition. Vision, mission, values and value propositions are information-based performance management practices (Simons, 1995, p. 36). Focusing on information-based practices is consistent with Simons’ (1995, p. 5) and Ferreira & Otley’s (2009, p. 264) definitions. However, some practices are tangible and visible. Merchant & Van der Stede (2007, p. 76) briefly mention non-information-based, physical practices when writing about action controls: “Most companies use multiple forms of *physical constraints*, including locks on desks, computer passwords, and limits on access to areas where valuable inventories and sensitive information are kept.”

Schein (2008, pp. 25-26) refers to artefacts as the visible level of culture: “Artifacts include the visible products of the group, such as the architecture of its physical environment; its language; its technology and products; its artistic creations; its style, as embodied in clothing, manners of address, emotional displays, and myths and stories told about the organization; its published lists of values; its observable rituals and ceremonies; and so on.” This study identifies eight categories of tangible, visible company culture: places, rituals, events, benefits, symbols, stories, languages and images (cf. Schein, 2008, pp. 25-26).

Overview. AlphaCo, BetaCo and DeltaCo use practices to make their culture tangible and visible to organizational participants. The basis for these visibility-of-culture practices are information-based practices – vision, mission, values as well as value propositions. In many cases, practices make organizational culture not only visible, but also give them physical representations. Probably the most relevant practice is the design of the work environment, as analyzed in chapter 4.1.3. Akroyd & Kober (2019, p. 9) have made similar observations.

Designing visibility of culture. BetaCo and DeltaCo have their employees design wallpapers about organizational values and then hang them on the wall making them visible to everyone. BetaCo gave out “BetaCo branded hoodies”; employees then had the idea to celebrate the “BetaCo Hoodie Friday” meaning that the whole company is wearing their hoodies to work on selected Fridays. BetaCo uses sponsored sport challenges and food tasting events to promote their health and fitness product (and value proposition).

DeltaCo has a ‘bring your dog policy’, meaning that employees are allowed to bring their dogs to the office. Dogs can be a symbol of a welcoming, sustainable, metropolitan organizational culture. Dogs embody that work and private life are not distinct categories but blur. Dogs give employees an entertaining break now and then. For some employees the possibility of bringing their dogs to their office is a decision criterion to accept a job offer. Some startups even consider dogs as part of the team and name them for example “Chief Dog Officer” on their websites.

When AlphaCo moved to an exclusive new office, founders gave a big party. This party was to celebrate success – but even more importantly to signal success to organizational stakeholders. The design of AlphaCo’s new office was deliberately to demonstrate maturity and professionalism. BetaCo has several shelves with their products presented in the office. DeltaCo used its office to emphasize its international character. DeltaCo’s meeting rooms are named after cities in which DeltaCo has international sales offices. Also, DeltaCo’s open office spaces have screens on their walls that show what is going on in the other international offices.

The significant role of the design of company logos is also worth mentioning. Often, startups seem to design their logos before they actually have a real business idea. Similarly, a re-branding initiative often starts with the re-design logo as a symbol of newness. Founders use the logo to make an idea tangible.

Use of visibility of culture. Founders use non-information-based, physical practices to make organizational culture visible and tangible to organizational members and also to themselves. Founders use visibility-of-culture practices to teach employees about their venture's culture. Employees use such practices to learn about organizational culture. Employees want to find ways to express organizational culture. There are many more examples how case studies promote and sometimes enforce organizational culture. Some of these practices overlap with the cultural education process, for example social events. Employees and other stakeholders do respond to these practices, exactly because they are visible and tangible.

Grounded in these observations, this study suggests going beyond Simons' (1995, p. 5) and Ferreira & Otley's (2009, p. 264) definitions and extend Merchant & Van der Stede's (2007, pp 76-77) idea of physical controls. Case studies' key question is what practices can help them with managing performance and grow. Visibility-of-culture practices reinforce other formal performance management practices and should be included in the broader concept of performance management.

Emergent theme – value propositions and organizational culture

Definition. Chesbrough & Rosenbloom (2002, p. 533) define the value proposition as “the value created for users by the offering based on the technology”. Osterwalder, Pigneur, Bernarda & Smith (2014, p. 6) define: “The value proposition describes the benefits customers can expect from [a company's] products and services”. Gassmann, Frankenberger & Sauer (2016, p. 20) define that the value proposition “describes what is offered to the customer, or put differently, what the customer values”.

Overview. AlphaCo, BetaCo and DeltaCo use their value propositions as a formal performance management practice. Even more the value propositions are part of case studies' organizational cultures. Value proposition as a performance management practice and as part of culture does not refer to specific value propositions. Value propositions as a practice refers to organizational efforts to constantly delivery to customers as well as continuous improvement and even the change of value propositions. For AlphaCo, BetaCo and DeltaCo customer focus and value proposition are more than a pure business concept for convincing customers or a matter of strategic positioning. AlphaCo, BetaCo and DeltaCo incorporate their customers – existing and potential ones – and the question of what they value deeply into their organizational cultures. Table 21 provides examples for case studies' value propositions.

Design of value propositions. AlphaCo's value proposition of “diagnostic imaging as a service” is part of a more fundamental philosophy. The founder and CEO states: “Our philosophy can be described as a general concentration on core competences.” AlphaCo's concept allows radiologists to focus on evaluating diagnostic images and not become business process experts as well. AlphaCo's founders follow this principle strongly in their management approach.

	AlphaCo	BetaCo	DeltaCo
Slogans	"Diagnostic imaging as a service."	"Your expert for real vitality."	"Data driven app marketing."
Value propositions	"Accessibility to high-end diagnostic imaging modalities via pay-per-use models without owning them; Lower cost per examination in comparison to an own low utilized medical equipment; Reduction in workload due to concentration in medicine only; accessibility to AlphaCo centers around the clock; High service and quality focus of the centers and access to high-end diagnostic equipment." (Value propositions in Strategic business plan, excerpt)	"Products that really do good: integration of external brands, creation of own brands; Content that offers real knowledge: in-house content creation, blogger cooperation network, cooperation with nutritionists, integration of advisory programs, mobile app integrations; Simplicity - finding without searching: curation by experts, bloggers, stars, data-driven personalization." (Brand analysis, excerpt)	"Significant investment in technology and R&D; Access to 1st party data which allows for LTV optimisation of campaigns; Best in-class client services to increase spend and retention of advertisers; Leverage media buying power to access best inventory at lowest cost." (Strategic business plan, excerpt)

Tab. 21: Examples for AlphaCo, BetaCo and DeltaCo's value proposition statements

BetaCo advances their initial value proposition to be “your expert for real vitality” to a mission statement. They incorporate “the customer” explicitly into their values system: “customer happiness - we focus on the customer”. BetaCo also uses time and financial means to integrate the value proposition of healthy nutrition and fitness into organizational routines such as sports challenges, nutrition challenges and food tastings.

DeltaCo's value proposition “data driven app marketing” links back well into their mission statement to “fuel our customers' growth by connecting their products to the right audience globally through technology, data and services”. At its heart is data and technology. DeltaCo's value proposition is reflected in DeltaCo's values system. DeltaCo also has a particular interesting way of making its purpose clear to everyone: Their website includes a graph counting the apps in millions that are installed through DeltaCo's tech platform.

Use of value propositions. Ventures have to learn a lot about their customers, about their needs, wishes, desires – about “customers' jobs, pains, and gains” (Osterwalder, Pigneur, Bernarda & Smith, 2014, p. 22). The value proposition can be considered as a formalized performance management practice, which codifies and communicates learning of the “reasons why customers turn to one company over another” (Osterwalder & Pigneur, 2010, p. 22). Case studies use value proposition statements as a practice to ensure that organizational members stay focused on customers' current needs and that they innovate for customers' future needs.

Value proposition and vision, mission, values. Startups usually start out with a value proposition, and do not formulate a vision or mission. The value proposition becomes one of the first practices of organizational culture. Though not entirely yet to some extent, the values system is built around the value proposition and outlines a certain behavior that is required to learn about the value proposition.

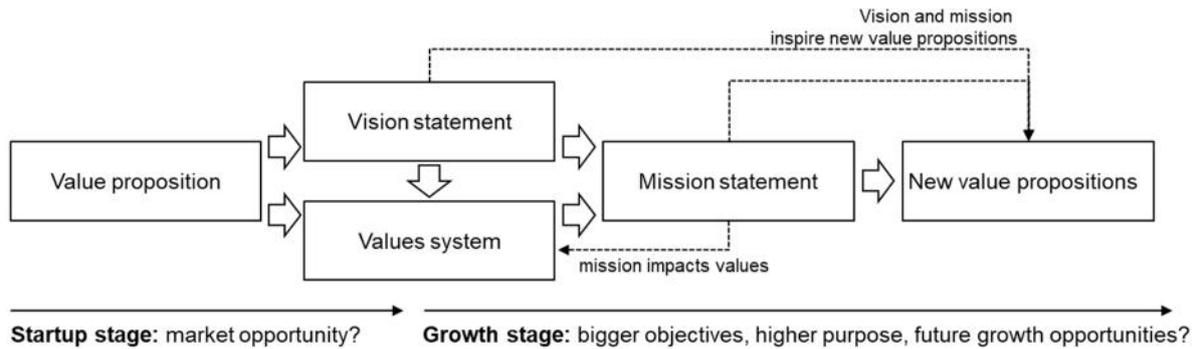


Fig. 14: Relationships between value proposition and vision, mission and values

A growth vision is created as the value proposition gains business traction. The venture conceives itself as part of a certain industry. As growth continues the need for an overarching idea arises. Value propositions and visions are extended to a bigger purpose. Formal mission statements are crafted. As the venture continues to grow, vision and mission statements together with the values system then inspire new value propositions. These relationships are outlined in figure 14.

4.1.2. Key success factors

Ferreira & Otley's (2009, p. 267) second question is:

“What are the key factors that are believed to be central to the organization’s overall future success and how are they brought to the attention of managers and employees?”

Ferreira & Otley's (2009, pp. 268-269) second performance management system component includes theoretical elaborations on key success factors themselves as well as on their communication.

Definition. Ferreira & Otley (2009, pp. 268-269) define their concept of key success factors as follows: “The key success factors are those activities, attributes, competencies, and capabilities that are seen as critical pre-requisites for the success of an organization in its industry at a certain point of time. They need to be achieved if the organization is to progress towards achieving its vision and their identification and monitoring are essential for the fulfilment of strategic goals.”

Overview. AlphaCo, BetaCo and DeltaCo agree consistently on three main categories of key success factors. The financial key success factor demands revenue growth. The organizational key success factor requires growth and professionalization of the organization. The product key success factor requires development of product and technology. The first two key success factor correspond to the most frequently used growth indicators in entrepreneurship research (cf. Gilbert, McDougall & Audretsch, 2006, p. 929; Shepherd & Wiklund, 2009, p. 108). Table 75 in appendix B2 provides empirical evidence from three different data sources.

Design of key success factors. AlphaCo, BetaCo and DeltaCo agree consistently on financial, organizational and product-related key success factors (figure 15). First, case studies define a financial key success factor: revenue growth while maintaining a certain – potentially negative – level of profitability and cash flow. Second, case studies define an organizational key success factor: growing in headcount, establishing the middle management and professionalizing the organization. Third, case studies define a product key success factor: improving the current product and technology as well as searching for new products and technologies.

Case studies consider additional key success factors, which correspond to their business models and/or strategy. AlphaCo’s business model innovation is to increase efficiency in the diagnostic imaging industry. Thus, founders add the key success factor of managing their organization’s processual knowledge; for this purpose, they establish a special organizational function. BetaCo’s founders want to achieve their series C in the near future; thus, founders emphasize the key success factor of maintaining a good relationship to their strategic investor next to delivering on revenue growth. In line with the product key success factor, DeltaCo intends to keep up with its dynamic business environment and thus emphasizes the development of new products as a particular key success factor.



Fig. 15: The three main categories of key success factors

Communication of key success factors. Founders communicate aspects of key success factors to managers and employees by using most of the practices that they use for cultural education. In all case studies, team meetings play an important role, for instance BetaCo’s “First Monday Meeting”. AlphaCo and DeltaCo use their strategic management processes to discuss key success factors (AlphaCo’s “OGSM 2016 Workshop Series”, “DeltaCo Strategy Week”). Further, strategic objectives, key performance measures and targets are used to progress towards key success factors. Founders also use informal interactions and feedback to convey key success factors. Generally, founders repeat key success factors themselves or aspects of key success factors frequently.

Use of key success factors. AlphaCo, BetaCo and DeltaCo use their key success factors to communicate important objectives of their business model and strategy. The financial key success factor focuses search and attention on delivering known value propositions reliably to known customers. The product key success factor focuses attention on delivering reliably and improving incrementally already known value propositions; yet the product key success factor also facilitates seeking for and learning about new value propositions.

The organizational key success factor mitigates the tension between financial and product key success factors. The organizational key success factor is about focusing attention on known value proposition and create a value chain that delivers reliably; at the same time the organizational key success factor requires to build an organization that is able to learn about new value propositions. Growing and professionalizing the organization is a way to balance current growth in revenues and development of new products.

4.1.3. Organization structure

Ferreira & Otley's (2009, p. 267) third question is:

“What is the organization structure and what impact does it have on the design and use of performance management systems? How does it influence and how is it influenced by the strategic management process?”

Ferreira & Otley's (2009, pp. 269-270) third performance management system component includes theoretical elaborations on four themes: organizational design, founders' roles and responsibilities, middle managers' roles and responsibilities as well as rules procedures and policies. Furthermore, Ferreira & Otley (2009, pp. 269-270) discuss the impact of organization structure on other performance management system components as well as the interaction between structure and strategy. In addition, the investigation into AlphaCo, BetaCo and DeltaCo identifies four interesting and relevant emergent themes: growth supporting functions (which include the human resources function, the finance and business intelligence functions and business specific growth supporting functions) as well as the office design.

Organizational design

Definition. Chenhall (2003, p. 144) defines: “Organizational structure is about the formal specification of different roles for organizational members, or tasks for groups, to ensure that the activities of the organization are carried out.” Malmi & Brown (2008, p. 293) state that “organizational design can be an important control device, as by using a particular structural type an organization can encourage certain types of contact and relationships”.

Ferreira & Otley (2009, p. 269) elaborate that organizational design include the functional, the multidivisional, the holding company, the matrix, the transnational, the team-based, and the project-based organization. Centralization or decentralization of decision-making authority as

well as centralized vs. decentralized functions are further options for organizational design (Ferreira & Otley, 2009, p. 269).

Overview. AlphaCo, BetaCo and DeltaCo structure their organizations in functions with decision-making authority being quite centralized on founders. Within this functional organization roles and responsibilities are formalized, and job descriptions, titles and positions are introduced. Case studies have typically a “three-layer hierarchy” (Colombo & Grilli, 2013, p. 391). Some of case studies’ functions specialize more in executing pre-defined activities, while other functions are more dedicated to searching new activities. Case studies also design growth supporting functions. These observations on organizational design find support in the life cycle literature (Churchill & Lewis, 1983, p. 38; Greiner, 1972, p. 6; Kazanjian & Drazin, 1990, p. 141; Miller & Friesen, 1984, p. 1162). Observations on support functions also echo previous findings (Churchill & Lewis, 1983, p. 34; Dávila & Foster, 2005, 2007; Dávila, Foster & Li, 2009; Kazanjian & Drazin, 1990, p. 141; Miller & Friesen, 1984, p. 1171; Von Krogh & Cusumano, 2001). Table 76 in appendix B3 provides empirical evidence.

Functional organizational design. Figures 16, 17 and 18 illustrate the functional organization of case studies. Consistently, all case studies divide their organization into three essential parts: (1) marketing and sales, (2) operations and support functions, and (3) product development and technology. These three parts correspond to the three key success factors (financial, organizational and product). Each part is headed by a founder or an executive. Each organizational part consists of several functions with associated roles and responsibilities.

The first hierarchical layer are founders and C-level executives. The difference between a ‘C-level executive’ and a middle manager is that an executive belongs to the top management team and is steering the organization together with founders. Typically, C-level executives report to the CEO or one of the founders. In many cases, a C-level executive is also a managing director. At AlphaCo and BetaCo, the C-level consists of founders only. At AlphaCo, all three founders are managing directors. BetaCo has a full-time CEO and managing director as well as a Co-CEO. Both are founders of the company. The Co-CEO is also a partner of BetaCo’s early stage venture capital investor. At DeltaCo the CEO is DeltaCo’s founder. DeltaCo’s COO is the founder of a company that merged with DeltaCo and he then became the COO of the combined organization. DeltaCo’s CRO is a hired C-level executive. DeltaCo’s CEO, COO and CRO are all managing directors.

The second hierarchical layer is the middle management. Functions are either headed by a founder or a C-level executive directly or by a middle manager. Case studies put significant effort into building up a specialized and experienced middle management for their growing organization. The third layer are employees. In some cases, middle managers delegate authority to team leads when the number of employees becomes too large. These team leads’ managerial

authority usually remains limited. Occasionally case studies initiate temporary cross-functional project teams to drive strategic initiatives (e.g. BetaCo’s “tag teams”).

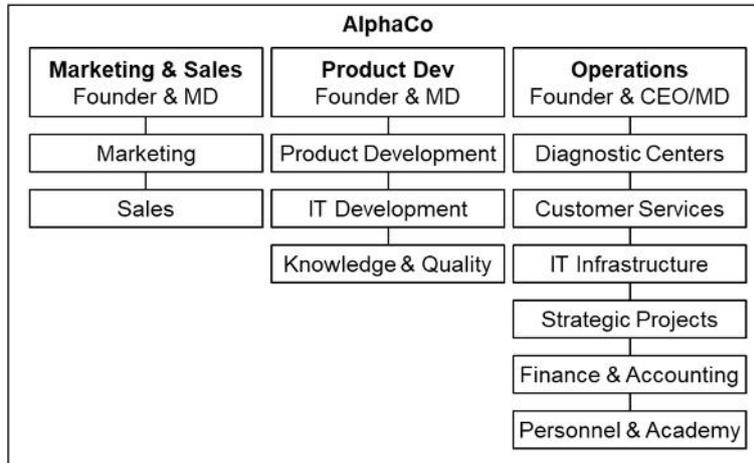


Fig. 16: AlphaCo’s organizational design (adapted from internal documents)

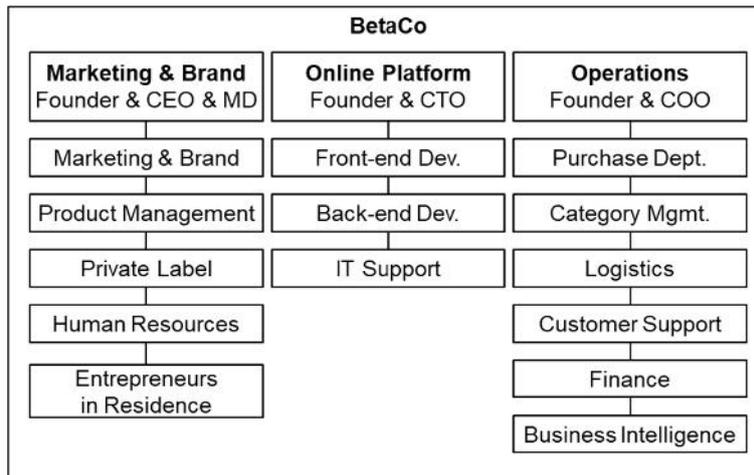


Fig. 17: BetaCo’s organizational design excluding Co-CEO (adapted from internal documents)

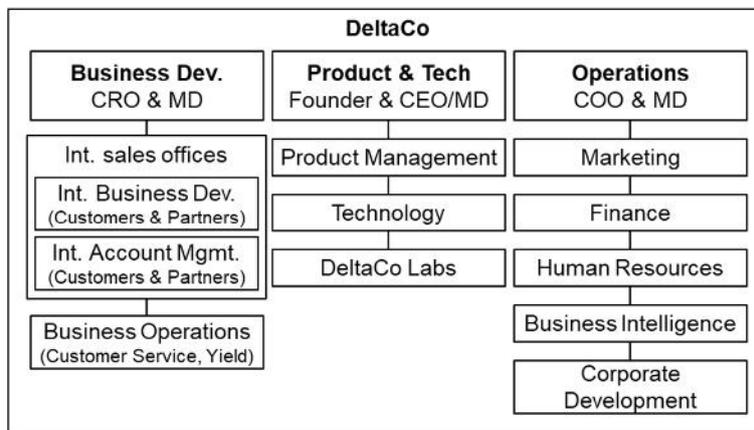


Fig. 18: DeltaCo’s organizational design (adapted from internal documents)

Centralized vs. decentralized functions. Decision-making authority is generally rather centralized on founders and executives in all case studies. At the same time, all case studies are in the process of delegating more authority to mid-managers. AlphaCo delegates much decision-making authority to its experienced Head of Finance, Head of Personnel & Academy, and Head of Strategic Projects. BetaCo delegates to authority to its newly hired, experienced CFO. DeltaCo delegates business-related authority to the managing directors of their international sales office.

AlphaCo has a central-decentral organizational structure. AlphaCo's decentralized functions are the diagnostic centers ("Diagnostic Centers"), which create the value to all three customer groups. Currently AlphaCo's diagnostic imaging centers are cost centers "to collect learnings about interfaces, infrastructure and processes" (CEO), but shall become profit centers at some point. BetaCo has a centralized organization with one office and no decentralized units.

DeltaCo has a central-decentral organizational structure. DeltaCo's decentralized functions are offices in international cities for business development and account management ("International Business Development" and "International Account Management"). International sales offices are currently managed as revenue centers to foster learning about customers, but are supposed to become profit centers soon.

Growth supporting functions. AlphaCo, BetaCo and DeltaCo take particular care of establishing and designing support functions. Support functions are not part of the primary value chain. Porter (1991, p. 102) defines these functions as "support activities". Due to their impact on learning and growth these support functions are termed 'growth supporting functions'. Growth supporting functions professionalize in taking care of organizational participants (human resources function, see below) in supplying the organization with financial and non-financial information (finance and business intelligence functions, see below) as well as facilitating organizational learning in critical aspects of case studies' business models (business specific growth supporting functions, see below).

Use of functions. AlphaCo, BetaCo and DeltaCo use their organizational designs to translate their business models and strategies into a functional organizational structure. AlphaCo uses its diagnostic centers to define organizational functions that execute pre-defined and largely standardized activities and processes, while its headquarters is mainly organized to improve existing processes and be creative about new activities. BetaCo uses functions related to marketing and brand to learn about existing and new customers, while functions related to operations are executing more standardized processes. DeltaCo's international sales offices as well as the headquarters' business operations are mainly executing processes, while the headquarters is being innovative.

Roles and responsibilities – founders and executives

Definition. Ferreira & Otley (2009, p. 269) define: “Organization structure determines the responsibilities and accountabilities of organizational participants; it equally defines the activities that individuals with specific roles should not pay attention to.” Founders’ competences, responsibilities and accountabilities are of utmost relevance to the performance of entrepreneurial growth companies.

The attributes and characteristics of founders and the founder team as well as founder team composition have been investigated in depth in the entrepreneurship literature (Gilbert, McDougall, Audretsch, 2006, pp. 930-932). Teams of three or four founders have been found to outperform smaller teams or even single founder in terms of sales growth and venture survival (Eisenhardt & Schoonhoven, 1990, p. 510; Song, Podoyntsyna, van der Bij & Halman, 2008, p. 13). The size of founder teams “is important because it enables the firm to distribute responsibility across a greater number of individuals”. Founder teams are consistently the most important factors for venture capitalists to invest (Gompers, Gornall, Kaplan & Strebulaev, 2016, p. 19). Founder teams with diverse yet complementary capabilities that assume and resolve conflicts result in improved strategic decisions and more learning opportunities (Colombo & Grilli, 2005, p. 795; Eisenhardt, 2013, pp. 808-810). Overall, founders play a pivotal role for the growth of a new venture (Colombo & Grilli, 2005; Gimmon & Levie, 2010).

Overview. AlphaCo, BetaCo and DeltaCo’s founder and executive teams correspond to the attributes and characteristics identified as relevant to new venture growth in the entrepreneurship literature. AlphaCo is led by a three-person founder team, who have with business and technical backgrounds as well as entrepreneurial experience. BetaCo is led by a four person founder team, who have business and technical backgrounds; CEO and Co-CEO are serial entrepreneurs. DeltaCo is led by the founder & CEO, who is a serial entrepreneur, the COO, who was the founder of a tech startup that DeltaCo acquired, and the CRO, who is a hired C-level executive with extensive management and industry experience. Founders typically assume the following roles: sales founder, operations founder and product founder. Founders’ roles and responsibilities correspond to key success factors. Findings are supported by previous studies (Akroyd & Kober, 2019; Mueller, Volery & von Siemens, 2012; Volery, Mueller & von Siemens 2015; also see above). Table 77 in appendix B3 provides empirical evidence from three different data sources.

Design of founder roles. AlphaCo’s business requires three essential organizational parts: marketing and sales, operations, and the technology platform. AlphaCo’s three-person founder team and their competences work exactly into these roles and responsibilities. One founder is responsible for marketing and sales, one founder is responsible for operations, and one founder

is responsible for the technology platform. The CEO, who is responsible for operations, is also responsible for support functions.

BetaCo’s business requires three essential organizational parts: marketing and brand, operations, and the technology behind the online platform. BetaCo’s CEO is responsible for online marketing, content marketing and the product. The COO is responsible for all internal processes, i.e. purchasing, logistics, and customer service. The CEO and the COO share the responsibility for support functions. The CTO is responsible for the technology behind the online platform. The fourth founder, the Co-CEO, is responsible for strategy, investor relations and strategic initiatives; occasionally he also takes care of financial topics and strategic recruitment.

DeltaCo’s business model requires three essential organizational parts: business development, operations as well as product development and technology. The CRO is responsible for business development. The COO is responsible for operations and support functions. The CEO is responsible for product development and technology.

Case studies are consistent in designing these three founder roles. The first role is to learn about the external market environment and to grow the business from a sales point of view. Since this role is mostly related to sales growth the role is termed the sales founder. The second role is to learn about internal activities and processes to deliver the value proposition to customers. This role is also responsible for designing the performance management system. Since this role is focused on internal processes and operations, the role is termed the operations founder. The third role is to develop the product and learn about technology. Since this role uses technology to develop the product, the role is termed the product founder.

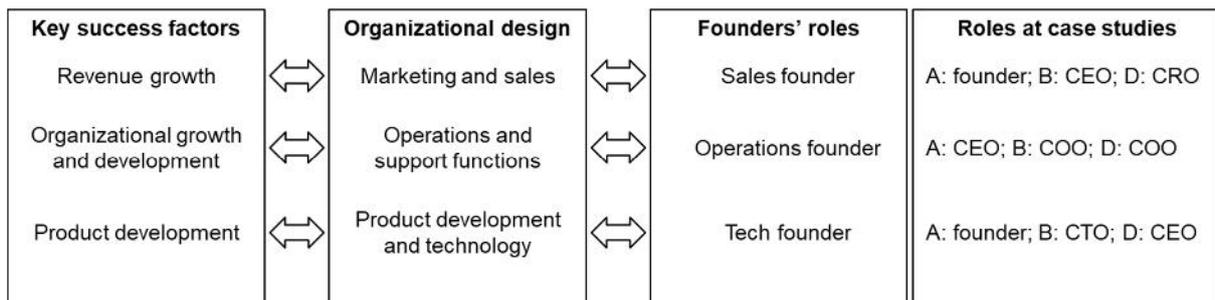


Fig. 19: Figure: Relationship between key success factors, organizational design and founders' roles

Use of the three founder roles. A relationship – or even a ‘symmetry’ – can be observed between key success factors, organizational design and founders’ roles (see figure 19). AlphaCo, BetaCo and DeltaCo use organizational design and the three founders’ roles to ensure that the three key success factors are met. Further entrepreneurial growth companies use organizational design and particularly founders’ roles to mitigate the tensions created by key success factors. This tension is between reliably delivering on existing value propositions for known customer groups

and searching for new value propositions in order to ensure future growth. Essentially this is a tension between focusing attention on known business growth opportunities and expanding organizational search for new growth opportunities.

Roles and responsibilities – middle management

Definition. Startup organizations usually start with a “two-layer corporate hierarchy” (Colombo & Grilli, 2013, p. 391) consisting the founders and early employees. As a venture grows, a “management by personality” (Dávila, Foster & Jia, 2010, p. 79) approach reaches its limits. Information to be processed (Dávila, 2005, p. 226) and span of control (Dalton, Todor, Spendolini, Fielding & Porter, 1980, p. 54) become too large. In the growth stage, a third hierarchy layer is added between founders and employees, which is the middle management (Colombo & Grilli, 2013, p. 391). Middle managers report into founders or C-level executives and lead a function.

Overview. AlphaCo, BetaCo and DeltaCo emphasize the importance of introducing a professional and experienced middle management. At all case studies, the middle management is one of the most pressing topics. The progress of establishing a middle management is a significant topic in communications to investors and employees. Hiring capable middle managers is probably the most important measure to work towards the organizational key success factor of growing and professionalizing the company. Profiles of such middle managers are challenging. Middle managers for growth supporting functions are recruited early. Hires are usually from outside the company; internal promotions are rather rare. Findings echo previous studies (Churchill & Lewis, 1983, pp. 34, 38, 40, 48; Greiner, 1972, pp. 6-7; Kazanjian & Drazin, 1990, p. 141; Miller & Friesen, 1984, p. 1163). Table 78 in appendix B3 provides empirical evidence from three different data sources.

Design of middle management roles. AlphaCo has about 90 employees and has been focusing on establishing a middle management early on. For this reason, their middle management team is quite complete. AlphaCo has middle managers for the following departments: IT Development, Knowledge & Quality, Diagnostic Centers, Customer Service, Strategic Projects, IT Infrastructure, Finance & Accounting, and Personnel & Academy. The only organizational part, where middle managers are missing, is marketing and sales. This is due to AlphaCo’s business-to-business sales model requiring interaction with managing directors. Except of the Head of Knowledge & Quality, who was promoted internally, middle managers are external hires. AlphaCo’s founders put emphasis on recruiting senior managers especially in Finance & Accounting as well as Personnel & Academy.

BetaCo has about 40 employees and starts establishing a middle management. BetaCo’s founders tested their business idea with many young employees first and did not start with senior hires (an “army of interns” as per the CFO). As BetaCo secured their series B with a big

strategic investor, they now have reputation and financial resources to build up a middle management. BetaCo has internally promoted several young, promising employees to be team leads, and has hired young managers for the Product Management, Private Label and Brand functions. Yet the first senior hire to the middle management is the CFO; the next senior hire is the Chief Marketing Officer. A further hired manager is the interim Head of Business Intelligence.

DeltaCo has about 200 employees and a well-established middle management. The functions illustrated in figure 18 are all headed by a middle manager. Most middle managers are external hires. Middle managers all have a similar profile: they are almost all in their 30s, all are experienced, but still need to make a career. The managing directors of the international sales offices have a particular middle management role. They are responsible for business development and key account management. As per its size of 200 employees, DeltaCo also uses team leads below middle managers.

Use of middle management roles. Middle managers for entrepreneurial growth companies have challenging profiles. Often, such middle managers need to interpret their roles, switch and change their roles, take over interim roles in other functions and adapt quickly to changing circumstances. BetaCo's CEO characterizes mid-managers by the ability of learning fast and balancing strategic thinking and operational execution: "We need entrepreneurs – people with drive, fast learners, people who can think strategically and execute at the same time."

Middle managers do not only have to bring in professional knowledge and managerial experience. They even more need to fit to a culture of learning. Entrepreneurial growth companies would mostly prefer this cultural fit over competence. Middle managers need to be able to adapt to the tension between delivering on existing value proposition for existing customers and creating new ones. Similar to founders' roles, middle management roles are used to balance organizational focus of attention and expand of opportunity seeking.

Rules, procedures and policies

Definitions. Rules, procedures and policies are forms of action controls (Malmi & Brown, 2008, p. 294). Burns & Scapens (2000, p. 6) define that "rules can be defined as the formally recognized way in which 'things should be done'" and "rules are necessary to co-ordinate and give coherence to the actions of groups of individuals". Procedures are pre-defined lists of actions that are brought in a processual sequence. Policies are associated administrative modes of communication of rules and procedures (Merchant & Van der Stede, 2007, p. 78).

Overview. AlphaCo applies policies extensively and particularly for their diagnostic centers; designs range from strict policies to flexible rules. BetaCo, as the smallest case study, does not use many rules yet. BetaCo and DeltaCo are both critical towards too strict rules and acknowledge their relevance for growth. All case studies consider rules, procedures and policies

as necessary to increase the reliability of current processes and as a way to codify learnings about their business. The design of rules, procedures and policies is typically simple, short, specific; they both enable fast decisions and allow founders to keep control. These findings reflect insights by Eisenhardt and her colleagues on the importance of rules in entrepreneurial firms (Bingham & Eisenhardt, 2011; Bingham, Eisenhardt & Furr, 2007; Eisenhardt & Sull, 2001; Sull & Eisenhardt, 2012). Life cycle theory supports these observations as well (Greiner, 1972, p. 6; Miller & Friesen, 1984, p. 1162). Table 79 in appendix B3 provides empirical evidence from three different data sources.

Design of rules, procedures and policies. AlphaCo's founders use rules, procedures and policies intensely to manage performance. This is a consequence of operating in the health care industry, their business model focused on process efficiency, and their organizational culture. Rules and procedures are reviewed by different groups within the organization, and then formalized in policies. Policies are audited by the "Department for Knowledge & Quality", formally approved by founders in the bi-weekly meeting "Quality Circle", officially communicated to the organization by E-Mail and filed in AlphaCo's knowledge management system. AlphaCo's founders design rules, procedures and policies differently for diagnostic centers and for the headquarters. In their diagnostic centers they apply standardized procedures and enforce them with policies. In the headquarters, they rather use flexible, open, often semi-informal rules.

BetaCo is the youngest and smallest in size of case studies. BetaCo was not yet in a position to craft many rules, procedures and policies. Founders still have difficulties making learnings explicit. Founders and especially the CEO, however, consider it a sign of organizational progress to establish more rules, procedures and policies. BetaCo's CEO states: "We need more rules to avoid wasting time." BetaCo intends to develop from "the startup mode" (exploration) to a more execution-oriented mode (exploitation).

DeltaCo's COO expresses some distrust towards formalized rules, procedures and policies. He is concerned that too many rules might stifle decision-making, motivation and learning. However, the COO also identifies the need to increase formality in rules and procedures, and to use policies more intensely as the organization grows. One reason is to avoid the exchange information on matters that can be standardized by rules, procedures and policies. A second reason is to avoid "centrifugal forces" (CEO) that DeltaCo might experience due to their rapid growth in international offices around the globe. A third and related reason is that DeltaCo want to leverage the coordinating effect of rules and procedures.

Expense policies in action projects. Expense policies are a central practice to illustrate how rules, procedures and policies are designed. Expense policies, or spending and transaction policies, regulate how organizational members can use financial resources on behalf of the company. In startups financial decisions usually go through the founders. As the organization

grows the number of financial transactions accelerates. Middle managers and key employees are increasingly entrusted with financial decisions, yet founders need to remain in control.

All case studies asked for expense policies during their action projects. All case studies had the same requirements for the design: they need to be simple, short, specific, enable fast decentral decisions, and allow founders as much control as possible. Expense policies were shy of just two pages. Further, expense policies also have to be in line with organizational values and place trust in employees. The core of these expense policies are a few approval thresholds that are easy to follow, provide clear direction, but are still allow for adaptation to changing circumstances.

Use of rules. AlphaCo, BetaCo and DeltaCo use rules, procedures and policies to enable and codify learning about the growth company's business model. Rules, procedures and policies – provided they are purposefully designed – enable learning by combining general guidance and previous knowledge with the possibility of adapting to particular circumstances. Rules, procedures and policies are frequently iterated at all case studies (see figure 20). This process of iterating rules can only take place as soon as rules are written down and actually tested.

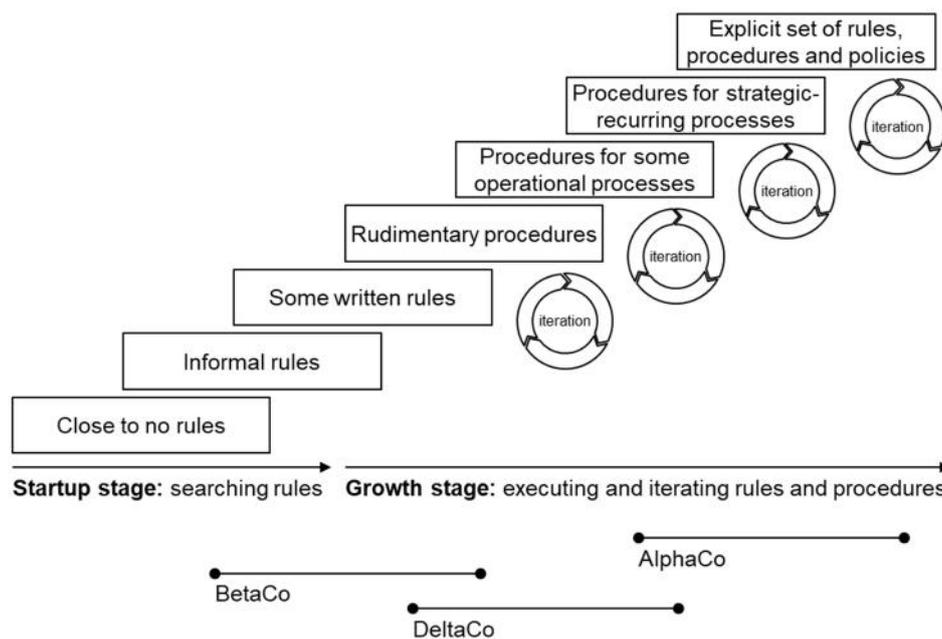


Fig. 20: The evolution of rules, policies and procedures at AlphaCo, BetaCo and DeltaCo

Rules, procedures and policies appear to be a good indicator of how much a venture has learnt about its business – whether entrepreneurial growth companies are still searching for a new business idea, or are already executing on a business model. As long as a startup searches for a business, specifying rules, procedures and policies is difficult and potentially slow down the learning process. In the growth stage, when customers start paying for the startup's value proposition and the organization has to deliver on a reliable basis, then organizing recurring

activities in predictable processes becomes necessary. By their very nature, rules, procedures and policies are performance management practices that are usually used to focus search and attention. However, the possibility and moment of changing from one rule to a better one helps to expand opportunity seeking and learning.

Impact of organization structure

Definition. Ferreira & Otley's (2009, p. 267) also ask "[...] what impact does [the organization structure] have on the design and use of performance management systems?" They (2009, p. 269) highlight that organization structure is "at a minimum a constraint on performance management systems design and use, and in the longer-term a necessary issue that requires specific consideration as organizations grow and develop."

This chapter focuses on key performance measures, target setting, performance evaluation, reward systems, and information flows, systems and networks. The analyses are rather brief, as these performance management system components are discussed in later chapters. The impact of organization structure on vision and mission as well as key success factors is not discussed, since both are quite stable prior to organizational growth and the adoption of a functional structure. The interaction between structure and strategy will be discussed in the next chapter.

Overview. AlphaCo, BetaCo and DeltaCo's key success factors, founders' roles as well as functional organizational designs and middle management make the adoption and re-design of performance management practices necessary (figure 21). Functional specialization and delegation to middle managers enable and require the introduction of performance measures, target setting, performance evaluation, reward systems as well as practices for information flows, systems and networks. Organization structure and key performance measures should be aligned; a bi-directional relationships can be identified. In contrast, organizational structure impacts target setting, performance evaluation, reward systems, and information flows, systems and networks rather uni-directional. Findings are supported by previous studies (Cardinal, Sitkin & Long, 2004, pp. 415-416; Dávila & Foster, 2005, 2007; Miller & Friesen, 1984, pp. 1163, 1172). Table 80 in appendix B3 compares findings from case studies.

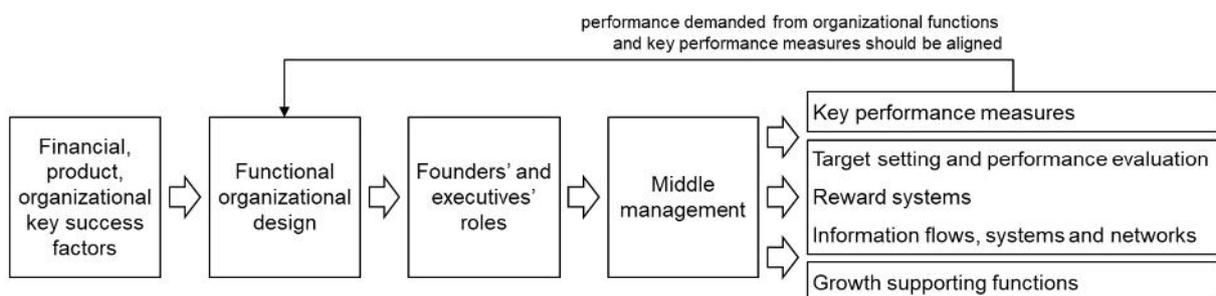


Fig. 21: Interactions of organization structure and other performance management system components

Bi-directional relationship with key performance measures. Organization structure and key performance measures interact with each other. The relationship between organization structure and key performance measures appears to be bi-directional. A business model implies predictable performance in certain dimensions. These business model dimensions should usually correspond to an organizational design and associated functional specialization. The performance demanded in these dimensions is quantified in key performance indicators. This study proposes that organizational learning is facilitated, when all these three perspectives – business model dimensions, organizational design and key performance measures – are integrated and aligned (Engelhardt, Gassmann & Möller, 2019).

Organization structure and KPI System at BetaCo. The action project with BetaCo supports this analysis (see chapter 4.1.5). Due to organizational growth as well as frequent interactions with newly hired managers, BetaCo's CEO's meeting schedule became unbearably full. Out of this reason he initiated the action project to develop a strategic performance measurement system. Before the project, BetaCo's team was measuring many different performance indicators. The whole team was constantly analyzing all indicators, but no one was really accountable for them. Performance indicators were measured, but not really managed – and it was difficult to learn from performance measurement. Each team member's contribution to BetaCo's business model was investigated and the performance measures in use were analyzed. From there the strategic performance measurement system was developed. Looking at the "BetaCo Strategic KPI System", the gaps and inconsistencies in the organizational design could be discovered. The project determined the organization by determining BetaCo's 'business model KPIs'.

Impact on target setting and performance evaluation. The organization structure, requires and enables the introduction of formal processes for target setting and performance evaluation. This observation is particularly true for the function specialization with associated hiring of professional middle managers.

Founder team composition and founders' roles – sales founder, operations founder and product founder – are the elementary organization structure. This initial structure can replace more formalized performance management practices for quite some time. In fact, this elementary organization structure enables search processes for a sustainable business idea and might avoid too early execution. The stronger the founders are individually and the more complementary the competences, the longer a well-balanced founder team composition can cover for more formal practices. However, even the most capable and driven founder team reaches their limits in time, energy, attention and learning capacity as the organization grows. From case studies it can be concluded that this substitution of formal performance management by management by personality and meetings is maintained until it becomes clear that this approach hinders organizational learning processes too much.

This study's empirical data suggests that the middle management is also established to maintain the loop of targets for employees, activities of employees and feedback (performance evaluation) to employees. Illustratively, a long-term employee at AlphaCo states: "Now a middle management is introduced; this is supposed to enable more feedback, so kind of task-feedback-loops are enabled." This loop of targets, activities and feedback is a core component of organizational learning (cf. Bezuijen, van Dam, van den Berg & Thierry, 2010). Due to growth in employees, founders cannot hold up this loop. Founders need a middle management to enable target setting and performance evaluation.

At the same time, a growing organization and the middle management also *require* formalized target setting and performance evaluation. The introduction of a target setting process and a performance evaluation process helps founders to maintain control even though they delegate control over the larger part of employees to their middle managers. Performance management practices are also a signal for professionalism, seriousness and reliability. Middle managers expect to be led professionally by founders – that is to be managed by reliable performance standards as well as consistent target setting and performance evaluation processes.

The empirical evidence supports this analysis on the impact of organization structure on target setting and performance evaluation. AlphaCo's founders hire a Head of Finance and a Head of Personnel & Academy. Their first actions include to introduce a formal performance evaluation process for decentral centers, and to re-design the strategic management process, which is also supposed to lead to a more formal process of setting operational targets in the headquarters. BetaCo's founders hire a CFO, take the human resources function in-house, and then formalize their performance review process. To improve target setting, BetaCo also introduces the OKR goal setting system. As the middle management is stable for a while, DeltaCo's COO sees the opportunity to completely re-design DeltaCo's approach to performance management. Among several initiatives, he adopts the OKR goal setting system.

Impact on reward systems. The organization structure has impact on reward practices. AlphaCo and DeltaCo's central-decentral organization results in differences in the use of financial rewards. At AlphaCo, employees in diagnostic centers receive "extra payments" if they take over additional responsibilities; also, performance outcomes are tied to promotions, which are tied to salary increases. In contrast, employees in AlphaCo's headquarters do not receive such financial incentives. DeltaCo incentivizes managers and employees in decentral international sales offices with bonuses, while they are in the process of abandoning bonuses for their headquarters completely. Further, BetaCo introduces and DeltaCo already uses an employee stock option plan in order to incentivize as well as attract and retain capable middle managers.

Impact on information flow, systems and networks. As long as the most elementary structure consisted of founders and their roles, i.e. in the startup stage, information flows were almost

exclusively vertical, i.e. from employees to founders and back. Organizational growth as well as the middle management change the need for information and the formality and regularity of information supply. Vertical information flows from founders to the organization and back become more standardized to preserve founders' attention and maintain their control. In addition to vertical flows, horizontal information flows across the value chain and between functions and their middle managers are established.

Mainly, three performance management practices reflect the impact of organization structure on information flows, systems and networks. First, case studies introduce information systems and technology in order to standardize information flows across the value chain. Second, case studies review and re-design their meeting structure; additional meetings between middle managers, without founders' presence, are scheduled. Third, case studies take particular care of quickly developing their support functions, most notably the human resources function, the finance and business intelligence functions as well as business specific functions.

Impact on use. At AlphaCo, BetaCo and DeltaCo the functional organizational design and the middle management have a profound impact on the use of the performance management system. In the startup stage, practices are used to facilitate opportunity seeking and learning. Founders implement strategies and plans themselves. In the growth stage, however, founders need formal practices to formulate and control the implementation of strategies by the middle management. Practices are used to achieve both: facilitate opportunity seeking for new value propositions and focus attention on known value propositions. Especially formalized performance measurement and feedback systems are used more diagnostically, while trying to maintain interactive use. Reward systems as well as information flows, systems and networks are designed to support this balance of interactive and diagnostic use. Growth supporting functions are needed to adopt and administrate these practices.

Structure and strategy interaction

Definition. Ferreira & Otley's (2009, p. 269) question on organization structure explicitly addresses the relationship between strategy and structure: "How does [organization structure] influence and how is it influenced by the strategic management process?" It is a long academic discussion whether structure follows strategy – or whether strategy follows structure (Burgelman, 1983, p. 61). There are arguments that structure needs to fit to strategy so that a strategy can be effective (Chandler, 1962). There are also arguments that structure influences – limits – managers' ability to formulate strategy and therefore strategy follows structure (Hall & Saias, 1980). Ferreira & Otley (2009, p. 270) conclude that structure and strategy have a bi-directional relationship especially when strategy is considered as a process rather than a static concept: "Organization structure conditions and is conditioned by the strategic process, as it is by the strategy itself."

Overview. AlphaCo, BetaCo and DeltaCo's empirical data provides support for Ferreira & Otley's (2009, p. 270) view of a bi-directional relationship between structure and strategy. Structure follows strategy, as the growth strategy requires a functional organizational design with a middle management. Strategy formulation follows structure, as case studies re-design their strategic management processes to leverage middle managers' knowledge, and as strategy formulation needs to consider organizational resources especially in high growth phases. Strategy implementation follows structure, as the functional organization requires the use of more formalized performance management practices. Life cycle theory provides support for findings (Churchill & Lewis, 1983, pp. 34, 38, 40; Greiner, 1972, p. 6; Kazanjian & Drazin, 1990, p. 141; Miller & Friesen, 1984, pp. 1162-1163). Table 81 in appendix B3 compares findings from case studies.

Structure follows strategy. The growth strategy changes the organizational design from a founder-centric 'startup organization' to a functional structure with a second management level. In AlphaCo's and DeltaCo's cases, the growth strategy leads to decentral organizational units, as their growth strategies need physical presence nearby their customers.

AlphaCo grows by adding more decentral diagnostic centers. DeltaCo grows by adding international sales offices. Hence their organizational design consists of a headquarters with centralized functions as well as decentral organizational units. BetaCo uses a "target org chart" to outline how their organization structure supports their growth strategy. The growth strategy also leads to the professionalization of growth supporting functions. These functions are either 'classical' support functions such as finance and human resources. Growth supporting functions can as well be specific to the business model and the growth strategy.

Strategy formulation follows structure. The definition of roles and responsibilities influences the perspectives as well as interests that especially middle managers brings in when strategy is formulated and implemented. This is why diversity in leadership teams matters for new venture performance. The strategic management process integrates these perspectives and interests.

At AlphaCo and BetaCo the introduction of the functional organization changes the strategic management process profoundly. While strategy formulation is the founders' domain in the startup stage, it becomes an increasingly participative and more formal process in the growth stage. The strategic management process involves the middle management so that they can contribute their specialized perspectives. DeltaCo's strategic management process is more advanced; they design their strategic management process in a participative way to involve middle managers and leverage their knowledge and information.

AlphaCo, BetaCo and DeltaCo also need to develop their growth strategies, strategic objectives and tactical plans in line with resources available. A sound growth strategy takes into consideration both financial and human resource. However, while financial resources can be

obtained also in short time, it takes more time to acquire human resources and build a team that can implement the growth strategy. In this sense, organizational – and especially managerial – resources might be more strategic and provide more lasting boundaries to strategy. All organizations need to take into account resources available when formulating their strategies. However, growing ventures need to do so even more, because their growth burns extraordinarily more resources and at the same time resources are far more limited compared to most mature companies.

Strategy implementation follows structure. The functional organization also changes how strategy is implemented. In the startup stage founders formulate and implement the strategy personally or with a few direct reports. In the growth stage they formulate the growth strategy together with the middle management in the strategic management process. Increasingly strategy is implemented and executed by the middle management. For this reason, founders adopt and use formal performance management practices that allow them to control strategy implementation. To support strategy implementation in a functional structure, AlphaCo, BetaCo and DeltaCo concentrate on the re-design of performance measurement, target setting, performance evaluation as well as practices related to information flows, systems and networks.

Emergent theme – human resources function

Definition. AlphaCo, BetaCo and DeltaCo consider the human resource function as particularly significant. AlphaCo considers the recruiting of specialists for their diagnostic centers as the firm's most severe bottleneck to further growth. The Head of Personnel & Academy is the second external, senior manager to be hired to AlphaCo's management team. BetaCo's founder takes over the human resources team from the seed investor and makes it an internal function. BetaCo's founders also professionalize the recruiting and onboarding process as well as leadership trainings and employee development. DeltaCo has established a large human resources team of seven employees. DeltaCo's managing director for Americas, who is leading one of the international sales offices based in San Francisco (USA), sees his main job in human resources management.

It is rather surprising that Ferreira & Otley (2009) do not include practices related to human resource management into their framework at all (see chapter 5.11). In contrast, prominent management control literature does consider the human resources function. Chenhall (2003, p. 148) suggests that "much can be learned from linking management control system research agendas with work of human resource management researchers". Kaplan & Norton (1996, chapter 6, p. 127) include "employee capabilities" into the learning and growth perspective of their balanced scorecard. Merchant & Van der Stede (2007, p. 83) include selection and training in their concept of personnel controls. Malmi & Brown (2008, p. 295) include selection, socialization and training under cultural controls.

In discussing alternatives to diagnostic control, Simons (1995, p. 62) elaborates on selection and training as special forms of management control: “Managers can control outputs through the careful selection of inputs. Selecting fine diamonds ensures a high-quality ring. Carefully selecting and training individual workers can provide assurance that tasks will be performed in the desired way. In rare situations in which it is impossible to monitor either the work process or the outputs directly, selection and training of workers are the only viable means of control. In these circumstances, however, the selection of new recruits and the indoctrination of organizational mission, goals, and work methods consumes much of the organization's energy.”

This study proposes that the human resources function manages performance through the following practices: the selection (recruiting) of new organizational members, the initial socialization (onboarding), the ongoing socialization (cultural education), the training and development of employees as well as administrating the process when employees are leaving the organization (offboarding). Together, these practices form the employee cycle.

Overview. The human resources function plays a pivotal role at AlphaCo, BetaCo and DeltaCo. AlphaCo, BetaCo and DeltaCo agree on organizational growth (selection and socialization) and professionalization (training and employee development) as one out of three key success factors. This emphasis on designing the human resources function corresponds to previous findings (Akroyd & Kober, 2019, pp. 9-10; Barringer, Jones & Neubaum, 2005, pp. 673-674; Dávila & Foster, 2005, 2007). Table 82 in appendix B3 compares findings from case studies.

Selection. The human resources function selects new employees according to the knowledge and competences they bring in as well as to their learning capabilities and attitude. Candidates' attitudes towards learning are very present when case studies select their employees. These attitudes towards learning are part of the organizational culture. Organizational values are criteria for employee selection.

Socialization. The human resources function administrates the socialization of new employees as well as the ongoing cultural education of existing employees. More specifically, the human resource functions take over the formalized processes of cultural education. AlphaCo, BetaCo and DeltaCo all have elaborated, formal processes and documentations for socialization.

Training and development. The human resources function supports growth through training and employee development by external coaches and, preferably, with internal experts. Trainings on professional knowhow and soft skills such as leadership competences extend the knowledge basis of the organization. Trainings also facilitate information sharing and interpretation through the interaction of organizational participants from different units of the organization. Career paths are used to motivate and reward learning. Training, development and career paths also improve the retention of key employees and thus avoids attrition of organizational knowledge.

Exit. The human resources function also administrate the exit of employees. The exit process, decision-making and communication, has profound influence on remaining employees. Therefore, exits need to be administrated with care. In some cases, employees and especially managers get laid off in order to ‘force unlearning’ of certain behavior. For instance, AlphaCo’s founders terminated the contract with a manager, who repeatedly violated organizational values, and decided to communicate this layoff publicly in an all-hands meeting.

Use of the human resources function. AlphaCo, BetaCo and DeltaCo use the human resource function to, as Simons (1995, p. 62) puts it, “control outputs by the careful selection of inputs”. The human resources function is supposed to attract employees that can cope with uncertainty, lack of structure, risk, and the tension between opportunity seeking and focus of attention. Furthermore, as organizational members correspond to an organization’s context, human resources function is used to socialize to and continuously educate new employees about the venture’s particular (learning) culture. Finally, human resources is used to extend the professional knowledge and competences by trainings and developing careers. Associated, all case studies use learning, trainings and fast careers as non-financial rewards to their young, aspiring workforce. This incentive, however, is only credible with a professionalized human resources function.

Learning is the core purpose of case studies’ human resources functions. AlphaCo’s senior manager for human resources has the title “Head of Personnel and Academy” to emphasize the importance of learning. BetaCo established the “BetaCo Academies” to systematize teaching and learning initiatives already existent in several parts of the organization. DeltaCo offers the “International Talent Program”, the “Knowledge Sessions” as well as trainings with external coaches on dedicated topics.

Emergent theme – finance and business intelligence functions

Definition. The finance and business intelligence functions are designed to supply the organization with relevant information. The finance function specializes in supplying timely and reliable financial information. The business intelligence function specializes in supplying timely and reliable non-financial (operational) information.

Design of finance and business intelligence functions. At AlphaCo, the Head of Finance is the first senior manager hired by founders. He takes the accounting function in-house to improve cost control. He is responsible for the finance function and the business intelligence function; however, the business intelligence function consists so far only of a young, talented employee.

BetaCo’s founders also enhance the supply of financial and non-financial information shortly after their series B. In their “First Monday Meeting” in January 2016, the founders’ presentation states: “We will transit to a fully data-driven company. We will profit from decisions grounded in data by building up a solid reporting infrastructure.” As for AlphaCo, BetaCo’s first senior

hire is an experienced CFO. The CEO explains this decision directly with the need for financial information in the growth stage: “We are happy that we have hired an experienced CFO. He has experience with growing a startup to a larger company. It's an important step. We need more timely financials, more cost management, a single source of truth and generally financial management to achieve our growth objectives.” BetaCo’s founders also engage an interim Head of Business Intelligence in order to improve the supply of standardized non-financial information, especially about the firm’s online marketing activities.

DeltaCo’s COO is responsible for human resources, finance, business intelligence (after the action project), corporate development, marketing, and office management. Interestingly, with the exception of the marketing function, DeltaCo’s COO is almost exclusively responsible for growth supporting functions. DeltaCo’s finance team is experienced and strong in headcount; its eleven employees make up 5% of DeltaCo’s total headcount. One of the action projects at DeltaCo was to re-organize and re-conceptualize the business intelligence function. The team’s reporting line was changed from the CRO to the COO. The reasoning behind was to receive all financial and non-financial information from a single, integrated and unbiased source of truth under the supervision of the COO.

Use. AlphaCo, BetaCo and DeltaCo use their finance and business intelligence functions to supply the organizations with financial and non-financial information. Financial information is associated with feedback on how well the business has been executed, while non-financial information is associated with forward-looking activities and with the drivers of future performance. Financial and non-financial information flows are integrated: at all case studies finance and business intelligence report to the operations founder.

Emergent theme – business specific growth supporting functions

Definition. AlphaCo, BetaCo and DeltaCo create functions that specifically facilitate organizational learning processes about business model and growth strategy. These organizational learning processes are too relevant to be taken over by functions of the primary value chain. Growth supporting functions, i.e. human resources, finance and business intelligences and business specific growth supporting functions, have a lot of interaction with each other. This observation can be explained with the common assignment of these functions: to support growth by supporting learning. These observations correspond to findings by Von Krogh & Cusumano (2001, especially page 60).

Design of business specific growth supporting functions. AlphaCo’s founders are particularly focused on using business specific growth supporting functions. They have created two interesting growth supporting functions that specifically relate to their business model and growth strategy: “Knowledge & Quality” and “Strategic Projects”.

The first growth supporting function is the “Department for Knowledge & Quality”. AlphaCo’s business model rests on process efficiencies in diagnostic imaging. High-quality processual and organizational knowledge is decisive. The Department for Knowledge & Quality is a nexus, where critical knowledge is gathered, stored, audited, made explicit and then distributed to the organization. The Head of Knowledge & Quality explains: “My department is responsible for knowledge management. Furthermore, we ensure the quality in our processes. We are a process-focused company, our business is about better processes. It is all about making knowledge explicit and accessible.” At AlphaCo, the Department for Knowledge & Quality supervises all rules, procedures and policies. Findings about AlphaCo’s Department for Knowledge & Quality reflect what Von Krogh & Cusumano (2001, p. 53) refer to as the “Chief Knowledge Office”.

The second growth supporting function is the “Department for Strategic Projects”. AlphaCo grows by setting up new diagnostic centers. Their growth strategy is dependent on learning how to efficiently and effectively open up new centers. To execute on this task, AlphaCo’s founders have created “Strategic Projects”. Learnings on how to set up new centers fast and reliable are collected, explicated and organized in a playbook. The Head of Strategic Projects explains: “We have an interior playbook (“Raumbuch”) with a long order list of infrastructure necessary for each new center.”

BetaCo’s founders have established a role called “Entrepreneur in Residence”. The Entrepreneur in Residence is a young, aspiring employee who is supposed to learn about new business opportunities, establish initial operations to execute on potential growth areas, and then hand over operations to a team. BetaCo’s Entrepreneurs in Residence are also used as in-house consultants and task force.

DeltaCo’s COO has established a function called “Corporate Development”. The Senior Manager Corporate Development explains: “The Corporate Development team is used to grow the team and implement best practices.” Corporate Development is designed to focus on specific topics from end to end. The team dives deep into central topics on behalf of other functions and implement best practices. Later, the COO merged Corporate Development and the Business Intelligence Team to create a task force that combines non-financial information and best practice know-how.

Use of business specific growth supporting functions. AlphaCo, BetaCo and DeltaCo use business specific growth supporting functions in areas that require special attention and learning. These business areas are an integral part of the business model and crucial to realize the growth strategy. Business specific growth supporting functions have time, resources and methods to focus on these critical areas. In the early stages of covering a certain issue, business specific growth supporting functions expand opportunity seeking, while at a later stage such functions are able to focus attention on the most relevant activities.

Emergent theme – office design

Definition. Ferreira & Otley (2009, p. 269) mention that “controls are sometimes built into the physical structure or organizational architecture, which might get overlooked by conventional approaches to the study of management control systems”. The office design is important to case studies. They appear to use the design of their work environments to manage performance.

The architecture of an organization’s environment can be considered as an essential element of organizational culture (Schein, 2008, pp. 25-26). The design of the work environment can be used “as a strategy for productivity enhancement” (Roelofsen, 2002, p. 247). The office design can be regarded as one element of the wider concept of organizational design (Lee, 2019, p. 474). Thoughtful office designs can make employees more “communicative, collaborative and creative” (Lee, 2018, p. 22). The office design also determines information flows through both planned interaction and unplanned encounters (Lee, 2018, p. 22).

The management accounting and control literature appears to be inconclusive about office design. Some researchers touch on the design of the physical work environment briefly, while others do not treat the office at all. In line with his focus on information-based management controls, Simons (1995, p. 181) addresses physical arrangements only in the context of internal control systems. Merchant & Van der Stede’s (2007) regard the work environment either as physical constraints to ensure desired behavior (p. 76), or very selectively as positive incentives to managers (p. 394). Malmi & Brown (2008, p. 294) link “symbol-based controls” to organizational culture and communication.

Roelofsen (2002, pp. 250) includes the auditory environment, visual environment, thermal environment, air quality as well as the level of control in his concept of the “office environment”. This study goes beyond the factors suggested by Roelofsen (2002) and consider the following non-exhaustive list of factors as relevant for office design: the location of and access to the office; the architecture of the building; furniture and equipment; community places such as entrance, kitchen, lounge and sometimes ‘playgrounds’; sports facilities; open offices, shared offices and/or individual offices; the seating arrangement of founders and important managers; seating arrangements within teams; seating arrangements across teams; meeting rooms; conversation pits; dress codes; the auditory environment such as noise level and music; the visual environment such as decoration, pictures and symbols; the thermal environment and air quality; the level of control over the working environment; food and beverages; as well as other perks, benefits and services.

Office design. AlphaCo, BetaCo and DeltaCo design their offices for several performance management purposes, including: to educate employees about organizational culture, to reflect organization structure, to reward for belonging and contributing to the group, and to facilitate both deliberate and incidental flows of information. Figure 22 provides a summary.

At AlphaCo, BetaCo and DeltaCo, organizational culture and organization structure is represented in their office designs. Despite their young age and short financial means, all case studies have their headquarters in city centers. Central office locations highlight their metropolitan and international cultures. To demonstrate their professionalism and process-orientation, AlphaCo uses elaborated visual designs and architecture in their headquarters and diagnostic centers. To emphasize team spirit and flat hierarchies, founders at BetaCo and DeltaCo sit with their teams in open space offices. To illustrate teamwork, BetaCo and DeltaCo create “employee pics walls”, which show a funny picture of each employee and a short description of their role in the company.

AlphaCo, BetaCo and DeltaCo also use the design of the work environment as non-financial group rewards. These rewards are assigned just for being a member of the organization. Their offices thus also function as an important factor in attracting and convincing talented employees. In fact, career pages and employer branding videos advertise city center locations, nicely designed and furnished community spaces as well as free food and beverages. For instance, AlphaCo provides Nespresso coffee and fruits, BetaCo furnishes a gym in the basement, and DeltaCo has a large lounge including table soccer and video game console with a large screen. On the other side, none of the three case studies has the ‘corner office syndrome’: physical, tangible and visible rewards related to the office design are obtained based on organizational membership and do not reflect hierarchical status.

AlphaCo, BetaCo and DeltaCo are aware that the office design influences how information flows through the organization. AlphaCo moves into a new office shortly after the investigation also because they need more meeting rooms. Before the move to the new office, AlphaCo’s headquarters is in the same building and on the same floor as one of their diagnostic centers. Although this arrangement was not planned, founders use this proximity to facilitate the exchange of knowledge and information between headquarters employees and center employees that are directly in touch with AlphaCo’s customers.

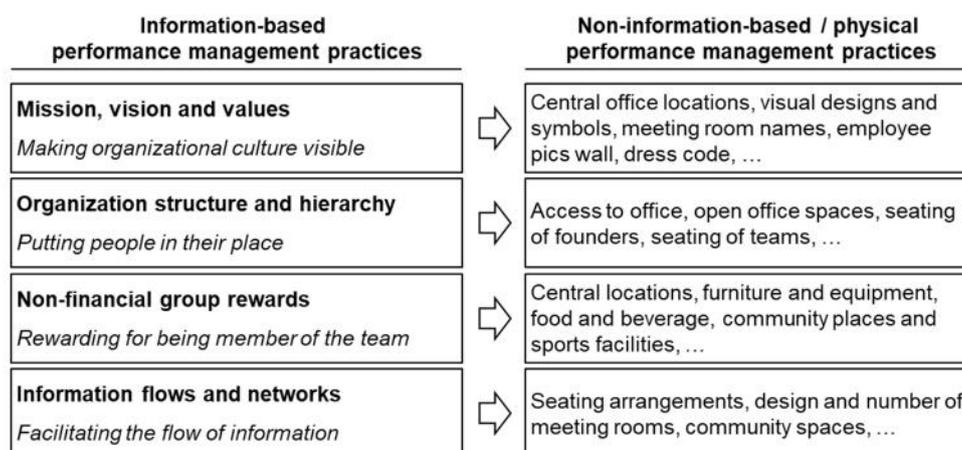


Fig. 22: The translation of information-based practices into physical practices

BetaCo and DeltaCo complement their open space offices with sufficient places for both meetings, calls as well as undisturbed individual work. DeltaCo's office is deliberately designed for the purpose of facilitating the flow of information. Employees sit in an open office space so that exchange of information happens by default. At the same time many meeting rooms are available that can easily be booked to meet in private or work alone.

Use of office design. AlphaCo, BetaCo and DeltaCo use the design of their offices to manage performance by linking physical practices back to information-based practices. Founders use the office design to teach organizational participants about information-based practices and organizational participants 'experience' information-based practices through the physical office design. Organizational culture, organization structure, rewards and information flows, are translated into non-information-based, physical performance management practices to make them more visible and tangible – and also to enforce them.

4.1.4. Strategies and plans

Ferreira & Otley's (2009, p. 267) fourth question is:

“What strategies and plans has the organization adopted and what are the processes and activities that it has decided will be required for it to ensure its success? How are strategies and plans adapted, generated and communicated to managers and employees?”

Ferreira & Otley's (2009, pp. 270-271) fourth performance management system component includes theoretical elaborations on five themes: typologies of strategy and the strategy chosen by case studies, case studies' concepts of strategy, strategic and financial business plans, the strategic management process as well as organizational processes. In addition, the investigation into AlphaCo, BetaCo and DeltaCo identifies three interesting and relevant emergent themes: strategic objectives, the value proposition as organizational objective as well as the concept of the scaling unit.

Typologies of strategy

Definitions. Strategy can be conceptualized in many ways (cf. Langfield-Smith, 1997, p. 209; Langfield-Smith, 2007, p. 755). Ferreira & Otley (2009, p. 270) define that “strategy is the direction the organization chooses to pursue over the long term as the means of achieving organizational objectives”. Hambrick & Fredrickson (2005, p. 51) agree and define strategy as the “integrated, overarching concept of how the business will achieve its objectives”.

Strategy can be summarized in generic strategy types. Ferreira & Otley (2009, p. 270) refer to several theoretical strategy typologies that are frequently being used in management accounting and control research. Three of them are useful for this study's analysis. Miles, Snow, Meyer & Coleman (1978) propose defender, analyzer, prospector and reactor strategies. MacMillan (1982) proposes eight generic strategic roles, i.e. aggressive build, gradual build, selective

build, aggressive maintain, selective maintain, competitive harasser, prove viability, and divest. Gupta & Govindarajan (1984) suggest build, hold and harvest as pure strategy types.

Overview. AlphaCo, BetaCo and DeltaCo strategies and plans can be categorized as prospector strategies, aggressive build strategies (BetaCo and DeltaCo) or gradual build strategies (AlphaCo) as well as build strategies. Growth in revenue and organizational size are the overarching objectives. This is, of course, not surprising, as rapid growth ambitions, revenue growth and organizational growth are three of this study's theoretical selection criteria. Findings correspond to previous research (Churchill & Lewis, 1983, p. 40; Greiner, 1972, p.10; Kolvereid, 1992; Miller & Friesen, 1984, p. 1163). Table 83 in appendix B4 provides empirical evidence from three different data sources.

Typologies. All case studies can be considered prospectors (Miles, Snow, Meyer & Coleman, 1978, pp. 551-553). All case studies pursue pure build strategies (Gupta & Govindarajan, 1984, pp. 26-27). In MacMillan's (1982, p. 48) more fine-grained strategy typology, AlphaCo might be classified as following a gradual build strategy, since building up diagnostic centers takes more time, while BetaCo and DeltaCo can be classified as pursuing aggressive build strategies.

Objective to grow. Strategies and plans are aligned with the objective to grow in revenue and size. AlphaCo grows by opening up new domestic diagnostic centers. BetaCo grows by adding new products to sell to existing customers and new customer groups; BetaCo also plans to internationalize to other European markets. DeltaCo grows by penetrating existing markets and by opening up new sales offices in international markets; in the long-run, DeltaCo intends to grow by innovating technological products.

Growth aligns all stakeholder. At AlphaCo, BetaCo and DeltaCo, all stakeholders are aligned behind the growth strategy. Communicating and executing dedicated growth strategies is required for several reasons: to satisfy founders' ambitions, to increase company valuation, to stay financially healthy, to maintain a good relationship with investors, to attract and evaluate talented employees, to retain key employees and their motivation, to continue improving the product, to show legitimacy and credibility to customers and suppliers as well as other partners, to overcome the liabilities of newness and smallness, and further reasons. Growth also avoids inertia and increases the likelihood that the organization keeps learning.

Concepts of strategy

This section extends beyond Ferreira & Otley's (2009, p. 267) theoretical elaboration of strategies and plans (pp. 270-271). This approach is chosen, because strategy typologies are not sufficient for this study's purpose: as per the research question the study only investigates case studies pursuing a growth strategy. This study intends to analyze how case studies understand strategy and what their ideas of strategy imply for their performance management systems.

Definition. The following elaborations are based on Simons' (1995) lever of control theory. Simons (1995) in turn refers to Mintzberg's (1987) concept of strategies. Mintzberg (1987, p. 11) writes: "The field of strategic management cannot afford to rely on a single definition of strategy, indeed the word has long been used implicitly in different ways even if it has traditionally been defined formally in only one. Explicit recognition of multiple definitions can help practitioners and researchers alike to maneuver through this difficult field. Accordingly, this article presents five definitions of strategy – as plan, ploy, pattern, position, and perspective – and considers some of their interrelationships." In his levers of control theory, Simons (1995) conflates plan and ploy, and then uses four of Mintzberg's (1987) strategy concepts: "Henry Mintzberg identifies at least four distinct ways the term may be used – as a plan, as a pattern of actions, as a competitive position, and as an overall perspective" (p. 8).

Mintzberg (1987) defines these four concepts of strategy: "[...] *strategy is a plan* – some sort of consciously intended course of action, a guideline (or set of guidelines) to deal with a situation. [...]. By this definition, strategies have two essential characteristics: they are made in advance of the actions to which they apply, and they are developed consciously and purposefully" (p. 11). "[...] *strategy is a pattern* – specifically, a pattern in a stream of actions. [...]. In other words, by this definition, strategy is consistency in behavior, whether or not intended" (p. 12). "[...] *strategy is a position* – specifically, a means of locating an organization in what organization theorists like to call an 'environment'. [...]. [...]; in economic terms, a place that generates 'rent' [...]; in management terms a product-market 'domain', the place in the environment where resources are concentrated" (p. 15). "*Strategy is a perspective*, its content consisting [...] of an ingrained way of perceiving the world" (p. 16).

Simons (1995) relates Mintzberg's (1987) four strategy concepts to his four levers of control – and to organizational learning (see chapter 2.2.5). Simons (1995, pp. 155-156) proposes that belief systems control strategy as perspective; interactive control systems control strategy as patterns of action; boundary systems control strategy as a position; and diagnostic control systems control strategy as a plan (see figure 23). Simons (1995) also relates his four levers of control to different modes of organizational learning. Belief systems and interactive control systems are "systems to expand opportunity seeking and learning" (Simons, 1995, p. 157). Boundary systems and diagnostic control systems are "systems to focus search and attention" (Simons, 1995, p. 157).

Overview. AlphaCo, BetaCo and DeltaCo use all four concepts of strategy. Strategy as perspective is established early, stable and intensely used. Strategy as pattern is intensely used and further strengthened by increasing use of rules, procedures and policies. Strategy as position is intensely used as well. Strategy as plan is used and outlined in the strategic business plan and financial business plan. Case studies intend to further strengthen strategy as plan by improving

the diagnostic use of performance measurement and feedback systems. Table 84 in appendix B4 compares findings from case studies.

Strategy as perspective. AlphaCo, BetaCo and DeltaCo manage their strategies as perspectives. An important practice to summarize strategy as perspective is the strategic business plan. All three case studies use vision and mission, and to some extent also organizational values, to control strategy as a shared purpose and unique way of doing things.

Strategy as pattern. AlphaCo, BetaCo and DeltaCo manage their strategies as consistent patterns of actions. Vision and mission are practices used to coordinate organizational behavior. Organizational values are oriented towards learning and are particularly important to create consistency in performance standards, team collaboration, information sharing and individual work ethics. Furthermore, AlphaCo, BetaCo and DeltaCo use the careful selection and socialization of organizational members to create consistent behavior. In all cases founders' coherent behavior as role models contributes to consistent action patterns as well. Finally, rules can play an important role in both creating consistency in behavior relevant to a company's strategic focus. AlphaCo already relies strongly on rules, procedures and policies; BetaCo and DeltaCo intend to increase their set of rules, procedures and policies.

Strategy as position. AlphaCo, BetaCo and DeltaCo manage their strategies as positions. All three companies are well positioned in their business environment or, more precisely, in their product-market domain. Competitive positions are included in strategic business plans. AlphaCo focuses on the diagnostic imaging market in Germany, with the future prospect of internationalization. AlphaCo is profitable and thus their product-market domain is economically viable. DeltaCo is clearly positioned in the mobile advertisement technology industry. Ad tech is a globalized data- and tech-based industry and DeltaCo operates internationally. DeltaCo is profitable and thus has found a viable economic position.

BetaCo concentrates on the nutrition market in Germany and intends to expand to other European markets. BetaCo is not profitable yet and their product-market domain has thus not proven to be economically viable. One reason might be BetaCo's rapid growth; another reason might be that their business model becomes profitable at a certain scale only. BetaCo is the only case study still experimenting with its product-market position to some degree.

Strategy as plan. AlphaCo, BetaCo and DeltaCo increasingly manage or intend to manage their strategies as plans. Founders use two types of plans: a strategic business plan and a financial business plan. They appear to use both types of business plans for different purposes. The strategic business plan includes strategy as perspective, position and plan. The strategic business plan also outlines organizational culture and particularly relevant business rules; therefore, the strategic business plan controls strategy as pattern as well. The financial business

plan determines the minimum necessary and maximum possible financial performance; this study relates the financial business plan mainly to strategy as a plan.

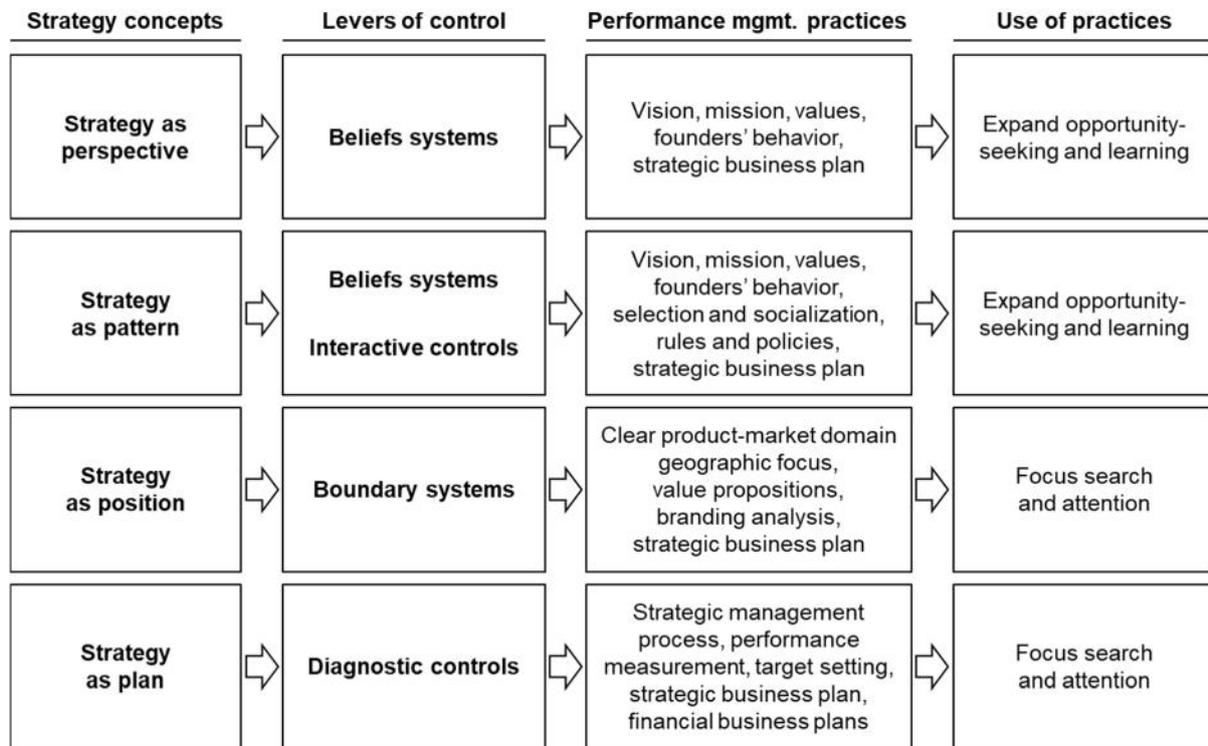


Fig. 23: Strategy concepts, levers of control, performance management and use (cf. Simons, 1995)

Use of strategy. AlphaCo, BetaCo and DeltaCo manage their strategies as unique perspectives and consistent patterns of actions. Associated with strategy as perspective and strategy as pattern are beliefs systems and interactive control systems; both expand opportunity seeking, searching and learning. AlphaCo, BetaCo and DeltaCo’s strategies are based on viable (or in BetaCo’s case promising) economic product-market domains. Case studies thus clearly know their strategic boundaries, i.e. their competitive positions, which are controlled by boundary systems. Boundary systems focus search and attention, yet they do so on a quite high, strategic level. The level of detail needs to be increased and strategy is to be controlled as plan.

AlphaCo, BetaCo and DeltaCo intend to increasingly control their strategies as plans. All case studies introduce or further formalize their strategic management processes. All case studies use financial business plans to learn from variance analyses. All case studies are in the process of conceptualizing (AlphaCo) or introducing (BetaCo and DeltaCo) strategic performance measurement systems. BetaCo and DeltaCo introduce the OKR goal setting system to translate strategy into predictable (short-term) operational targets. All case studies improve their performance evaluation processes. This advancement to controlling strategy as a plan, which is implemented by more diagnostic control, is one of the decisive steps in completing entrepreneurial growth companies’ Growth Performance Management approach.

Strategic and financial business plans

Definition. Ferreira & Otley (2009, pp. 267, 270) ask about plans that an organization might have adopted. Honig & Karlsson (2004, p. 29) define “a business plan as a written document that describes the current state and the presupposed future of an organization”.

Overview. AlphaCo, BetaCo and DeltaCo use two basic and not mutually excluding types of business plans: the strategic business plan and the financial business plan. The strategic business plan outlines key aspects of the business, the current situation as well as future aspirations. The financial business plan details actual financial results in the past and projects financial developments in the future. Overviews from financial business plans are typically part of the strategic business plan. Strategic business plan and financial business plan are used for several purposes, including investor communication, pitch presentations, or onboarding presentations. Findings are supported by the entrepreneurship literature (Barringer, Jones & Neubaum, 2005, p. 668; Chen, Yao & Kotha, 2009; Honig & Karlsson, 2004; Karlsson & Honig, 2009). Tables 85 and 86 in appendix B4 compare findings from case studies. Table 87 in appendix B4 compares the concepts of strategic business plans and financial business plans.

Strategic business plan. AlphaCo, BetaCo and DeltaCo’s strategic business plans consistently cover similar key aspects of their businesses: vision and mission, market analyses, business model dimensions and particular value propositions, status quo and past achievements, competitor analyses, growth strategy and strategic objectives, past financial results and financial planning, elaborations on technology, founder and management team, and company history. Differences in emphasis and extensions of strategic business plans relate to case studies’ particular business models.

Strategic business plans are prepared by founders and executives. Target groups are mainly the founders and executives themselves as well as existing and/or prospective investors, but also several other stakeholder groups. Individual slides on specific topics are used in other documents, such as in presentations for all-hands meetings, in onboarding presentations or even in presentations used to acquire big customers and suppliers. AlphaCo, BetaCo and DeltaCo develop one comprehensive document – the strategic business plan – that then is to be used for several communicative purposes. Planning horizons vary in strategic business plans and depend on topics. Overall AlphaCo, BetaCo and DeltaCo appear to plan for the long-term, i.e. three to five years.

Financial business plans. AlphaCo, BetaCo and DeltaCo’s financial business plans show quite consistent structures. Founders and executive focus on the profit & loss statement, with a particular emphasis on revenue structure – which ties back to revenue growth as key success factor – as well as on financial liquidity. Interestingly, AlphaCo and DeltaCo appear to not use performance indicators from the balance sheet for planning purposes. BetaCo does use

performance indicators related to inventory and working capital, which corresponds to its e-commerce business; yet BetaCo's focus is also clearly on KPIs from the profit & loss statement.

Financial business plans link financial KPIs to non-financial KPIs. All case studies use non-financial performance measures as their 'lowest planning unit'. This means that case studies use non-financial KPIs to project financial KPIs. For instance, BetaCo uses the number of orders and average basket sizes from new customers to calculate revenue from new customers.

BetaCo and DeltaCo use their financial business plans to do a variance analysis, i.e. to compare actual financial results with business plan targets. Variance analysis is a significant part of DeltaCo's performance management approach of their international sales offices. In AlphaCo's case such comparison could not be observed, but it is likely that the CEO and the experienced Head of Finance do regular variance analysis.

Financial business plans are mainly prepared by founder and/or executive responsible for operations. Target groups are smaller than for strategic business plans and include founders, executives and investors. Plans are structured monthly and planning horizons are between one and five years.

Use of strategic and financial business plans. AlphaCo, BetaCo and DeltaCo make different use of their strategic and financial business plans. Founders develop their strategic business plans to reflect and document learnings about key business aspects, such as market opportunity, business model and competition. Strategic business plans also document "entrepreneurial legitimacy" (cf. De Clercq & Voronov, 2009): entrepreneurial stories, company history, past achievements, milestones reached, founders and team. Finally, strategic business plans are documents for visionary story-telling about the bright future of the venture in order to motivate stakeholders' contributions.

The strategic business plan's key business aspects, learnings, stories and mental models are brought to life in colorful and well compiled PowerPoint slides. They are used to communicate to – educate and teach – several stakeholder groups. For instance, AlphaCo uses strategic business plan slides in their onboarding presentation, and BetaCo uses such slides for convincing potential retail customers.

Financial business plans are what most people might have in mind when speaking about 'business plans'. Founders develop financial business plans to measure past financial outcomes and to project financials in the future. In the context of entrepreneurial growth companies, financial business plans are an important practice for exercising financial leadership. This echoes Dávila & Foster's (2005, p. 1051; 2007, p. 913) findings that financial planning systems are adopted sooner relative to other management control systems.

Financial leadership defines the minimum necessary and the maximum possible financial performance. Most importantly, financial leadership translates financial resources into time. The minimum financial performance outlines what the company must achieve to avoid severe turmoil or even to survive. The maximum financial performance outlines what strategies are possible to pursue given financial resources. In the context of entrepreneurial growth companies, financial leadership draws the financial frame within which strategic objectives can be pursued.

Strategic business plans and financial business plans can be used to focus attention and search as well as expanding opportunity seeking and learning. The strategic business plan leans more to expanding opportunity seeking, while the financial business plan is often used to focus search and attention. Yet use is interlinked and conflated, and these categories are not definite.

Strategic management process

Definition. The strategic management process is defined as the process by which strategies are formulated, adapted and communicated (Ferreira & Otley, 2009, p. 270). Ferreira & Otley (2009, p. 270) elaborate on different designs of the strategic management process: “The process can follow the traditional top-down approach – where top managers undertake the strategic thinking, decision-making, planning, and then communicate it to the wider organization – or it can follow a bottom-up approach – where there is involvement of all levels of management in the strategic process.” Bedford & Malmi (2015, p. 7) add that the strategic management process can be “ad-hoc, adaptive and emergent” or “formalized, deterministic and deliberate”.

Overview. AlphaCo, BetaCo and DeltaCo all adopt strategic management processes. Strategic management processes introduce a clearer distinction between strategy formulation and strategy implementation. The strategic management processes leverages middle managers’ professional knowledge and function-specific information in the strategy formulation process. The strategic management process is also a practice to communicate strategy and prepare strategy implementation. Thus, case studies design their strategic management processes in a participative as well as top-down-bottom-up approach. Strategy meetings take place quarterly or bi-annually. There are similar findings in the literature (cf. Churchill & Lewis, 1983, p. 34; Cooper, 1981; Fombrun & Wally, 1989, p. 119). Table 88 in appendix B4 provides empirical evidence from two different data sources.

Design of the strategic management process. AlphaCo, BetaCo and DeltaCo design their strategic management processes in a participative and top-down-bottom-up approach. In the process a distinction between strategic objectives and strategy can be observed. Founders set the broad strategic direction using strategic objectives. The middle management shares their professional knowledge and function-specific information. The middle management reviews and potentially adapts strategic objectives together with founders. Founders and middle

management together develop strategies of how to achieve strategic objectives. Middle managers take results to their teams and further discuss strategies, but not strategic objectives. Strategy implementation is driven by founders and increasingly by middle managers.

AlphaCo's strategic management process. AlphaCo's strategic management process is still quite concentrated on the experienced founder team. Strategy formulation appears to be triggered by events, such as fundraising or investor meetings. AlphaCo's approach to strategic management is being re-designed under the headline "OGSM 2016 Workshop Series". OGSM refers to "Objectives, Goals, Strategy and Measures" (cf. Riccaboni & Leone, 2010, pp. 135-136). Founders' goals of re-designing the process are to structure strategic management, free dedicated time for strategy formulation, give the organization a quarterly rhythm between planning and execution, tap into the knowledge and information of the middle management, and make mid-managers more accountable for strategy implementation.

BetaCo's strategic management process. BetaCo's strategy formulation is driven by founders. Strategy formulation appears to be triggered mostly by events or meetings with investors ("Investors Jour Fixe"). Founders are strong in formulating strategic objectives. Yet although the general strategic direction is clear, strategies appear to be adapted rather frequently, often due to time pressure from the strategic investor. On several occasions, CEO, COO and Co-CEO state that this ad-hoc strategic planning approach reaches its limits at a certain organizational complexity. For this reason, founders start to make clearer distinction between strategy formulation and execution. BetaCo's strategic management process is starting to involve the new middle management in order to leverage their knowledge, make them accountable and prepare for strategy implementation.

DeltaCo's strategic management process. DeltaCo's strategic management process is designed top-down-bottom-up and participative. The strategic management process is conducted every six months. CEO, CRO and COO set "the broad strategic direction" (COO) in the form of strategic objectives. Strategies to achieve these strategic objectives are then defined together with the middle management in workshop style meetings. At the time of investigation, DeltaCo's key managers and employees from all international offices gathered in Berlin to take part in the "DeltaCo Summer Event" and the "DeltaCo Strategy Week" for this purpose.

Evolution and use of strategic management. AlphaCo, BetaCo and DeltaCo evolve from ad-hoc, emergent, adaptive 'mix' of strategy formulation to increasingly formalized strategic management processes (see figure 24). In the startup stage, strategic management is necessarily ad-hoc, frequent, emergent and adaptive. Strategy formulation and implementation are interlinked and intertwined. Strategic management is concentrated on founders, who operate with rather short-term objectives and conflate strategic management process and operational target setting process. Strategy formulation is often triggered by events such as fundraising,

investor communication and crisis situations. Startups' strategic management is designed for exploring ideas, for fast adaptation, for expanding opportunity seeking and learning.

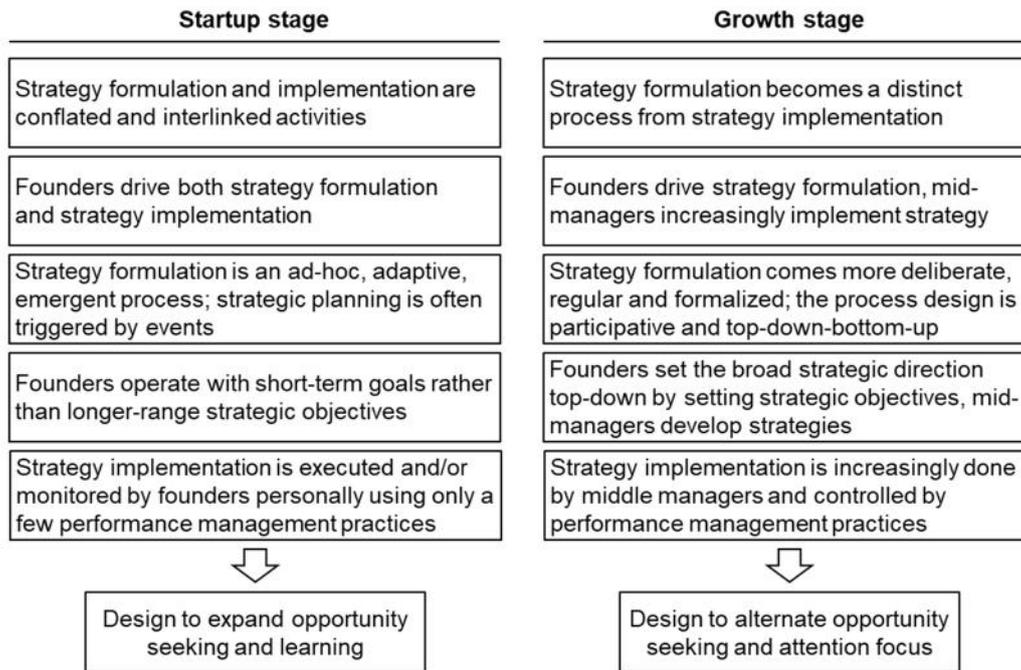


Fig. 24: Design and use of strategic management in the startup and in the growth stage

In the growth stage, however, the strategic management process is formalized, as outlined above. The top-down-bottom-up design facilitates organizational learning processes. The separation of formulation and implementation provides the organization with a rhythm. The strategic management process is used to alternate between formulation of strategies and strategy implementation. The strategic management process formulates the strategic objectives, on which the organization then focuses its attention. In other words, the strategic management process is used to balance opportunity seeking and focus of attention.

Organizational processes

Definition. Bingham, Eisenhardt & Furr (2008, p. 27) define organizational processes as “the sets of actions that repeat over time and allow managers to accomplish some business task”. Based on observations at AlphaCo, BetaCo and DeltaCo, this study distinguishes three types of organizational processes: strategic-singular processes, strategic-recurring processes as well as operational processes.

Overview. AlphaCo, BetaCo and DeltaCo distinguish organizational processes based on their knowledge about a process, the required allocation of organizational attention as well as to their relationship to organizational objectives. Organizational processes can (and should) switch between these types, as organizational processes themselves as well as the transition from one type to the other reflect organizational learning. The categorization into types of organizational

processes has implications for the design and use of performance management practices. The strategic management literature supports these findings (e.g. Teece, Pisano & Shuen, 1997; Bingham, Eisenhardt & Furr, 2008; Bingham & Eisenhardt, 2011). Table 89 in appendix B4 compares findings from case studies. Figure 25 provides an overview.

Strategic-singular processes. Strategic-singular processes are organizational processes, which involve a foreseeable sequence of activities. These activities are essential to the venture's vision and strategic objectives and thus require founders' attention. However, activities are not recurring over time and knowledge about the process is limited. Fundraising and strategic partnerships are typical examples for strategic-singular processes at all case studies.

Further strategic-singular processes are specific to case studies' businesses models and strategies. AlphaCo has a strategic-singular process to determine potential locations for new diagnostic centers. BetaCo uses a strategic-singular processes to develop (not sell) private label products, the "BetaCo Brands". DeltaCo has a strategic-singular process for the acquisition and/or founding of tech startups (four as end of 2016).

Strategic-recurring processes. Strategic-recurring processes are organizational processes, whose activities repeat over time and which significantly contribute to the venture's objective to grow. Process knowledge is existent but not comprehensive. Therefore, strategic-recurring processes require founders' and particularly middle managers' attention. Some parts of strategic-recurring processes are measurable and can be standardized, yet not fully reliable. The challenge is to find the right balance between opportunity seeking and focusing attention.

AlphaCo, BetaCo and DeltaCo are consistent in considering three organizational processes as strategic-recurring processes: sales and/or marketing processes, recruiting processes, and processes for developing products and technology. These three strategic-recurring processes reflect case studies' key success factors.

Case studies also consider processes as strategic-recurring that are specific to their business model and growth strategies. AlphaCo's founders see the process of gathering, creating, auditing and distributing knowledge as strategic to their business model. Hence, they establish a team, the department for Knowledge & Quality, to take care of this strategic-recurring process. BetaCo considers the sale (not development) of its private label products as a strategic-recurring process to support their profitability. DeltaCo considers the development of its new technological products as a strategic-recurring process. As DeltaCo operates in a highly dynamic environment, the innovation of new tech products is the rule rather than the exception.

Operational processes. Operational processes structure sequential and recurring sets of activities over time. They resemble Drucker's "regular process" (as cited in Merchant & Van der Stede, 2007, p. 219). The set of activities to be performed in operational processes are pre-defined, standardized and largely measurable. Case studies have in-depth knowledge about

these processes. Operational processes realize important, yet not strategic objectives. Operational processes are executed by employees. Supervision is done by middle managers. Founders are involved only in exceptions. Customer service or accounting processes are typical examples for operational processes at all case studies.

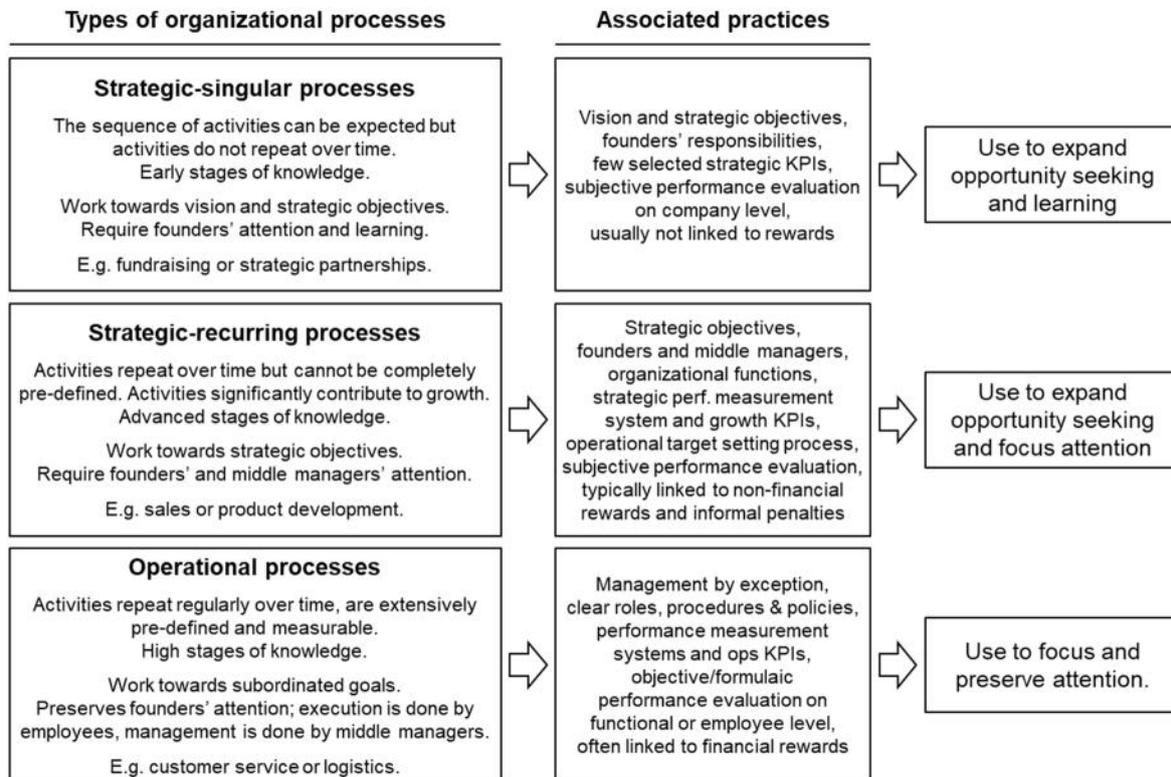


Fig. 25: Strategic-singular, strategic-recurring and operational processes

Switching levels. Organizational processes can and should switch levels. In the startup stage, all processes are strategic-singular processes. As case studies 'climb' their businesses' stages of knowledge, strategic-singular processes become strategic-recurring processes. Later on, some selected processes become measurable and can be standardized to operational processes. In the growth stage, it is critical to deliberately decide what organizational process should be considered strategic-recurring or operational, as this categorization determines organizational learning modes as well as associated performance management practices.

AlphaCo's examination process is a good example. AlphaCo's business model is to realize process efficiencies in diagnostic imaging; thus, one of their core processes is the examination process. In the startup stage, AlphaCo's founders took great care in designing the examination process in their first diagnostic center. At first, founders were involved in examinations of their first 'test' center. They 'trial-and-errored', measured, documented; the examination process was strategic-singular. As AlphaCo's founders learnt more about the examination process, its design could become strategic-recurring. Most importantly, using training and detailed procedures

other employees could be instructed to execute examinations. As a next step, founders introduced the Department for Knowledge & Quality to further document and explicate learnings. With the opening two additional centers, AlphaCo had learnt enough so that the examination process could become close to an operational process – with corresponding implications on the design and use of performance management practices (i.e. “Performance Management Process”, “Index Score”, “Performance Evaluation Tool”, see chapter 4.1.7).

Operational processes can also switch back to being considered strategic-recurring processes. Our action project at DeltaCo changed the recruiting process from an operational process to a strategic-recurring process. Although CEO, CRO and COO all considered the process of selecting new employees as most essential to their growth and named it a key success factor, their performance management approach to the process did not reflect its strategic relevance.

Use of organizational processes. AlphaCo, BetaCo and DeltaCo’s categorize three types of organizational processes for several purposes. The categorization helps case studies to achieve organizational objectives, increases efficiency, coordinates employees, decides what processes can be delegated to employees and managed by exception, helps to advance through stages of knowledge, allocates organizational attention. The categorization in three types of organizational processes as well as associated performance management practices support the balance between expanding opportunity seeking and focusing attention. Correspondingly, this categorization of organizational processes has implications for the design and use of performance management practices.

Emergent theme – strategic objectives

The formulation of strategic objectives is a particular important performance management practice at AlphaCo, BetaCo and DeltaCo. When founders think about their growth strategies, they appear to think first about desired outcomes. Founders mold their ambitions into strategic objectives to be achieved in one, two, three years, before they elaborate strategies of how to get there. It could be argued that precise, measurable strategic objectives are at the center of case studies’ understanding of strategy. The ideas, ways, means, actions – strategies – of achieving strategic objectives are often being learnt and adapted on the way.

Definition. Organizational objectives are all forms and types of objectives, targets or goals that organizations use to formulate performance ambitions and that help to assess organizational effectiveness (Otley, 1980, pp. 423-424). This study distinguishes the following organizational objectives: vision, mission, key success factors, strategic objectives and operational targets (cf. Collins & Rukstad, 2008, p. 85; Ferreira & Otley, 2009, pp.268, 270; Hambrick & Fredrickson, 2005, pp. 51-52; Kaplan & Norton, 2001, p. 73; Merchant & Van der Stede, 2007, pp. 30-31, 330-332; Otley, 1980, pp. 422-424). The defining differences between objectives refer to time horizons, achievability and organizational level.

Definition of strategic objectives. Strategic objectives derive from mission, vision, key success factors (Ferreira & Otley, 2009, p. 270) and potentially value propositions (cf. Collins & Rukstad, 2008, pp. 84-86), are used to direct strategy formulation (Hambrick & Fredrickson, 2005, p. 52), are used to guide strategy implementation (Ferreira & Otley, 2009, p. 270), are used to guide operational target setting (Ferreira & Otley, 2009, p. 271), and have a clear time horizon for their achievement (Collins & Rukstad, 2008, p. 84). Ferreira & Otley (2009, p. 270), Hambrick & Fredrickson (2005, p. 51) and Merchant & Van der Stede (2007, p. 218) explicitly separate strategic objectives and strategy.

Overview. AlphaCo, BetaCo and DeltaCo consider strategic objectives as a highly important performance management practice. Even though strategy is sometimes hard to develop given the uncertainty case studies have to deal with, case studies are still certain about their strategic objectives. Strategic objectives and their distinction from strategy has profound impact on case studies' strategic management processes. Strategic objectives follow a clear design: they derive from mission, vision and key success factors, cover several performance perspectives related to business model and growth strategy, are precise and measurable, and have a clear time horizon. The entrepreneurship literature emphasizes the relevance of clear strategic focus on firm growth (Baum, Locke, & Smith, 2001, pp. 293, 297; Kolvereid, 1992; Siegel, Siegel & MacMillan, 1993, p. 173). Table 90 in appendix B4 provides evidence from three different data sources.

Derivation of strategic objectives. AlphaCo, BetaCo and DeltaCo's strategic objectives work towards case studies' mission and vision statements as well as key success factors. The growth vision and key success factors have the strongest influence on strategic objectives. AlphaCo, for instance, aspires to become a "global market leader in the development and operation of standardized and scalable, workflow-oriented and digitally interconnected high-end [...] technology platforms 'as a service' enabled by a global allocation of experts". Accordingly, AlphaCo's founders formulate strategic objectives in their strategic business plan: "Our growth strategy: x own operated locations, x international locations, with in total x imaging devices, strategic sales co-operation with global acting partners, high total profitability, high potential for additional upsides by complementary business models." And: "More than x imaging devices and more than x million exams by 2019."

Strategic management process. AlphaCo, BetaCo and DeltaCo's strategic management process appears to make a distinction between strategic objectives and strategy (see figure 26). Founders start the strategic management process by formulating strategic objectives. These strategic objectives are then discussed with the middle management and strategies are elaborated to achieve them. At DeltaCo, for instance, top management sets strategic objectives to provide an overall direction. The strategy to achieve these strategic objectives is then developed together with the middle management during the "DeltaCo Strategy Week".

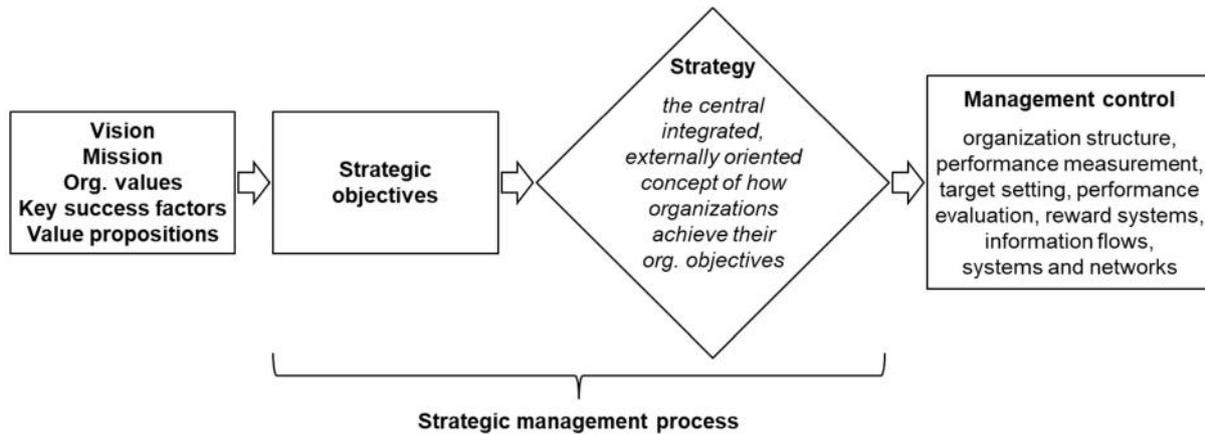


Fig. 26: Strategic objectives, strategy and control (adapted from Hambrick & Fredrickson, 2005, p. 53)

Strategic objectives for performance perspectives. When setting their strategic objectives AlphaCo, BetaCo and DeltaCo use several perspectives on their performance ambitions. These perspectives are conceptually similar to Kaplan & Norton's (2001, p. 23) four balanced scorecard perspectives, i.e. the financial, customer, internal business processes as well as learning and growth perspectives. However, case studies go beyond these four perspectives. In line with their visions and the nature of their businesses, AlphaCo formulates strategic objectives for its suppliers, while BetaCo and DeltaCo formulate strategic objectives for product development. BetaCo adds a strategic objective related to their new investor and the series C they want to achieve.

Attributes of strategic objectives. Case studies formulate their strategic objectives precisely, specific, often measurable, and with a clear time horizon. AlphaCo, for instance, uses high-level performance indicators to make their strategic objectives precise and measurable. One strategic objective, for instance, reads "more than x imaging devices and more than x million exams by 2019." This strategic objective provides a tangible way of achieving both the growth vision as well as advancing AlphaCo's business model, which is centered on process efficiency.

Strategic objectives also use clear time frames. Time horizons for strategic objectives vary across both case studies and within strategic objectives. Time horizons are dependent on how dynamic the business environment is, what the nature of the business is, and most importantly how much an organization already learnt about its business opportunity. AlphaCo operates in a stable market and the organization is quite advanced in learning about their business model; they thus set strategic objectives of the longest time horizons of up to three years. In contrast, BetaCo is not being profitable yet and is still learning about their market opportunity; accordingly, they set strategic objectives with the shortest time frames of one year.

Use of strategic objectives. AlphaCo, BetaCo and DeltaCo use strategic objective to expand opportunity seeking and to focus attention. Two design choices of strategic objective expand

opportunity seeking: Strategic objectives are formulated from different perspectives; and the strategic management process distinguishes strategy formulation in strategic objectives and strategies to achieve them. Two design choices focus attention and search: Strategic objectives make vision, mission and key success factors clear and actionable; and strategic objectives are precise, usually measurable and have a clear time horizon to avoid ambiguity and vagueness.

Emergent theme – the value proposition as organizational objective

Value proposition as organizational objective. AlphaCo, BetaCo and DeltaCo include their value propositions into their organizational cultures, as elaborated in chapter 4.1.1. Founders appear to understand the value proposition statement as a form of organizational objective. Founders do so to make the value proposition as a concept – delivering and searching offerings that customers value – an actionable performance management practice.

Case studies’ value proposition slogans as well as the more detailed value propositions read like organizational objectives. AlphaCo intends to provide “diagnostic imaging as a service”. This is a goal: Every time a radiologist can use AlphaCo’s diagnostic imaging centers as a service, i.e. without owning them and being able to pay per image, the goal is achieved. At the same time the value proposition is an overarching objective for each diagnostic center. BetaCo wants to be “your expert for real vitality”. This is a goal to be achieved for each single customer. DeltaCo formulates "data driven app marketing" as their value proposition slogan. Their goal is to do marketing for customers’ apps using data to deliver app installs.

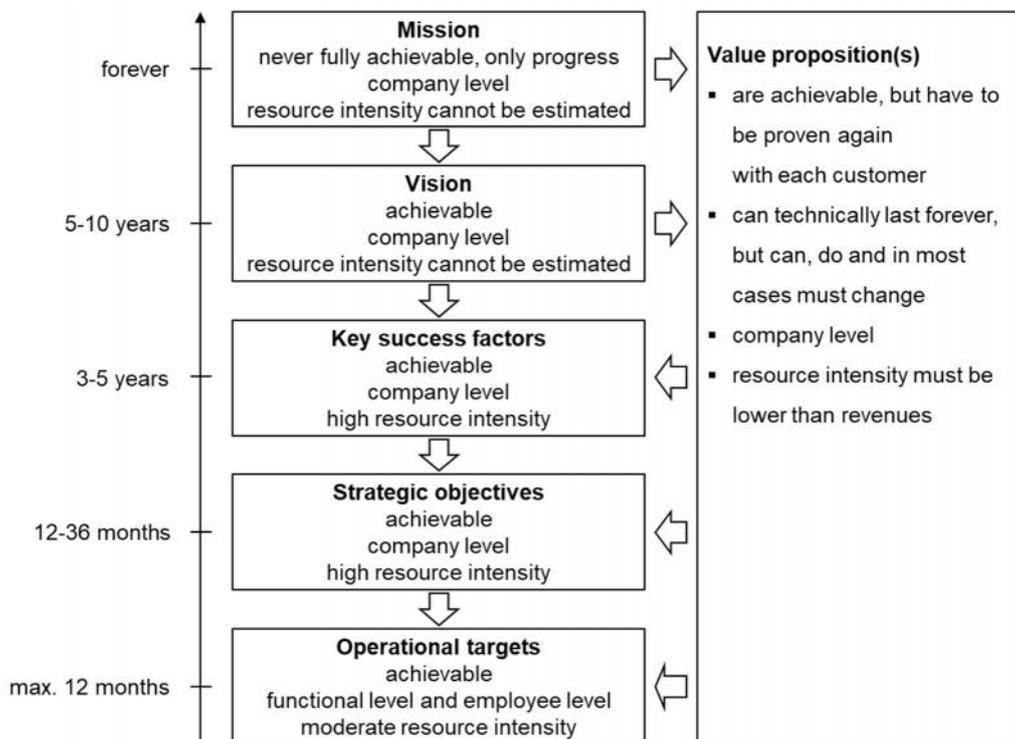


Fig. 27: The sequence of organizational objectives and their interactions with value propositions

Interrelationships of value propositions with other organizational objectives. The value proposition statements interact with all of the other organizational objectives, as illustrated in figure 27. Vision and mission statements are large organizational objectives in terms of resource intensity, achievability and time horizon. Mission and vision are a reference point to deliver on current value propositions, to improve current value propositions and to inspire new value propositions. Key success factors are derived from known value propositions and not from vision and mission only. Strategic objectives and especially operational targets are dependent on known and new value propositions to customer groups.

This study distinguishes organizational objectives along the dimensions of achievability and time horizon. Both dimensions are different for the concept of value propositions. In order to grow, a new venture has to prove the ability to deliver its value proposition reliably in each customer transaction. The value proposition can be achieved only one customer at a time – it is constantly achieved and not achieved. In terms of time horizon, the value proposition can, technically, last forever. However, in order to grow and reflect learnings, the value proposition can and must change and new value propositions are explored.

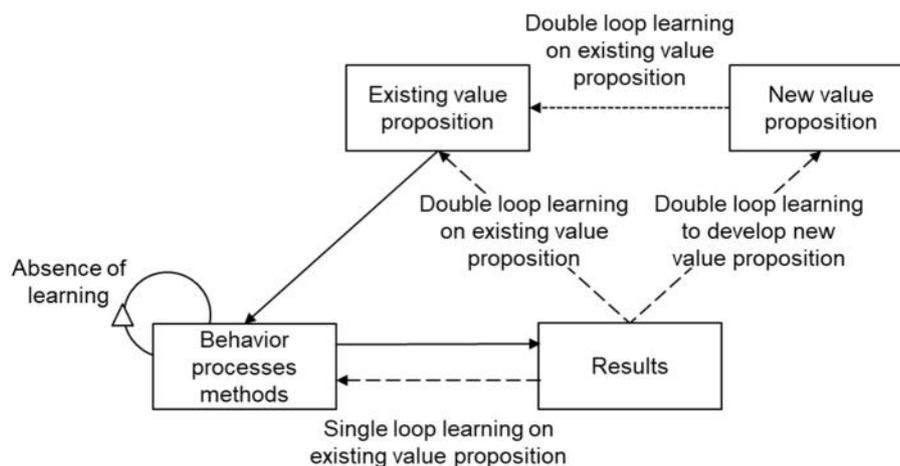


Fig. 28: Organizational learning on existing and new value propositions

Use of the value proposition as organizational objective. This study proposes that much can be gained from understanding the value proposition as organizational objective (see figure 28). First, the value proposition articulates mission and vision. Second, new ventures start out with a value proposition that attracts at least users and at best customers. They do not start with a grand mission or a sharp vision. In this sense, the value proposition is the first overarching, company-wide organizational objective. Third, the value proposition appears to be a nexus, a reference point, a meta-objective influencing key success factors and strategic objectives. Fourth, operational targets and the operational target setting process can be used to facilitate organizational learning about value propositions. Finally, understanding the value proposition as an organizational objective defines the concept as a performance management practice,

which can be linked to other practices. The value proposition as a performance management practice can be used to focus attention on existing value propositions, and to expand opportunity seeking about new value propositions.

Emergent theme – the scaling unit concept

Definition. AlphaCo design their performance management system fundamentally different at their headquarters functions versus their diagnostic centers. This particular design appears to be the foundation of AlphaCo’s growth strategy. These observations correspond to the insights of a paper written by Von Krogh & Cusumano (2001) on “three strategies for managing fast growth” as well as with my experiences with Groupon’s scaling strategy (Engelhardt, Gassmann & Möller, 2019). These sources inspire a concept that can be termed the ‘scaling unit’. The scaling unit shall be defined as that part of the organization’s value chain, which delivers the existing value proposition to customers, whose process know-how can be standardized, and whose process know-how can be duplicated to further customer groups, markets and products.

AlphaCo’s scaling unit. AlphaCo’s scaling unit is the diagnostic center (see figure 29). AlphaCo grows by opening up new diagnostic centers. The Head of Finance states: “Our objectives are growth through new centers, [...]” (Head of Finance). AlphaCo’s strategic business plan outlines: “Our growth strategy: x own operated centers, x international centers, [...]”.

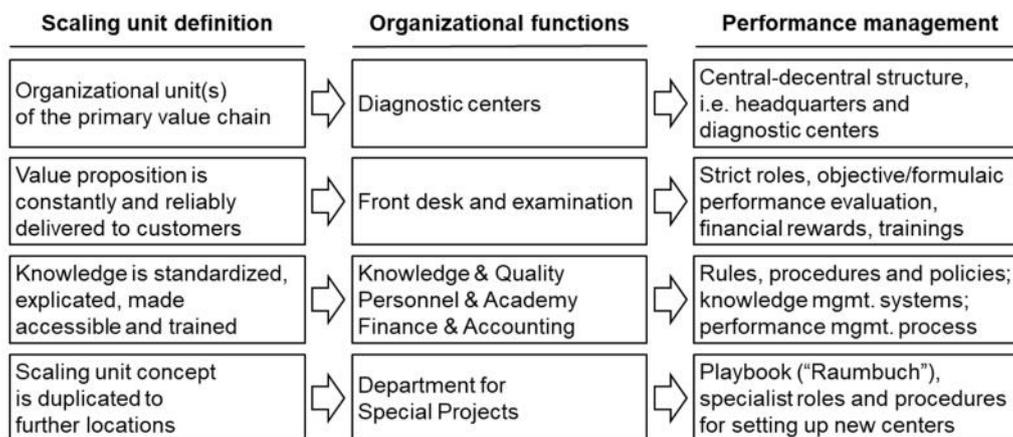


Fig. 29: AlphaCo’s diagnostic centers as scaling units and implications for performance management

Diagnostic centers. AlphaCo’s diagnostic centers are a separated organizational unit of the overall value chain. The Head of IT Infrastructure makes this distinction clear: “[...] The processes in the decentral locations are very standardized, while the processes in the headquarters must be flexible.” The diagnostic centers are that part of the value chain that most directly delivers AlphaCo’s value propositions to all customer groups. For doing so, AlphaCo adopted a central-decentral organization structure, with a central headquarters and decentral diagnostic centers.

Front desk and examination. To deliver the value propositions in the diagnostic centers requires to know about “efficiency potentials in the areas of technology, processes, organisation and architecture” (AlphaCo company profile). This knowledge is standardized and made explicit. The front desk and examination in each diagnostic center deliver the value propositions to all three customer groups on a constant and reliable basis.

Departments for Knowledge & Quality and Personnel & Academy. The Department for Knowledge & Quality is established for gathering, auditing, standardizing and distributing the know-how at the intersection of technology, process know-how, organization and architecture of the diagnostic centers. The Department for Personnel & Academy is established to train employees in diagnostic centers about process know-how as well as about the performance management system, which ensures reliable delivery of value propositions.

Department for Special Projects. This explicit and accessible knowledge allows AlphaCo to grow by opening up new diagnostic centers. As soon as the technological, organizational and processual knowledge is standardized sufficiently, it can be duplicated to further locations. AlphaCo grows by duplication and can scale rapidly despite its health care business. AlphaCo’s founders have created an organizational function to facilitate this duplication. The Head of Strategic Projects explains: “We have an interior playbook (“Raumbuch”) with a long order list of infrastructure necessary for each new center.” This playbook includes items such as key requirements for new decentral locations, required architectural infrastructure, key processes, organizational setup as well as performance management for the staff in diagnostic centers. Using such a playbook allows to acquire, share, interpret, store and retrieve critical know-how and information.

Performance management in diagnostic centers. Performance management in diagnostic centers consists of regular formal performance evaluations relative to roles and responsibilities in the course of the “Performance Management Process”. The “Performance Evaluation Tool” uses more than 100 questions to be rated. Questions are clustered in four “performance dimensions” and aggregated to the “Index Score”, which is a performance measure for each employee. The “Index Score” determines promotions, salary increases and trainings.

Roles and responsibilities in diagnostic centers are standardized (e.g. in the job descriptions policy “Verantwortungsbereiche Diagnostikzentrum”) and come with clear guidelines as to how these roles are compensated (compensation policy “Regelvergütung”). The performance management system in diagnostic centers is completed with regular formal feedback sessions as well as trainings and professional developments. Performance is rewarded with promotions and salary increases; taking over extra responsibilities is rewarded with “extra payments”. The growth supporting functions of Finance & Accounting, Knowledge & Quality and Personnel & Academy administrate the performance management system in diagnostic centers – its roles

and responsibilities, rules, procedures and policies, performance evaluation processes, financial rewards, and especially the knowledge management system.

Use of the scaling unit. Performance management practices in AlphaCo's diagnostic centers – use of defined roles, rules, process procedures, policies, objective performance evaluations, and financial incentives – are designed and used to focus attention on delivering value propositions efficiently. Scaling units deliberately limit search to small efficiency improvements in behavior, methods and processes. Diagnostic centers' focus on single loop learning is the basis for AlphaCo's strategy of growing through duplication of diagnostic centers to further locations.

At AlphaCo, headquarters functions take over opportunity seeking and learning. This is particularly true for the business specific growth supporting functions, i.e. Knowledge & Quality, Personnel & Academy, and Special Projects. More precisely, scaling units focus of attention on known value propositions requires business specific growth supporting functions as counterparts. Their performance management system is designed completely different: emphasis on vision and organizational values, broad roles and responsibilities, fewer rules, participation in setting of strategic objectives and operational targets, subjective performance evaluation with frequent situational feedback, no financial rewards except of base salaries. Founders' design and use of diagnostic centers as scaling units results in – allows – the structural separation of organizational learning modes.

4.1.5. Key performance measures

Ferreira & Otley's (2009, p. 267) fifth question is:

“What are the organization's key performance measures deriving from its objectives, key success factors, and strategies and plans? How are these specified and communicated and what role do they play in performance evaluation? Are there significant omissions?”

Ferreira & Otley's (2009, p. 271) fifth performance management system component includes theoretical elaborations on five themes: the design of performance measurement, the use of key performance measures, the role of key performance measures in performance evaluation, potential omissions in performance measurement as well as strategic performance measurement systems. In addition, the investigation into AlphaCo, BetaCo and DeltaCo identifies two interesting and relevant emergent themes: BetaCo's “Strategic KPI System” and DeltaCo's “Growth Cycle” as examples for integrated strategic performance measurement systems as well as performance measurement and organizational culture.

Design of performance measurement

Definitions. Ferreira & Otley (2009, p. 271) define: “Key performance measures are the financial or non-financial measures (metrics) used at different levels in organizations to evaluate success in achieving their objectives, key success factors, strategies and plans, and thus satisfying the expectations of different stakeholders.”

Neely, Gregory & Platts (1995, p. 81) distinguish performance measurement, performance measures and performance measurement systems and define them accordingly: “Performance measurement can be defined as the process of quantifying the efficiency and effectiveness of action. A performance measure can be defined as a metric used to quantify the efficiency and/or effectiveness of an action. A performance measurement system can be defined as the set of metrics used to quantify both the efficiency and effectiveness of actions.”

Ferreira & Otley (2009, p. 271) emphasize: “The question is explicit about whether performance measures are derived from objectives, key success factors, and strategies and plans to the extent that identification of suitable performance measures is part of the strategic implementation process and indicative of the alignment between operations and strategy.”

Overview. AlphaCo, BetaCo and DeltaCo consider performance measurement as an important practice to drive the growth of their companies. Financial and non-financial KPIs are present in their organizations. Measuring is part of founders’ approach to entrepreneurship. Even more, measuring and quantifying is part of case studies organizational cultures. This study identifies three types of KPIs: strategic KPIs, growth KPIs and ops KPIs. As management by personality reaches limits, AlphaCo, BetaCo and DeltaCo are all in the process of formalizing their performance measurement approaches and develop strategic performance measurement systems. These observations correspond to previous findings (Collier, 2005; Dávila & Foster, 2005, 2007; Dávila, Foster & Li, 2009; Jazayeri & Scapens, 2008; Moores & Yuen, 2001; Simons, 1995, p. 127; Strehle, Katzy & Dávila, 2010; Su, Baired & Schoch, 2015). Table 91 in appendix B5 provides empirical evidence from three different data sources.

Design of performance measurement. AlphaCo, BetaCo and DeltaCo use financial and non-financial key performance measures. Financial KPIs are consistent across case studies, corresponding to standards for financial statements. Case studies focus on financial KPIs from the profit & loss statement. In contrast, non-financial KPIs are more specific to case studies’ business models and growth strategies. Table 22 provides an overview.

AlphaCo, BetaCo and DeltaCo design their performance measurement approach determining three types of financial and non-financial KPIs. First, case studies use KPIs for outlining and learning about vision, key success factors and strategy; they are called ‘strategic KPIs’. Second, case studies use a few selected KPIs for roughly aligning growth strategies and operations in particular for strategic-recurring processes; they are called ‘growth KPIs’. Third, case studies

use KPIs for measuring and monitoring operational processes; they are called ‘ops KPIs’. As per Anthony’s (1965) control framework, strategic KPIs relate rather to strategic planning, growth KPIs relate to management control, and ops KPIs are used for operational control.

Strategic KPIs and growth KPIs include financial and non-financial key performance measures, while ops KPIs are typically non-financial indicators. KPIs can be used as strategic KPIs, growth KPIs and sometimes even ops KPIs at the same time. In particular revenue is used on several levels: to measure progress towards vision, key success factors and strategy, and to align strategy and operations.

All case studies intend to improve strategy implementation with strategic performance measurement systems. Strategic performance measurement systems integrate mainly strategic and growth KPIs. AlphaCo initiated an internal project to introduce a formal strategic performance measurement system called the “AlphaCo Process House” at the time of investigation. BetaCo and DeltaCo used our action projects to develop strategic performance measurement systems, the “BetaCo Strategic KPI System” and the “DeltaCo Growth Cycle”.

	AlphaCo	BetaCo	DeltaCo
Vision	Revenue Nr. of diagnostic centers	Gross revenue Nr. of customers	Gross and net revenue Nr. of app installs
Key success factors	F-KSF: revenue and EBIT O-KSF: Nr. of employees and Nr. of new hires P-KSF: utilization rate	F-KSF: gross revenue, cash burn O-KSF: Nr. of new hires (especially middle managers) P-KSF: conversion rate	F-KSF: gross & net revenue O-KSF: Nr. employees in product and technology P-KSF: retention rate
Strategy financial KPIs	Revenue (totals and Centers) Personnel costs OPEX (HQ vs. Diagnostic Centers) EBITDA and EBITDA margin EBIT and EBIT margin Liquidity Investments (CAPEX)	Gross revenue Contribution margin 1 Contribution margin 2 EBITDA and EBITDA margin Avg. basket size Working capital, esp. inventory Net cash flow (= cash burn)	Gross and net revenue Gross profit margin EBITDA and EBITDA margin "normalized cash EBITDA" Avg. revenue per customer ("ARPA") Operating cash flow
Strategy non-financial KPIs	Nr. of diagnostic centers Nr. of centers in planning Nr. of imaging devices Nr. of strategic partnership Nr. of exams (scans) Exams per imaging device p.a.	Nr. of visitors Nr. of customers Nr. of products Rebuyer rate Bounce rate Nr. of new hires	Nr. of offices Nr. of customers (buyers) Customer retention rate Nr. of media partners (sellers) Nr. app installs Nr. employees in product & tech
Management control	Revenue and costs Utilization rate (avg. exams per device per hour)	Revenue and costs Conversion rate (purchases / visits)	Revenue and costs Customers, partners, customer retention rate
Operational control	Customer Services: e.g. Nr. of calls, Nr. of calls answered, avg. call time	Customer Support: e.g. tickets to orders, time to ticket resolution	Business Operations: e.g. number of tasks, error rate, response time
Sources	Strategic business plan, KPI dashboard centers, KPI dashboard operations, KPI dashboard customer service, performance management presentation	Strategic business plan, financial business plan, online marketing KPI report, private label revenue analysis, conversion rate analysis, Weekly Management Update	Strategic business plan, financial business plan, Monthly KPI report (March 2016), Monthly KPI report (April 2016), Monthly KPI report (May 2016), Bi-weekly KPI report

Tab. 22: Key performance measures at AlphaCo, BetaCo and DeltaCo

Strategic KPIs. Case studies use financial and non-financial KPIs to outline their growth visions, key success factors and strategy. All case studies strongly use revenue to measure progress towards their visions. In addition to revenue, they use non-financial KPIs that relate to their businesses specifically. AlphaCo uses their number of diagnostic centers. BetaCo uses number of customers and number of products. At DeltaCo the number of app installs through DeltaCo's service makes their vision tangible. In fact, DeltaCo even has an "app installs meter" on their website counting millions of app installs through DeltaCo's technology platform.

In line with their growth visions, AlphaCo, BetaCo and DeltaCo use revenue as KPIs to outline the financial key success factor. For the organizational key success factor, case studies use number of employees and successful new hires as performance measures. To outline the product key success factor, case studies use KPIs that are customized to their businesses. AlphaCo highlights the average utilization rate per imaging device. BetaCo emphasizes the conversion rate. DeltaCo emphasizes their customer retention rate.

Growth KPIs. Most interesting are those key performance measures used for implementing strategy. AlphaCo, BetaCo and DeltaCo focus on a combination of revenue and non-financial KPIs – with the explicit purpose of managing their growth. They also control costs, of course, but their focus is clearly on revenue and business specific non-financial growth KPIs.

Financial growth KPIs. Financial growth KPIs mainly relate to revenue (gross revenue, net revenue, contribution margins, profit margins), costs (cost of goods sold, total operational expenses, particularly personal expenses and marketing expenses), and bottom line results (usually EBITDA and EBIT). Strong focus is on revenue. Revenues are broken down in revenue streams and – potentially – allocated to teams and managers responsible for generating this revenue. Revenues are compared to targets from financial business plans in all case studies. BetaCo and DeltaCo also benchmark revenues with previous months with the expectation of month-over-month improvements.

AlphaCo highlights revenue, costs and EBIT in their strategic business plan. The CEO states: "Only regional managers have variable compensation that is linked to revenue. This bonus is fixed in the first full year, so that learning processes can take place." Overall, AlphaCo does not use financial KPIs as intensely as BetaCo and DeltaCo.

At BetaCo, the management of growth concentrates on revenue. One of the monthly all hands meeting presentations states: "Revenue development and outlook - growth has recently slowed down - pick up via TV expected. Comparison historic revenues and business plan 2015. BetaCo is going to achieve over EUR x million revenue in 2015." In the "Weekly Management Update" report almost all functions are made responsible for revenue broken down in revenue streams as well as contribution margins dependent on controllability by functions' managers. Revenue

development is benchmarked to previous months and constantly compared to financial business plan targets.

DeltaCo manages growth in revenues as the most important KPI as well. The CRO argues that the focus on revenues aligns strategy and operations: “The reason behind net revenue targets in most teams is we want to align departments with each other, with the company and with the customer.” International sales offices are controlled tightly using financial KPIs. Gross revenue, net revenue and margin in % are the most frequently used KPIs in the “Monthly Operational Reporting”. CEO, COO and CRO discuss this report with middle managers and managing directors in international sales offices in the “Management Call Operations”. In this meeting and call, targets and actual outcomes for gross revenue and net revenue are discussed intensely.

Non-financial growth KPIs. AlphaCo, BetaCo and DeltaCo use non-financial growth KPIs that are specific to their business models and growth strategies. While case studies’ focus on revenues as a financial growth KPI is not surprising, the thoughtful specification and intense dedication to non-financial growth KPIs is interesting.

AlphaCo’s business model is grounded in increasing process efficiency. Thus, they highlight the average utilization rate per imaging device. The utilization rate is calculated as the average number of exams per imaging device per hour. Their strategic business plan claims: "More than x% growth in the utilization of imaging devices is possible via the AlphaCo business model." The utilization rate aligns strategy and operations: as long as the utilization rate is on track, operations are doing well, and the strategy is being followed. However, as AlphaCo’s CEO noticed, the utilization rate needs further operationalization in the “AlphaCo Process House”.

BetaCo’s e-commerce business model is, essentially, to attract visitors to their website and make them buy. Thus, they highlight the conversion rate to align strategy and operations. The conversion rate is calculated as the number of actual purchases divided by the number of website visits. The presentation of an all-hands meeting announces: "We have set up two cross-functional 'TAG TEAMS' in order to tackle the conversion rate challenge." The conversion rate is a non-financial ratio metric that can be used to manage strategy as it encompasses several functions of BetaCo’s primary value chain. The conversion rate measures how successful the Marketing & Brand team gets potential customers (“visits”) on their platform, how successful the Product Management team’s platform tempts them to actually buy and how successful the Purchase team and the Category Management team purchase and place products on the website.

DeltaCo is a technology platform that brings together customers (buyers) and partners (sellers, also called media partners). The strategic business plan states that DeltaCo’s “diversified business model across entire mobile app marketing ecosystem [benefits] from powerful network effects” and refers to the virtuous cycle on DeltaCo’s platform. The more customers DeltaCo has, the more media partners they can convince; the more media partners DeltaCo has

on its tech platform, the more attractive is the platform to customers. Thus, DeltaCo manages their growth strongly with these two KPIs. The retention rate is of high relevance to managers and employees. The retention rate is that percentage of customers that continues to work with DeltaCo. The retention rate appears to provide feedback on how well DeltaCo's technology works relative to competitors, i.e. to what extent it can generate app installs for customers.

Non-financial growth KPIs are overarching KPIs. They are specific to case studies' business models and are the core of each firm's growth strategy. Non-financial growth KPIs also align revenue and costs. In AlphaCo's case: The higher the utilization rate, the more efficient is the usage of all resources, i.e. imaging devices, personnel and diagnostic centers' infrastructures. In BetaCo's case: The higher the conversion rate, the more revenue is generated out of marketing investments and the platform infrastructure. In DeltaCo's case: Due to network effects, the more customers and partners are integrated on the technology platform, the higher the value for all platform participants. And the higher the retention rate, the less investment is needed for new customer acquisition.

Ops KPIs. AlphaCo, BetaCo and DeltaCo use KPIs also for operational control. Although case studies' organizations are young and change quickly, founders standardize some operational processes early on. These processes are controlled by ops KPIs. Ops KPI are usually non-financial KPIs. Consistently across all case studies, operational processes for post-sale customer services are monitored using non-financial ops KPIs. Examples include number of calls answered, the ratio tickets to orders, or the response time to customer requests.

Use of key performance measures

Definition. Ferreira & Otley (2009, p. 271) are explicit that "this question relates to Simons' (1995) critical performance variables; that is, those measures that are directly linked with the success of the organization. However, the question also encompasses Simons' (1995) 'interactive' use of control systems to the extent that it refers to those measures on which senior managers focus their attention and use to drive subordinate behavior."

Simons (1995) states that "the use of profit planning, which is the prototypical diagnostic control system in many firms, as an interactive control system presents a special case [...]" (p. 119) and "profit plans, then, must be used both diagnostically and interactively" (p. 120). In other words, profit planning, i.e. managing revenues, costs and profits, and associated financial key performance measures can be used both diagnostically and interactively.

Overview. AlphaCo, BetaCo and DeltaCo use KPIs in line with the three levels proposed by Anthony (1965). On the strategic planning level, a strategic KPIs outline vision, key success factors and growth strategies; use is interactive. On the management control level growth KPIs are used to drive growth. Revenue is *the* financial growth KPI consistently used across AlphaCo, BetaCo and DeltaCo. Non-financial growth KPIs relate to firms' business models

and growth strategies. Growth KPIs are comprehensive, overarching and encompass several functions of the primary value chain. Consistent with Simons' (1995, p. 119) "profit planning as special case", the use of financial and non-financial growth KPIs is both interactive and diagnostic. The use of growth KPIs combined with "over-communication" (DeltaCo's COO) appears to compensate for more comprehensive performance measurement systems, at least for some time. On the operational control level, a set of selected ops KPIs monitor repetitive operational processes; use is clearly diagnostic. Observations resonate with previous findings (Cardinal, Sitkin & Long, 2004, especially p. 412; Simons, 1995, p. 127; Su, Baird & Schoch, 2015; Tuomela, 2005). Table 92 in appendix B5 provides empirical evidence from two different data sources. Figure 30 provides an overview.

Strategic KPIs. On the strategic planning level, AlphaCo, BetaCo and DeltaCo use strategic KPIs to outline vision, key success factors and their growth strategies. In all cases, revenue plays an overarching role to vision, key success factors and strategy. Non-financial strategic KPIs are specific to case studies' business models and growth strategies.

Case studies do not limit themselves (yet) to a specific set of KPIs to outline vision, key success factors and growth strategy. AlphaCo, BetaCo and DeltaCo need to make their vision, key success factors and strategy clear and tangible – but at the same time they need to learn more about their business to fully commit to an integrated performance measurement system. Therefore, case studies suggest a selection of KPIs throughout the whole organization, debate them frequently, collect constant and abundant feedback, learn from performance measurement and as a consequence become better at measuring and quantifying performance. The use of strategic KPIs is consistently interactive.

Growth KPIs. The use of growth KPIs on the management control level is most interesting. AlphaCo, BetaCo and DeltaCo use growth KPIs both diagnostically and interactively. AlphaCo's CEO elaborates: "The business is highly measurable but many measurable KPIs are not yet collected. We need to become better at measuring to understand our business." BetaCo's CEO outlines: "The KPI system shall be something like a framework for learning about our business. From this framework we can then derive a catalog of initiatives of what goes right and what and why things go wrong." DeltaCo's COO states: "We need to balance our culture of ownership with management's information and control needs in a management by exception approach." These statements illustrate case studies' approach to increase control through diagnostic use and to facilitate organizational learning through interactive use of key performance measures.

Financial growth KPIs. AlphaCo, BetaCo and DeltaCo use financial growth KPIs diagnostically and interactively. Revenue is the most important financial growth KPI. This finding corresponds to Simons' (1995, pp. 119-121) findings on the use of profit planning. On

the one hand, all case studies – most notably BetaCo and DeltaCo – break down revenue and set minimum financial business plan targets according to controllability over revenue streams. Deviations from these targets receive high attention, trigger debate and initiate attempts to correct under-performance. Such use is diagnostic. On the other hand, revenue is the subject of frequent face-to-face discussions across all levels of the organization. All case studies constantly debate about what actions might influence revenue, about underlying assumptions, and about special initiatives. Such use is interactive.

Non-financial growth KPIs. AlphaCo, BetaCo and DeltaCo use non-financial growth KPIs diagnostically and interactively. Non-financial growth KPIs are specific to case studies' business models and growth strategies.

AlphaCo emphasizes utilization rate as their non-financial growth KPI. The utilization rate aggregates several of AlphaCo's core business processes. On the one hand, the viability of AlphaCo's efficiency-based business model requires that each imaging device's utilization rate is not to drop below a certain level. A drop in utilization rate would indicate issues in core processes in any of AlphaCo's diagnostic centers. Hence, the strategic business plan determines targets for utilization rates. Such use is diagnostic. On the other hand, AlphaCo's founders and their team constantly evaluate and intensely learn what might help to drive up the utilization rate. The utilization rate prompts founders and their teams to continuously innovate in diverse areas. The company website proudly states: "All efficiency potentials in the areas of technology, processes, organisation and architecture have been implemented by the AlphaCo concept and are further optimized on an ongoing basis." Such use is interactive.

BetaCo emphasizes the conversion rate as their non-financial growth KPI. As outlined above, the conversion rate encompasses and aligns several of BetaCo's functions. The conversion rate is the heart of what BetaCo's e-commerce business is about: to convert interested website visitors into paying customers. On the one hand, the conversion rate is also not to decrease below a pre-defined target level, which is derived from an industry benchmark, to ensure BetaCo's commercial viability. The conversion rate is thus used diagnostically. On the other hand, BetaCo's founders and their teams are frequently discussing about their "focus on conversion rate to push topline" ("Weekly Management Update" report) and how to "tackle the conversion rate challenge" ("First Monday Meeting" presentation). They constantly analyze and evaluate what actions and initiatives improve the conversion rate. Such use is interactively.

DeltaCo emphasises customers, media partners and retention rate as non-financial growth KPIs. These three KPIs are essential to DeltaCo's business model and growth strategy. On the one hand, the number of active customers and the number of media partners should not drop below a certain level, so that the platform stays attractive for both sides. The retention rate works in the same direction. If these three KPIs decrease too strongly, an issue in core business processes

or the technological platform is indicated. The use of these three growth KPIs is, therefore, diagnostic. On the other hand, DeltaCo’s organization is learning constantly how to drive these three growth KPIs. Our action project, which developed the “DeltaCo Growth Cycle”, put even more emphasis on exactly these three key performance measures. DeltaCo uses their non-financial growth KPIs interactively.

Ops KPIs. AlphaCo, BetaCo and DeltaCo use ops KPIs to monitor and control operational processes. Activities and processes, for instance in customer service, are standardized and measurable. Rules, procedures and policies are intensely used. Performance targets are pre-determined. If deviations occur, then managers and employees know how to correct them. Ops KPIs are used clearly diagnostically.

Control levels (Anthony, 1965)	KPI types	AlphaCo	BetaCo	DeltaCo	Type of use
Strategic planning level Strategic KPIs for vision, key success factors and strategy	Strategic KPIs	e.g. revenue, centers in planning, employees, utilization rate	e.g. revenue, customers, products, employees, conversion rate	e.g. revenue, app installs, employees, retention rate	⇒ Interactive use
Management control level Growth KPIs to control, learn and align strategies and operations	Growth KPIs	Revenue & costs Utilization rate	Revenue & costs Conversion rate	Revenue & costs Customers, partners, retention rate	⇒ Interactive use ⇒ Diagnostic use
Operational control level Ops KPIs to monitor repetitive operational processes	Ops KPIs	e.g. Nr. of calls answered (Customer Services)	e.g. time to ticket resolution (Customer Support)	e.g. response time, error rate (Business Ops)	⇒ Diagnostic use

Fig. 30: Use of strategic KPIs, growth KPIs and ops KPIs

Types of KPIs and Simons (1995). Strategic KPIs relate to Simons’ (1995, pp. 93-95) concept of strategic uncertainties that are managed by interactive control systems. Financial growth KPIs relate to Simons’ (1995, pp. 119-121) special case of profit planning as a management control system that is used both diagnostically and interactively. Non-financial growth KPIs can be conceptualized as a combination of Simons’ (1995, p. 95) critical performance variables and strategic uncertainties. This is what makes non-financial growth KPIs so essential to case studies. Ops KPIs are not treated by Simons, as he concentrates on strategic planning and management control. Case studies use ops KPIs for standardized processes and they use them clearly diagnostically.

Role in performance evaluation

Definition. Ferreira & Otley (2009, p. 271) ask “[...] what role do [key performance measures] play in performance evaluation”. They refer to the use of financial and non-financial performance measures “at different levels in organizations to evaluate success in achieving their objectives, key success factors, strategies and plans [...]” (p. 271). This study considers the following organizational levels: organizational or company level, the functional or team level, and the level of individual employees (Ferreira & Otley, 2009, p. 272).

Overview. AlphaCo, BetaCo and DeltaCo allocate different performance evaluation roles to key performance measures. KPIs’ roles in performance evaluations and what use – diagnostic use or interactive use – is made for KPIs is mutually dependent. Conditions for KPIs’ roles in performance evaluations include: the ability to outline vision, key success factors and growth strategy (related to strategic KPIs); the ability to align strategy and operations (related to growth KPIs); and the ability to standardize and measure recurring activities and operational processes (related to ops KPIs). Associated with KPI roles are approaches to performance evaluation such as formal and informal as well as subjective, objective or mixed (Ferreira & Otley, 2009, p. 272; Simons, 1995, pp. 71-85, 108-121). Table 93 in appendix B5 provides empirical evidence from two different data sources. Figure 31 illustrates these relationships.

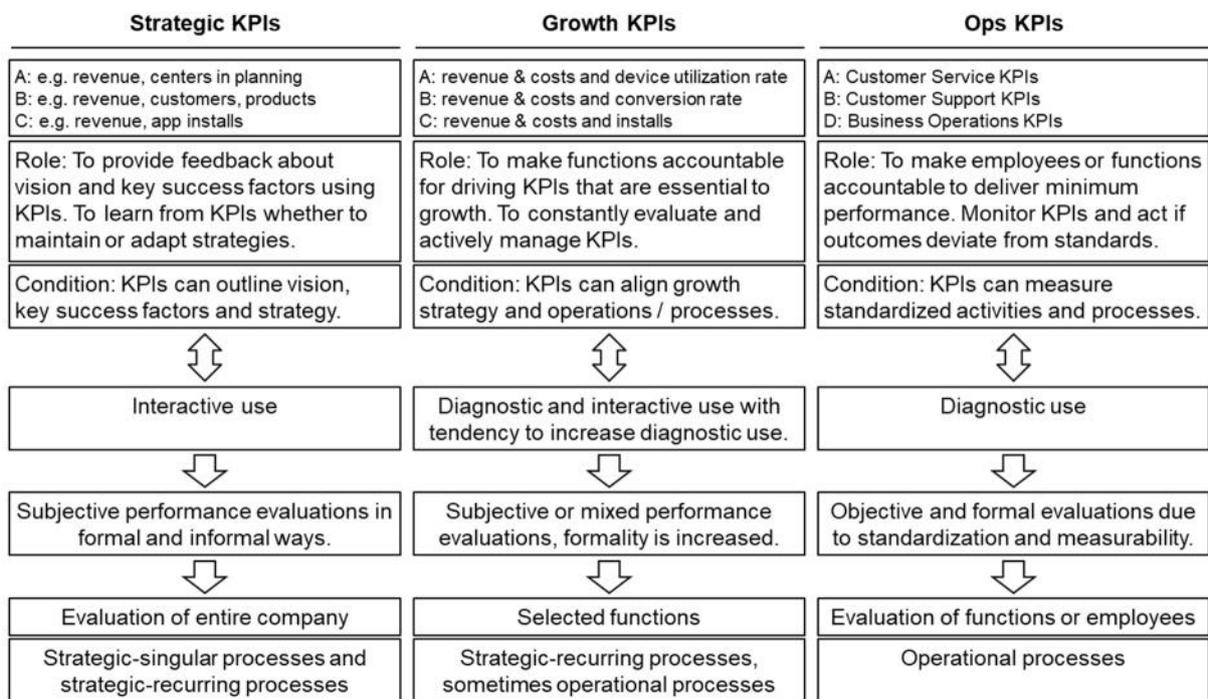


Fig. 31: Performance measurement and performance evaluations

Strategic KPIs and performance evaluation. Strategic KPIs are used interactively. Therefore, evaluation is generally subjective and is done in both formal ways (e.g. in regular meetings) and informal ways (e.g. in situational informal feedback). Strategic KPIs can be used to provide feedback on progress and success of the whole organization in broad terms. In this role strategic KPIs also provide credibility and legitimacy organizations. Strategic KPIs mainly relate to strategic-recurring processes, and sometimes strategic-singular processes. Interestingly, strategic KPIs are evaluated by all stakeholders: investors and founders of course, but also team managers, job applicants, employees and even business partners and suppliers.

Growth KPIs. Growth KPIs make functions and middle managers accountable for driving KPIs that are essential to their business models and growth strategies. The role of growth KPIs is to

allow for evaluation of performance and the active management of critical performance dimensions. Growth KPIs can be used, when performance dimensions can be determined, performance can be measured, and KPIs are able to align growth strategy and operations.

Growth KPIs' use is diagnostic as well as interactive. Associated with this balanced use, performance evaluation is a mix between objective and subjective approaches. Performance evaluation processes are increasingly formalized. A general tendency is to increase the diagnostic use and thus to become more objective and formalized beyond meetings. The increase in diagnostic use and formality appears to happen function by function. Growth KPIs typically evaluate and manage strategic-recurring processes.

Ops KPIs. Ops KPIs make employees accountable for delivering on a minimum standard of performance. Ops KPIs allow for management by exception. The role of ops KPIs is, in some way, to avoid performance evaluations. Ops KPIs can be used, when they measure well-established, already standardized processes. The intended use is diagnostic. Correspondingly, the approach to performance evaluations is quite formalized, often formulaic and objective. Ops KPIs are used to measure and monitor operational processes. Ops KPIs are used to control performance on the employee level.

Omissions in performance measurement

Definition. Ferreira & Otle (2009, p. 267) ask: "Are there significant omissions [of key performance measures]?" Otle (2003, p. 319) finds: "People do respond to performance measures, generally in fairly predictable ways. What gets measured generally gets done. And what is not measured may suffer in comparison."

Overview. AlphaCo, BetaCo and DeltaCo's challenge is not at all the ability to measure. They are digital ventures in an "age of organizational measurability" (Catasús, Ersson, Gröjer & Wallentin, 2007, p. 505). AlphaCo's CEO states: "The business is highly measurable [...]." BetaCo's CFO finds: "We over-measure. We suffer of over-measurement." DeltaCo's "Monthly KPI Report" (March 2016) includes 38 different financial and non-financial KPIs. DeltaCo's COO says: "We measure a lot. That is not the problem." Table 94 in appendix B5 provides empirical evidence from three different data sources.

No omissions. AlphaCo, BetaCo and DeltaCo do not omit KPIs. Instead, they worry about the potentially adverse power of performance measurement. Measuring the wrong KPIs might result in the wrong actions and evaluating the wrong KPIs can inhibit organizational learning. AlphaCo reacts to this worry with the tendency to under-emphasize the use of KPIs. BetaCo and DeltaCo try to mitigate these downsides of performance measurement by 'over-measuring' combined with 'over-communication', i.e. a management by personality approach. As case studies grow these approaches reaches their limits.

Four challenges. Case studies' approaches express four challenges. First, they have to identify the right key performance measures. Second, they have to integrate KPIs into a system in order to align strategy and operations. Third, they need a process to revise and adapt their performance measurement systems. Fourth, they have to link KPIs to their organizational structures in order to make functions and their mid-managers accountable for driving KPIs. The first three challenges relate to strategy formulation and interactive use of KPIs. The fourth challenge relates to implementing strategy and rather diagnostic use of KPIs.

The answer to the first and second challenges is that case studies need to learn about their business models and growth strategies, before they formalize performance measurement; in other words, case studies need to advance through stages of knowledge. The answer to the third challenge is that case studies need a strategic management process that is designed to translate specific knowledge and decentral information into performance measurement suited for current circumstances. The answer to the fourth challenge is to establish a middle management as well as growth supporting functions. All answers depend on the ability to measure the right performance dimensions and to integrate key performance measures into a strategic performance measurement system. AlphaCo, BetaCo and DeltaCo have learnt enough about their organizational cultures, business models, growth strategies and organizational designs to be able to develop strategic performance measurement systems.

Strategic performance measurement systems

Definitions. Chenhall (2005, p. 396) defines: "A distinctive feature of these strategic performance measurement systems is that they are designed to present managers with financial and non-financial measures covering different perspectives which, in combination, provide a way of translating strategy into a coherent set of performance measures. The perspectives that are relevant to profit orientated companies most often include financial, customers, internal processes and long-term innovation. This system of associated measures has the potential to identify the cause-effect linkages that describe the way operations are related to the organization's strategy. The aim is to provide a rational framework to formulate and implement strategies."

Chenhall (2005, p. 396) also defines when a strategic performance measurement system can be considered as an integrated system: "The characteristic of integrativeness within strategic performance measurement systems has two components. First, a generic aspect involving information that provides an understanding of cause-effect linkages between operations and strategy and goals, and between various aspects of the value chain including suppliers and customers. Second, a measurement component concerning provision of measures in the areas of financial, customers, business processes and long-term innovation. It is this dimension of

integrativeness that is seen to provide managers with information that potentially assists in developing competitive strategies.”

Kaplan & Norton’s (1996, 2001) balanced scorecard and strategy map are well-known concepts for integrated strategic performance measurement systems. They define (1996, p. 30): “A strategy is a set of hypotheses about cause and effect. The measurement system should make the relationships (hypotheses) among objectives (and measures) in the various perspectives explicit so that they can be managed and validated. The chain of cause and effect should pervade all four perspectives of a balanced scorecard.”

Overview. AlphaCo, BetaCo and DeltaCo are in the process of developing integrated strategic performance measurement systems at the time of investigation. AlphaCo’s CEO initiated a project to create the “AlphaCo Process House”. BetaCo’s “Strategic KPI System” and DeltaCo’s “Growth Cycle” were developed in our action projects. AlphaCo was only beginning to develop their performance measurement system. For this reason, the following analysis focuses on BetaCo’s and DeltaCo’s performance measurement systems.

Processual and circular integration. Two ways of integration can be identified: a processual integration for business models with a classical value chain (“AlphaCo Process House” and “BetaCo Strategic KPI System”), and a circular integration for multi-sided platform business models leveraging network effects (“DeltaCo Growth Cycle”).

BetaCo develops a processual strategic performance measurement system, the “BetaCo Strategic KPI System”, as their business requires a value chain to deliver their value proposition. Performance measures are integrated by the understanding of sequential, interrelated steps of the customer journey, which is reproduced in BetaCo’s value chain, and associated links between KPIs. Another mean of integration are KPIs, which encompass several steps of the value chain. Revenue is an important overarching KPI. The most relevant non-financial KPI is the conversion rate, as discussed above. Growth results from sending an increasing number of customers through the value chain in order to drive these KPIs.

DeltaCo develops a circular strategic performance measurement system, the “DeltaCo Growth Cycle”, as their two-sided platform business model leverages network effects. DeltaCo’s primary value proposition is to generate transactions between customers (buyers) and media partners (sellers). Transactions are made possible through DeltaCo’s technology platform. Performance measures are integrated by links between KPIs in the cycle as well as dependencies of process steps that are outside and ‘fuel’ the cycle. Growth results from fueling and ‘spinning’ the cycle, which facilitates network effects.

Linkages. Observations on integration of strategic performance measurement systems correspond to the literature (Chenhall, 2005, p. 396; Jazayeri & Scapens, 2008, p. 66; Kaplan & Norton, 1996, pp. 30-31). First, vertical linkages between strategy and operations can be

observed. Even more direct vertical relationships between business model logic and operations can be identified. Second, ‘horizontal’ linkages between steps of the value chain can be identified. These horizontal linkages seem to be of significant relevance to case studies and are associated with introducing a middle management. Third, BetaCo and DeltaCo use financial and non-financial KPIs, yet they emphasize non-financial KPIs in their integrated performance measurement systems. Fourth, the term cause-and-effect relationships are somewhat too strong for what can be observed at case studies. This study, therefore, rather refers to linkages, dependencies, interrelationships or coherence between key performance measures.

Balanced scorecard perspectives vs. business model dimensions. The use of generic perspective (financial, customer, process and innovation perspectives) as proposed by the balanced scorecard and strategy map cannot be observed at case studies. Instead, BetaCo’s and DeltaCo’s strategic performance measurement systems are customized to business model dimensions and translated into an interrelated set of key performance measures. There are similarities between the generic balanced scorecard perspectives and the business model dimensions proposed by Gassmann, Frankenberger & Sauer (2016, p. 21). The financial perspective relates to the revenue and profit mechanism. The customer perspective relates to target customer groups and their value proposition. And the internal business process perspective and the learning and growth perspective might relate to the value chain. However, while the generic balanced scorecard perspectives have the character of ‘ready-made’ and ‘universal’ answers, the business model dimensions are expressed in open questions. Business model dimensions can be better customized to case studies’ business requirements, allow for a more detailed analysis of performance required to grow the business, and have clearer implications for organizational design.

Organizational design. Derived from the business model, the integrated set of strategic KPIs defines the performance areas that an organization needs to cover, as illustrated in figure 32. Organizational functions of the primary value chain as well as roles and responsibilities within functions create this performance. Therefore, the set of key performance measures as well as the understanding of dependencies between KPIs can also define the organizational design required to deliver that performance. KPIs are, so to speak, aggregated, measurable job descriptions. The relationship between organizational design and performance measures is bi-directional. It is possible to derive KPIs from the set of organizational functions needed to deliver the value proposition. It is also possible to derive organizational functions from translating a business model into its essential KPIs. In any case, KPIs and organizational functions should be coherent.

Business model and growth strategy. The translation of business model dimensions into an integrated set of key performance measures as well as the coherence of performance measurement systems and organizational design are the foundations of the growth strategy. Key

performance measures link organizational activities in business model related performance areas, which are organized in functions of the primary value chain, to the growth strategy. Essentially, implementing the growth strategy means to drive the KPIs of the strategic performance measurement system.

Often, a sound growth strategy requires to focus on certain KPIs first and on other KPIs later, thus committing to a sequence in order to overcome strategic bottlenecks. BetaCo's growth process starts with number of visitors to their online platform to start the customer journey across the value chain. DeltaCo's growth process starts with acquiring customers and receiving media budgets from them, thereby fueling the "DeltaCo Growth Cycle".

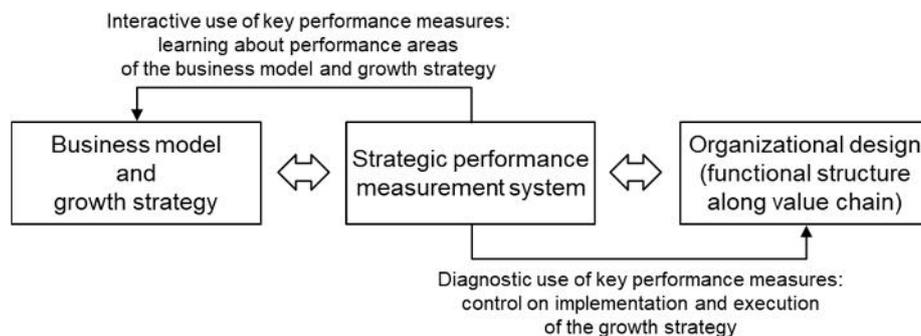


Fig. 32: Business model, strategic performance measurement system, organization and KPI use

KPI types. Generally, BetaCo and DeltaCo emphasize non-financial key performance measures in their strategic performance measurement systems. Financial KPIs used typically relate to revenue; this is possible as finance functions control costs. This is a significant shift to their focus on financial KPIs before the action projects. Put differently, case studies use non-financial KPIs as leading indicators that consequently drive lagging financial indicators (cf. Kaplan & Norton, 2001, p. 3).

BetaCo and DeltaCo's strategic performance measurement systems integrate strategic, growth and some ops KPIs. Their performance measurement systems relate to managing strategic-recurring processes and some core operational processes of the primary value chain. Support functions also intensify their use of formal performance measurement. Although support functions' KPI dashboards are not part of BetaCo's and DeltaCo's strategic performance measurement systems, their KPIs are nonetheless included in management reports and discussed in management meetings.

Meetings and reports. At BetaCo and DeltaCo, the adoption of a strategic performance measurement system results in the introduction or re-design, respectively, of a regular management meeting with founders, middle managers and selected key employees. These management meetings discuss reports, which are now delivered on a regular basis. Meeting frequencies are deliberately short.

BetaCo does a weekly meeting called the “Weekly Management Update”; they discuss the “Weekly Management Update Report”. DeltaCo does a bi-weekly meeting and conference call named the “Management Call Operations”; they discuss the “Monthly Operational Reporting” before the action project, and the “DeltaCo Growth Cycle Report” after the action project.

To facilitate discussion and provide a framework for learning, BetaCo’s “Weekly Management Update Report” as well as the “DeltaCo Growth Cycle Report” have consistent structures. Structures relate to the strategic performance measurement system as well as to organizational functions. An executive summary delivered by founders on the current financial and non-financial performance of whole company is followed by each function reporting on the development of key performance measures and core projects.

Role of growth supporting functions. At BetaCo and DeltaCo, the adoption of strategic performance measurement systems is associated with the professionalization of the finance and business intelligence functions. Before the introduction, mid-managers had to use a significant amount of their time to prepare their reporting themselves. After the introduction growth supporting functions prepare the report and managers just comment on KPI developments.

From interactive use to more diagnostic and balanced use. AlphaCo, BetaCo and DeltaCo consistently develop strategic performance measurement systems. The action projects with BetaCo and DeltaCo revealed why developing an integrated strategic performance measurement system is such a central next step to them: founders intend to – need to – increase diagnostic use, while maintaining interactive use of performance information. The strategic performance measurement system is exactly that “linchpin of the strategic learning process linking the operations control process with the learning and control process for managing strategy” (Kaplan & Norton, 2001, pp. 274-275).

BetaCo and DeltaCo need to increase the diagnostic use of key performance measures. Founders need to control the implementation of their growth strategies by middle management and their growing organizations. Founders also need to preserve management attention. Middle managers assume ownership for their functions’ KPIs. Performance outcomes are benchmarked to pre-defined standards or to previous months’ performance. Targets are defined for KPIs and initiatives are initiated to drive KPIs.

At the same time, in order to keep learning about their businesses, BetaCo and DeltaCo intend to maintain the interactive use of performance information. Performance measures are used to provide feedback on growth strategies and the further development of business models. Case studies’ strategic performance measurement systems emphasize non-financial KPIs over financial KPIs. Case studies use and integrate KPIs from several performance areas. Outcomes are discussed frequently – at DeltaCo management meetings are bi-weekly and at BetaCo

management meetings are even weekly. Discussions are face-to-face and are facilitated by using a clearly structured management report.

The following statement of BetaCo’s CEO illustrates this desired balance between diagnostic and interactive use of strategic performance measurement systems: “The idea is to derive KPIs from the vision and our business model, actually less from the strategy, and then allocate these KPIs to the org chart and make the 2nd level responsible for their KPIs. The KPI system shall be something like a framework for learning about our business. From this framework we can then derive a catalog of initiatives of what goes right and what and why things go wrong.” The first sentence illustrates the need to intensify diagnostic use in order to implement strategy. The latter two sentences indicate the need to balance increased diagnostic use with maintaining interactive use of the performance measurement system in order to learn and formulate strategy.

Emerging theme – the BetaCo Strategic KPI System and the DeltaCo Growth Cycle

The “BetaCo Strategic KPI System” and the “DeltaCo Growth Cycle” are results of action projects conducted with these companies. The results from these action projects are explained in detail to support the analyses above. Table 95 in appendix B5 provides power quotes and a comparison of BetaCo’s and DeltaCo’s strategic performance measurement systems.

The “BetaCo Strategic KPI System”. For BetaCo, the action project on KPIs came just at the right time. The importance of improving use of key performance measures in the growth stage can be seen in this quote from BetaCo’s CEO: “The KPI project really saved us. It made us understand better our business and most important processes. Yet most importantly we could organize ourselves around those most important KPIs.”



Fig. 33: BetaCo Strategic KPI System (adapted from original action project concept)

Figure 33 illustrates the “BetaCo Strategic KPI System”. The four business model questions are answered by a selection of key performance measures. Organizational functions are derived from these performance areas and organized in a five sections value chain. The functions’ middle managers are responsible for actively managing their key performance measures. As an example: The business model question “who are our target customer groups” is answered by the KPI “number of visitors per online marketing channel”. This KPI starts the customer

journey; “Marketing & Brand” is the first process step in BetaCo’s value chain. The marketing manager and later the CMO are responsible for actively managing this KPI, among others. The CEO supervises.

BetaCo’s growth strategy is executed by driving KPIs into the right direction. Growth is generated when an (1) increasing number of visitors and active multi-buyers (Marketing & Brand) (2) do not leave the website (bounce rate) but search (traffic to product page rate) the website (Online Platform & Product Management), (3) are intrigued by a variety of products and purchase products with a sufficient contribution margin (Purchase Department & Category Management), (4) receive their product in time and cost efficient (Logistics), and (5) do not contact Customer Support disproportionately often (tickets to orders), yet if they seek contact their request is resolved timely and to their satisfaction (net promoter score).

As outlined above, the conversion rate as the ratio between number of purchases and number of visitors receives particular attention for several reasons. The conversion rate summarizes what BetaCo’s business is about: attract attention of potential customers and make them buy. It overarches the three business model questions for target customers, value propositions and value creation. It encompasses three out of five steps of BetaCo’s value chain. It encompasses all strategic-recurring processes (Logistics and Customer Support are considered operational processes only). The conversion rate can be used interactively to learn about business model and growth strategy; and the conversion rate can be used diagnostically to control operations.

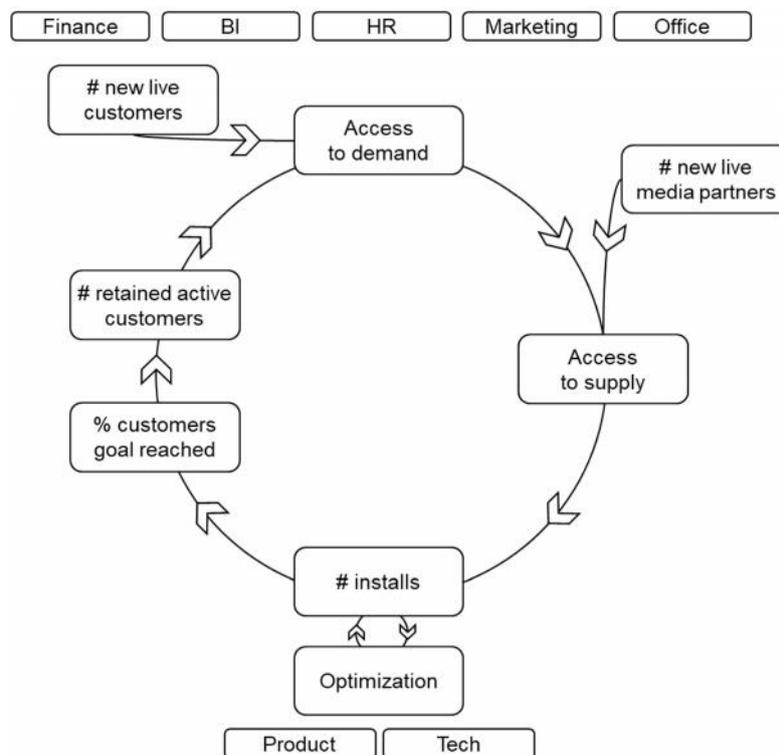


Fig. 34: DeltaCo Growth Cycle (adapted from original action project concept)

The “DeltaCo Growth Cycle”. DeltaCo’s COO intended to integrate relevant KPIs and reports into one framework. The first “Growth Cycle Report states: “The complete team reporting is now based on the DeltaCo Growth Cycle [...]” The “DeltaCo Growth Cycle” was developed to become the basis for frequent discussion among management as well as more control for the CEO, COO and CRO.

Figure 34 illustrates the “DeltaCo Growth Cycle”. More precisely, it shows the network effects of the firm’s two-sided platform business model. The framework shows the cycle itself as well as two boxes fueling the cycle. Access to demand (number of new customers as well as retained active customers), which provides media budgets, allows for access to supply (number of media partners). Matching the right customers with the right media partners leads to a certain number of app installs. App installs lead to a certain percentage of customer goals reached. If the percentage of customer goals reached is sufficiently high, customers can be retained (number of retained active customers and retention rate), which improves DeltaCo’s access to demand. And so forth. The “DeltaCo Growth Cycle” just illustrates the highest level of strategic performance measurement. The boxes of “DeltaCo’s Growth Cycle” are further operationalized by a selected set of KPIs.

DeltaCo’s growth strategy is executed by fueling and spinning this cycle. More precisely, growth is generated by driving exactly these KPIs. The more access to demand (new and retained customers), the better the access to supply. The better the access to both demand and supply, the more optimal their matching on the tech platform and hence the more app installs. The more app installs, the better the optimization of DeltaCo’s algorithms as well as the percentage of customer goals reached. The higher the percentage of customer goals reached, the more customers can be retained. The higher the retention rate, the better (i.e. cheaper from a sales and marketing point of view) the access to customers’ demand. And so on.

Naturally, a cycle has no beginning. From a strategic point of view, however, it is essential to know where to start. More precisely, for each platform or marketplace with network effects one side appears to be the strategic bottleneck. The “DeltaCo Growth Cycle” starts with customers demand and their media budgets. Media partners are important, but their inventory is sold to the highest bidder. Accordingly, DeltaCo is strategically focused on their customers more than on their media partners.

Figure 35 illustrates how DeltaCo’s business model questions interrelate with key performance measures as well as organizational functions and C-level executives (see dotted-line boxes). The key performance measures in the “DeltaCo Growth Cycle” detail the business model and determine the necessary functions. The CRO is responsible for two functions that acquire customers and supply partners for both sides of the platform. Business Development acquires new customers and partners, while Account Management retains and activates existing

customers and partners. These functions answer the business model question “who are our target customer groups?” The CRO is also responsible for Business Operations. This function answers the question “What do we offer to our customers?” They do the manual work to generate app installs and have to achieve customers’ goals.

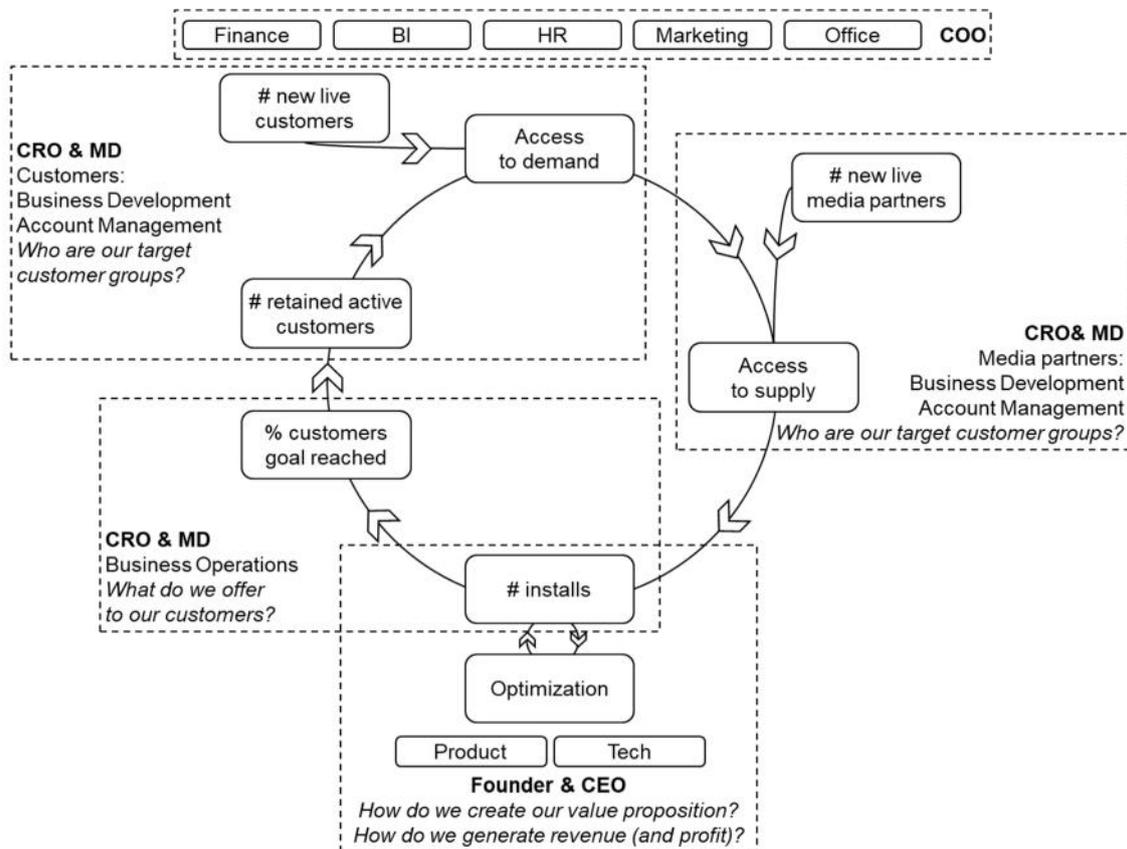


Fig. 35: DeltaCo Growth Cycle enhanced by business model questions, org. functions and executives

The CEO is responsible for Product Management and Technology. These two functions deliver and optimize the technology behind the matching process of customers and media partners. The matching is not only essential to reach customers’ goals, but is also a matter of sound profit margins. The CEO and his functions of Product Management and Technology are thus responsible for the two business model questions of “how do we create our value proposition?” and “how do we generate revenue (and profit)?” The COO is not directly responsible for any of the four business model questions. He is responsible for all functions, especially growth supporting functions, which allow the primary functions of “DeltaCo’s Growth Cycle” to work.

Five further thoughts. Five aspects are interesting about the conceptualization of the “BetaCo Strategic KPI System” and the “DeltaCo Growth Cycle”. These aspects link back to Ferreira & Otley’s (2009, p. 267, 271) question about omissions of key performance measures as well as the challenge to determine KPIs and linkages between them.

First, the translation of the business model into an integrated set of associated key performance measures allows for a more precise definition of the business model itself. Even more, this description of the business model using KPIs allows to formulate and test hypotheses about the ability to grow the business. In this respect, the KPIs of BetaCo's and DeltaCo's strategic performance measurement systems also link back to their growth strategies.

Second, strategic performance measurement systems also define organizational processes and functions responsible to deliver the performance determined by KPIs. Relatedly, frameworks work rather through horizontal linkages and less through vertical ones between strategy and operations.

Third, BetaCo's and DeltaCo's performance measurement concepts prefer non-financial KPIs and focus on a limited number of KPIs. This is despite the importance of financials as well as the enhancing business complexity in the growth stage. The reasons are that non-financial KPIs are leading indicators, are more operational and actionable, and are more specific to case studies' lines of business.

Fourth, the "BetaCo Strategic KPI System" and the "DeltaCo Growth Cycle" can be communicated and learned easily. The frameworks including their most important KPIs themselves fit on just one PowerPoint slide, although of course reports are more comprehensive. Strategic performance measurement systems reduce complexity and can thus facilitate organizational learning.

Finally, BetaCo's and DeltaCo's strategic performance measurement systems, are to be revised and if necessary adapted on a regular basis. The review of the right set of KPIs, the assumptions about linkages and even potential cause-and-effect relationships between KPIs as well as their allocation to organizational functions can be reviewed in the context of the strategic management process.

Emerging theme – performance measurement and organizational culture

Definition. Schein (2008, p. 99) states on performance measurement and culture: "Measurement of performance has two elements around which consensus must be achieved: what to measure and how to measure it. Strong cultural elements will form around each of these issues, and often they become the primary issue that newcomers to the organization are concerned about."

Measurement and culture. Performance measurement is more than just another performance measurement practice to AlphaCo, BetaCo and DeltaCo. Performance measurement reaches deep into founders' approach to entrepreneurship and their idea of being an entrepreneur. Thinking and acting upon key performance indicators is a matter of entrepreneurial culture. KPIs can create identity, credibility and legitimacy to young organizations. These observations

are supported by previous studies (Akroyd & Kober, 2019; Cardinal, Sitkin & Long, 2004; Henri, 2006b; Jansen, 2015; Jazayeri & Scapens, 2008).

Values systems demand measurement. AlphaCo, BetaCo and DeltaCo's organizational values systems frame quantification and measurement as an essential organizational value to aspire to. AlphaCo claims "results orientation". DeltaCo asks for "passion for achievement". Most explicitly, BetaCo's values system demands "fact-based acting - we make decisions based on facts and data".

About-us KPIs. Key performance measures are used to make clear what the organization is actually about. These performance measures are called 'about-us KPIs', because often such KPIs are listed on the about-us page of company websites. AlphaCo states in their onboarding presentation: "AlphaCo operates x diagnostic centers for more than x customers [...]; last year, AlphaCo conducted more than x high-end scans." BetaCo emphasizes in their "First Monday Meeting" in January 2016: "Last year in numbers: x million in gross revenue, x thousand packages sent, x thousand different customers served, x million sessions at x million visits." DeltaCo indicates in their strategic business plan: "We have more than x customers, with more than x apps, we reach more than x billion users per month worldwide, we have more than x media partners, and about x out of x employees work in product and tech."

Vision KPIs. The vision statement is often made more tangible using what shall be term 'vision KPIs'. All case studies use revenue to indicate progress towards their growth visions. In addition, they use non-financial KPIs. AlphaCo highlight to number of diagnostic centers; the number of diagnostic centers in planning is mentioned on AlphaCo's website, even though this information is not really useful to patients. BetaCo emphasizes number of customers and products. DeltaCo features a counter for the number of app installs on their website.

Value proposition KPIs. Vision KPIs are similar to another set of culture-oriented KPIs, which shall be termed 'value proposition KPIs'. AlphaCo's value proposition to customers is to deliver diagnostic images (scans) fast and reliably; they highlight the number of scans (or exams) as well as their utilization rate. BetaCo's value proposition is that customers can find the right products for the; they emphasize their large number of different products together with number of customers. DeltaCo's value proposition is to generate app installs for their customers; therefore, they highlight the number of app installs through its technology platform.

About-us KPIs, vision KPIs and value proposition KPIs are at the core of what case studies are promising to stakeholders. Some KPIs are similar or even the same. It can be observed, however, that about-us KPIs, vision KPIs and value proposition KPIs become more distinguished as companies grow and performance management systems become more defined.

4.1.6. Target setting

Ferreira & Otley's (2009, p. 267) sixth question is:

“What level of performance does the organization need to achieve for each of its key performance measures (identified in the above question), how does it go about setting appropriate performance targets for them, and how challenging are those performance targets?”

Ferreira & Otley's (2009, pp. 271-272) sixth performance management system component includes theoretical elaborations on three themes: the design of target setting, the target setting process as well as the use of target setting. In addition, the investigation into AlphaCo, BetaCo and DeltaCo identifies three interesting and relevant emergent themes: the relationship between goals and roles, target setting and organizational culture as well as Objectives & Key Results as a preferred goal setting approach for entrepreneurial growth companies.

Design of target setting

Definitions. Ferreira & Otley (2009, p. 271) emphasize that “target setting is a critical aspect of performance management”. Merchant & Van der Stede (2007, p. 333) find: “The use of preset performance targets in business organizations is almost universal.” Simons (1995, p. 72) defines: “Goal-setting provides benchmarks for identifying problems. Negative variances trigger remedial action and provide guidelines about how to analyze the causes of problems.”

This study distinguishes operational target setting from other organizational objectives, especially strategic objectives, by their time horizon, organizational levels and resource intensity (see figure 27 in chapter 4.1.4). Operational targets are set for less than 12 months (cf. Merchant & Van der Stede, 2007, p. 332), typically three months, are used mainly on the functional and employee levels and require moderate intense use of resources.

In their question Ferreira & Otley (2009, p. 267) relate targets exclusively to key performance measures. Aranda, Arellano & Dávila (2017, p. 1191) state that “targets are used to quantify aspirations in financial as well as non-financial measures.” Merchant & Van der Stede (2007, p. 30) propose that “in a results control system, targets should be specified for every performance dimension that is measured”. Ittner & Larcker (2001, p. 381) consider target setting as part of performance measurement: “Prior empirical studies typically ignore one of the key aspects of performance measurement – target setting.”

However, targets do not have to relate to performance measures and can be expressed in qualitative statements. For instance, BetaCo states as their as one of their goals to “establish BetaCo Brands as an online brand”. Qualitative targets often come in the form of initiatives, projects or larger tasks. As they do not relate to performance measures, qualitative targets are usually not measurable; yet their achievement is verifiable. Therefore, this study suggests the

following types of targets: targets for financial performance measures, targets for non-financial performance measures and targets expressed in qualitative statements, i.e. qualitative targets.

Aranda, Arellano & Dávila (2017, p. 1191) identify several roles for targets: “Target setting plays other important roles in organizations such as motivational, resource allocation, coordination, control (management by exception), and the learning associated with performance evaluations.” Simons (1995, p. 72) finds that “goal-setting also forces managers to review goals at periodic intervals, thus ensuring that opportunity seeking behavior is in line with broader organizational objectives”. Targets are also used to evaluate and reward performance (Ferreira & Otley, 2009, p. 271; Simons, 1995, p. 74).

Targets can demand different levels of performance (Ferreira & Otley, 2009, p. 271). Targets can be easy, moderate, challenging or aggressive. Target levels of performance influence employee motivation and organizational performance (Ferreira & Otley, 2009, pp. 271-272; Simons, 1995, p. 73). A variety of approaches can be used to determine performance levels for targets. Merchant & Van der Stede (2007, p. 333) distinguish model-based, historical, and negotiated, discussed targets. Ferreira & Otley (2009, p. 272) add that “the use of [internal and external] benchmarking, particularly the use of external benchmarks, appears to provide a greater degree of legitimacy for targets, [...]”

Overview. AlphaCo, BetaCo and DeltaCo make intense use targets. Case studies use targets for financial and non-financial KPIs as well as qualitative targets. Time horizons vary but are typically short. Case studies leverage most of the roles of targets with particular focus on employee motivation, coordination between teams and allocation of organizational resources. In all case studies operational targets demand challenging performance levels. Performance levels are determined based on historical performance and discussions. These observations correspond to previous findings in the literature (Churchill & Lewis, 1983, p. 34; Dávila, Foster & Li, 2009, pp. 328, 329, 336, 339; Greiner, 1972, p. 6). Table 96 in appendix B6 provides empirical evidence from three different data sources.

Types of targets. AlphaCo, BetaCo and DeltaCo use all types of targets, as outlined in table 97 in appendix B6. In all cases, monthly targets for financial KPIs are detailed in the financial business plan. Further reports outline targets for selected financial KPIs as well as non-financial KPIs. The use of targets for non-financial KPIs varies between case studies and depends on performance measurement systems. All case studies set targets in form of qualitative statements.

At BetaCo and DeltaCo, there is a relationship between the type of targets used and the introduction of strategic performance measurement systems. As a general tendency, the more they use key performance measures in the context of their strategic performance measurement

systems (“BetaCo Strategic KPI System” and “DeltaCo Growth Cycle”), the more targets are set for these KPIs and the less qualitative targets appear to be in use.

Roles of targets. AlphaCo, BetaCo and DeltaCo use operational targets for several roles, as elaborated in table 98 in appendix B6. First, founders use challenging targets to motivate managers and employees. Case studies aim at hiring employees that are motivated by challenging targets. Second, founders use targets to coordinate between teams. Third and related to the coordination roles, target setting is also used to allocate organizational resources. Resource allocation refers mainly to the allocation of manpower, time as well as managerial attention, and, in fact, less to financial resources. A consequence of the coordination and resource allocation roles are several ‘multi-purpose’ meetings of case studies’ top management. Fourth, the opportunity seeking role is used strongly at BetaCo and DeltaCo. Case studies use the operational target setting process to identify opportunities, ranging from efficiency improvements to the development of new value propositions, for their businesses. Finally, the role of formal target setting in performance evaluation and rewarding is increasingly formalized.

Performance levels for targets. AlphaCo, BetaCo and DeltaCo set challenging stretch targets in a participative process, as outlined in table 99 in appendix B6. AlphaCo sets challenging targets for headquarters and moderate targets for diagnostic center employees. BetaCo and DeltaCo clearly apply stretch targets to all organizational participants. BetaCo’s COO states: “Usually targets are very ambitious but achievable.” DeltaCo sets quite aggressive targets for their revenue generating functions. The CRO states: “The company grows only with ambitious revenue goals.” As the CRO’s quote illustrates, entrepreneurial growth companies have to set stretch goals in order to grow and grow competitively. This is true for all types of organizational objectives – growth vision, ambitious key success factors, determined strategic objectives, and challenging operational targets. Striving to achieve challenging goals is of utmost importance to growth companies. In fact, ambitious target setting is part of case studies’ culture.

Performance levels are determined based on historical performance and discussion (negotiation). Most frequently, improvement targets versus historical performance are used. Model-based target setting is not applied, at least no sophisticated models. Also benchmarking, internal and external, is not applied to much. BetaCo’s founders use external benchmarking to determine conversion rate targets. The CEO highlights the positive effect on organizational learning: “If possible, we try to set targets using objective benchmarks, for instance for conversion rate in the conversion rate project. There is a lot of knowledge in external numbers and we can ‘externalize’ or rather ‘objectify’ targets.”

Two sets of performance levels. At BetaCo, two different sets of targets with different performance levels are in use on occasion. One set of targets is the performance the company

really has to achieve according to investors' and founders' expectations. The other set of targets is more aggressive and is communicated to the employees and managers. BetaCo's COO explains: "This is to get more stretch into targets and get more performance out of the teams. To have them work really fast." However, this approach leads to frustration, as a manager expresses: "There are two sets of targets, one that are really to be achieved by the company and that investors look at, and another set of targets that is communicated to the team. This upsets and frustrates employees on a regular basis."

Target setting appears to be a particularly central performance management practice to case studies. As growing organizations, they need to constantly and ambitiously orientate their actions towards the future (cf. Schein, 2008, p. 405, 407). However, much of the effectiveness of target setting comes from the target setting process.

Target setting process

Definitions. Aranda, Arellano & Dávila (2017, p. 1190) define: "The target-setting process is an information-based routine that materializes the knowledge available to managers into targets. The process is commonly subjective to accommodate tacit knowledge beyond the explicit knowledge available in the organization." Ferreira & Otley (2009, p. 271) state: "The process of target setting (e.g. imposition, consultation, participation) may be as important as the outcome (e.g. perceived target difficulty)." Simons (1995, p. 74) states: "Participation by subordinates can allow more reasonable goals and the perception of reasonable goals."

The operational target setting process can be informal or formalized. This study suggests that a formalized process involves three distinct steps. The first step is to determine operational targets for a given time horizon. The second step is to review progress towards achieving these targets on a regular basis. The third step is to evaluate performance outcomes versus pre-determined targets by the end of the targets' time horizon. After the third step, the target setting process continues with the first step, i.e. with determining new operational targets. These three steps create a target setting cycle.

Overview. AlphaCo, BetaCo and DeltaCo apply participative process style of operational target setting. Case studies do not separate the three steps of a generic operational target setting process. They conflate the three steps into a couple of short interval operational meetings. Case studies' target setting process can hence be considered semi-formalized. Meetings, which are used for target setting purposes, take place on a weekly, bi-weekly, or monthly basis. However, all case studies are in the process of formalizing their operational target setting process using standard frameworks. AlphaCo uses the OGSM framework, BetaCo and DeltaCo use the Objectives & Key Results (OKRs) approach. The formalization of target setting maintains a participative target setting style and separates the three target setting steps in dedicated meetings. These observations correspond to previous findings (Churchill & Lewis, 1983, p. 34).

Employee involvement. AlphaCo, BetaCo and DeltaCo prefer a participative style of target setting. Although AlphaCo's founders take many decisions themselves and communicate them top-down, they involve managers and key employees in their rather informal target setting process. For AlphaCo's diagnostic centers, targets are consultative and included in roles and responsibilities to some extent.

BetaCo and DeltaCo strongly involve their employees in operational target setting. DeltaCo's CRO states: "I have to listen to my people when it comes to their individual goals. They have more information." BetaCo's CEO explains: "Unfortunately right now setting targets is not being done consistently or partly not done at all. The reasons are that we are too involved with directly teaching employees. We are also very close to employees on a personal level. It is also because fair targets are difficult to determine during high growth, not all variables are known. We fear negative effects on motivation if there is too much stretch. A possible way to fight this is to involve people, which we do, but then again we need a capable 2nd level management."

Case studies use a participative target setting process design for four reasons. First, they involve organizational participants in the target setting process in order to ensure their commitment and motivation to stretch targets. Second, all case studies emphasize values such as teamwork, ownership and transparency. Target imposition would contradict these values. Third, participative target setting results in extensive sharing of information and generates valuable information that is concentrated in commonly understood targets. Further, the sharing of knowledge and information supports coordination and resource allocation. Fourth, a participative design generates more and more reliable information for founders so they can evaluate and reward performance subjectively and informally.

	AlphaCo	BetaCo	DeltaCo
Employee involvement	Participation	Participation	Participation
Degree of formalization	Regular meetings. No regular reports observed.	Regular meetings and reports. Target setting ad hoc.	Regular meetings and reports
Time horizons	Weekly and monthly	Weekly and monthly	Weekly and bi-weekly
New target setting	No dedicated meeting	No dedicated meeting	No dedicated meeting
Progress reviews	No dedicated meeting	No dedicated meeting	No dedicated meeting
Operational performance evaluation	No dedicated meeting	No dedicated meeting	No dedicated meeting
Multi-purpose meetings	Monthly "Management Team Meeting"; founders' "Monday Meeting", regular Jour Fixe	"Weekly Management Update", "Founders Weekly", weekly team meetings	Bi-weekly "Management Call Operations", weekly "Management Jour Fixe", weekly one-on-one meetings
Administration	Founders mainly, some key employees	Founders mainly, some key employees	CEO, COO, CRO and middle managers

Tab. 23: Design of the operational target setting process before further formalization

Design of the operational target setting process before formalization. AlphaCo, BetaCo and DeltaCo use targets extensively. However, their operational target setting processes are not really formalized, as outlined in table 23. According to case studies' meeting schedules there are no separated and dedicated meetings for the purposes of setting new operational targets (step 1), review of progress towards target achievement (step 2), and performance evaluation (step 3). The same regular meetings are used for target setting as well as several further purposes such as sharing information, coordinating actions and taking decisions.

These meetings are scheduled in surprisingly short intervals (a full discussion follows in chapter 4.1.9). AlphaCo's management team meets monthly and their founders meet weekly. BetaCo's management team meets weekly and their founders meet weekly as well. DeltaCo's management team meets bi-weekly and their executives meet weekly. In addition to these meetings of management teams and founders / executives, all case studies have regular, typically weekly jour fixes with their teams.

Case studies are torn when it comes to target setting. On the one hand, they are generally skeptical towards setting targets too formally and for too long a time horizon. For instance, AlphaCo's CEO states: "I don't feel like wasting time for formal target talks, when targets shift all the time." On the other hand, they acknowledge that managing with longer-term targets and using a dedicated operational target setting process is an essential next step for their organization. BetaCo's COO finds: "Another key success factor is to start steering our capable managers more with targets instead micromanaging them with projects."

Reasons for informal target setting process. This particular design – participative target setting in short interval meetings conflating all steps of the process – is due to five reasons. First, founders have difficulties to set the right targets without well-defined performance dimensions (which come with strategic performance measurement systems). Second, and related, growing ventures have to deal with liability of newness and smallness. They are not able to afford to set wrong operational targets and wait till the end of a target setting cycle to discover they worked on the wrong goals. Third, founders have difficulties to set fair performance levels and hence prefer to over-communicate in frequent meetings. Fourth, founders need a middle management to set targets for longer periods. Finally, and most importantly, frequent review and adaptation of ambitious operational targets might be a mechanism for learning fast and overcoming startup uncertainty.

Formalization of the operational target setting process. AlphaCo, BetaCo and DeltaCo are about to re-design their operational target setting process at the time of investigation. AlphaCo starts this process in their "OGSM 2016 Workshop Series". BetaCo and DeltaCo both introduce the OKR target setting system. Table 24 summarizes their approaches. It is interesting to note that all three case studies use standard frameworks.

	AlphaCo	BetaCo	DeltaCo
Employee involvement	Participation	Participation is strengthened	Participation is strengthened
Time horizons	Not observed	Quarterly	Quarterly
New target setting	Meeting not determined at time of investigation	Quarterly OKR meeting for setting operational targets for the quarter	Quarterly "Objectives & Key Results" meeting for setting operational targets for the quarter
Progress reviews	Meeting not determined at time of investigation	Weekly jour fixe meetings to review progress	Weekly jour fixe meetings to review progress
Operational performance evaluation	Meeting not determined at time of investigation	Quarterly OKR meeting for evaluating operational targets	Quarterly OKR meeting for evaluating operational targets
Target setting approach	"OGSM" framework (Objectives, Goals, Strategies, Measures)	"Objectives & Key Results"	"Objectives & Key Results"
Administration	Founders lead the process, Finance & Accounting and Personnel & Academy support	Founders lead the process, Finance, Business Intelligence and Human Resources support	Executive lead the process, Finance, Business Intelligence, and Corporate Development support

Tab. 24: Design of the operational target setting process after formalization

All case studies maintain a participative target setting process between founders and middle managers as well as between middle managers and employees. In fact, all case studies increase employee involvement. Also, all case studies separate the three steps of the process. This approach allows a clear separation between working towards goals and reviewing progress towards achievement in shorter intervals of usually one week ('action'), and evaluating and learning from performance outcomes and setting new operational targets ('reflection'). BetaCo and DeltaCo also increase time horizons; they set and evaluate operational targets every three months.

Reasons for formalized target setting process. There are five reasons that prompt case studies to formalize operational target setting process. First, organizational growth makes management by personality increasingly costly on founders' time and attention. Second, a larger organization requires a 'rhythm' to maintain focus, coordination and provide time for evaluation and learning. Third, capable middle managers do not want to be "micro-managed" (BetaCo's COO) and demand to be managed professionally. Fourth, the strategic management process allows and requires breaking down strategic objectives and strategy into operational targets. Finally, the strategic performance measurement system also enables and requires setting operational targets for KPIs on a regular basis and for consistent time horizons.

The efforts to formalize target setting also changes responsibilities for leading and administrating the process. Before the formalization, the process is led and administrated mainly by founders and executives. After the formalization, growth supporting functions take over the administrative work; founders, executives and middle managers concentrate on leading the target setting process.

Use of target setting

Definitions. In his levers of control theory, Simons (1995) refers to “diagnostic goal-setting process” (p. 72) and “interactive goal-setting system” (p. 98). Target setting can, therefore, be used in different styles. For diagnostic control, Simons (1995, p. 59) defines: “Diagnostic control systems are the formal information systems that managers use to monitor organizational outcomes and correct deviations from preset standards of performance.” With respect to target setting, Simons (1995, p. 90) states: “Measurement and goal setting are the key design parameters of diagnostic control systems, [...]”

Simons (1995) does not specify in detail how target setting are to be used interactively, but he does share thoughts about forecasting of future states. Simons (1995, p. 108) elaborates: “To be used interactively, the control system must require the reforecasting of future states based on revised current information. An interactive control system focuses attention on patterns of change; the critical questions asked by managers are, ‘what has changed and why?’ To trigger these questions, continual reforecasting of future states, based on a reevaluation of current information, is necessary. As in a diagnostic system, actual results are compared with expectations, but any significant discrepancy-positive or negative-triggers a search for understanding. Changes evident in the data warn participants to anticipate patterns of potential change in the future. Missing a target because of a competitor's introduction of a new product triggers a reforecasting of competitive conditions. An understanding of changed conditions allows participants to estimate the potential effects on current plans, goals, and strategies and forces a dialogue about the underlying causes.”

This study interprets Simons’ (1995) thoughts as follows. Setting new targets (step 1 of the target setting cycle) and evaluating performance outcomes versus targets (step 3) allows to use target setting interactively. Measuring progress towards achieving such defined targets and actively correct deviations (step 2) allows to use target setting diagnostically.

Overview. AlphaCo, BetaCo and DeltaCo use target setting interactively in their startup stage. This is why the three steps of the operational target setting processes are not separated but conflated in the same meetings. As their organizations grow, case studies introduce more diagnostic use; at the same time, they aim at maintaining interactive use. The introduction of a formal target setting process and particularly separating the three steps in dedicated meetings allows for balanced use of target setting. This re-design of the operational target setting process could be observed mainly at BetaCo and DeltaCo in the context of their introduction of the OKR goal setting system. Figure 36 illustrates these relationships.

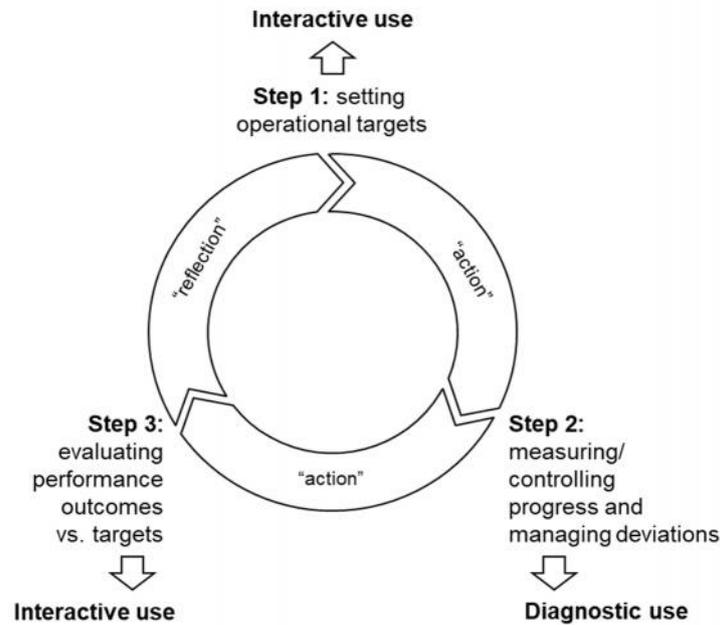


Fig. 36: Diagnostic and interactive use of the formalized operational target setting process

Use of target setting. In the startup stage, before the formalization of their target setting processes, AlphaCo, BetaCo and DeltaCo conflate all three steps. They conduct meetings in short intervals, weekly, bi-weekly and monthly, which cover all three target setting steps. This design of target setting is difficult to formally link to key performance measures. Performance evaluations are necessarily informal, frequent and subjective. This study understands this approach as interactive use of target setting.

In the growth stage, BetaCo and DeltaCo formalize their target setting system. BetaCo and DeltaCo separate setting targets (step 1) and evaluating performance outcomes (step 3) from measuring progress and managing deviations (step 2). They give each step dedicated time and schedule dedicated meetings. They lengthen their targets' time horizons. This design of target setting allows to more formally link targets to performance measurement and performance evaluation.

BetaCo and DeltaCo are able to maintain interactive use in steps 1 and 3, where they formulate targets and evaluate performance outcomes in a participative target setting process. BetaCo and DeltaCo introduce diagnostic use of target setting in step 2, when they measure progress towards and manage deviations from pre-defined targets without questioning targets themselves. BetaCo and DeltaCo thus separate interactive and diagnostic use – or exploration and exploitation – over time by introducing OKRs as their target setting practice.

Emergent theme – goals and roles

Definition. Operational targets (goals) and organizational roles interact significantly. This observation can help to analyze when to use goals, when to use roles and when to use both. Goals and roles can be understood as complements. Goals and roles reinforce each other as long as goals fit to role definitions. There is also definitional congruence. Goals are usually deducted from roles in the organization, while roles can be defined as a set of ongoing, recurring goals. Goals and roles can also be understood as interchangeable. Both performance management practices can be used to direct activities, set performance standards and hold employees accountable. If goals and roles conflict, they are becoming substitutes in the strict sense of Grabner & Moers' (2013, p. 412) definition. Table 25 provides an overview of the applicability of goals and roles.

Operational goals	Roles and responsibilities	Goals and roles
New, unknown activities	Recurring, known activities	Known activities to be improved
Non-standard activities	Standard activities	Semi-standardized activities
Effectiveness	Efficiency	Effectiveness and efficiency
Future orientation	Present orientation	Present and future
Require attention	Preserve attention	Balance attention
Create knowledge know-how	Require knowledge	Increase knowledge base
Define and reinforce roles	Define and reinforce goals	Integrated
Organizational objectives	Organization structure	performance
Supported by vision and strategy	Supported by KPIs	management
Strategic processes	Operational processes	system
Startups	Mature companies	Growth companies

Tab. 25: Use of goals vs. use of roles

Interaction between roles and goals. AlphaCo (in their headquarters), BetaCo and DeltaCo use roles and responsibilities only high-level. Roles and responsibilities have the character of headlines. Roles are quite 'permeable'. Employees are expected to be able to define what their organizational role is and adapt to changing roles. Instead of roles AlphaCo, BetaCo and DeltaCo use operational goals to define what employees are accountable for. Roles lead to goals, and goals define roles.

Roles only. However, in some functions not much goal setting could be observed. These functions use detailed definitions of roles and responsibilities to determine priorities and define accountabilities. The best example is AlphaCo's diagnostic centers. Employees are managed with detailed policies outlining their roles and responsibilities ("policy for roles and responsibilities in diagnostic centers" and "list of roles and responsibilities in diagnostic centers"). Further examples are BetaCo's Customer Support and some teams in DeltaCo's Business Operations.

Goals are more 'agile' than roles. AlphaCo, BetaCo and DeltaCo (mostly) prefer goals over roles, because goals are more 'agile' than roles. Goals are set, reviewed and evaluated in the

target setting process on a regular basis. By their very nature goals change and adapt. In contrast, roles are a core component of organization structure. Roles typically define hierarchy, decision rights and rewards. Often, roles are grounded in the self-understanding and the self-image of employees. Roles, therefore, are difficult to change frequently.

Roles evolve from goals. As goals are more adaptable than roles, organizational roles evolve out of a set of recurring operational goals. This is particularly evident for ‘non-standard roles’. Business model innovations often require roles and entire functions that are specific to these businesses. AlphaCo’s Department for Knowledge & Quality is a good example. As startups stabilize and grow, recurring sets of goals evolve into roles. This makes sense, as determining roles for recurring activities is also more efficient than setting the same goals again and again. Stages of knowledge are associated with these observations. Operational goals initiate the creation of knowledge of how to achieve the goals. In contrast, roles require existing knowledge about how to accomplish responsibilities. Entrepreneurial growth companies should take these interactions between goals and roles into account.

Emergent theme – target setting and organizational culture

Definition. Organizational objectives in general and operational targets in particular relate to case studies’ organizational culture. Schein (2008, p. 93) explains: “Mission and strategy can be rather timeless, whereas goals have to be formulated for what to do next year, next month, and tomorrow. Goals concretize the mission and facilitate the decisions on means. In that process, goal formulation also often reveals unresolved issues or lack of consensus around deeper issues.” How operational targets are set, how progress is reviewed and how performance outcomes are evaluated is very present to organizational participants on a daily basis.

Targets and values. Organizational culture becomes evident in performance levels for targets. Growth requires ambitious targets. Case studies value systems, therefore, culturally support challenging performance levels and stretch targets. AlphaCo demands to “tackle challenges” and to deliver “peak performance”. BetaCo demands to “beat the average – we want to improve every day”. And DeltaCo demands “passion for achievement, we love the feeling of accomplishment, we move fast, every milestone counts, and we don’t rest until we are satisfied”.

Case studies also emphasize employee involvement and participation in their values systems. AlphaCo does “not accept statements such as 'this is difficult or impossible' or 'this cannot work’”. BetaCo highlights their “commitment – we burn for team success”. And DeltaCo emphasizes: “Appreciation for the team, we enjoy being part of one shared adventure, we value each team member’s uniqueness and contribution. Together we are a strong team at work and on the playground.” Such culturally-demanded participation becomes most evident in the process of setting operational target.

Targets express culture. Organizational values and operational target setting can be considered as two sides of the same coin. Schein (2008, p. 95) states: “Only as consensus is reached on such matters, leading to solutions that work repeatedly, can we begin to think of the goals of an organization as potential cultural elements. Once such consensus is reached, however, the assumptions about goals become a very strong element of that group's culture.” Challenging targets and participation in the target setting process are not simply matters of performance management system design. Target setting contributes significant to entrepreneurial growth companies’ survival and growth and is very close to employees’ daily experiences at work. For this reason, target setting is an essential matter of organizational cultures.

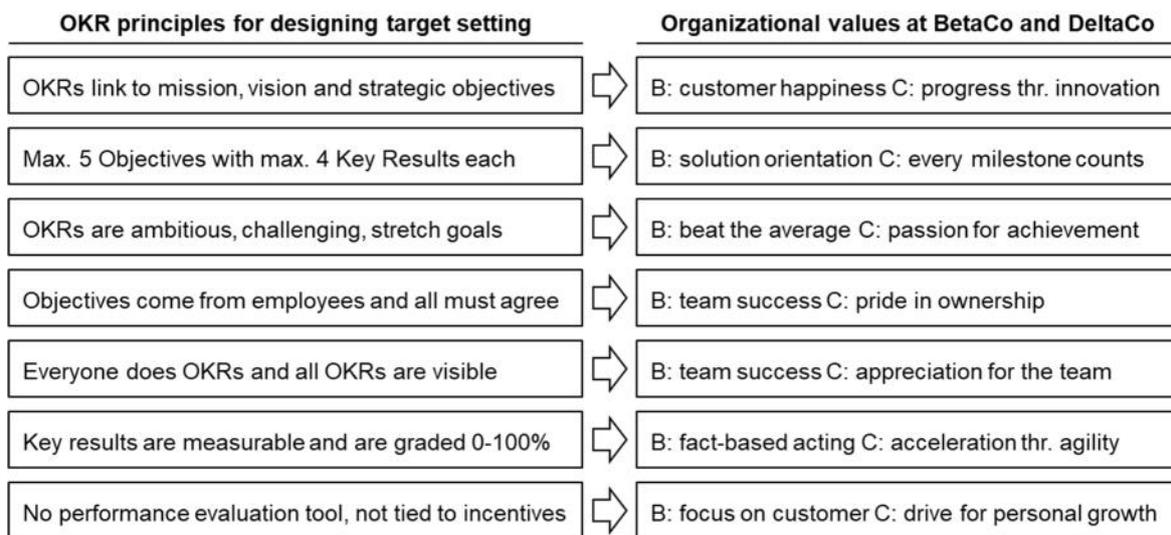


Fig. 37: Seven principles of the OKR goal setting system and organizational values

BetaCo and DeltaCo implement the OKR goal setting system at the time of investigation. OKRs implement and enforce a type of culture that is particularly beneficial for growth companies. OKRs come with principles of how the process of setting operational targets should be designed. As illustrated in figure 37, these seven ‘OKR principles’ translate into organizational values that BetaCo and DeltaCo intend to reinforce in their target setting processes.

Emergent theme – Objectives & Key Results (OKRs)

At the time of investigation, BetaCo and DeltaCo introduce OKRs – Objectives & Key Results – as a performance management practice for target setting. BetaCo’s OKR presentation outlines: “OKRs are used to improve the collaboration and communication at BetaCo, and to support our company objectives by aligned and focused actions.” OKRs are an approach to target setting that involves a set of pre-defined design choices. Target setting in general and OKRs specifically are often among those formal performance management practices to be adopted early by growing ventures. The OKR goal setting system is explained in depth in a recent paper (Engelhardt & Möller, 2017).

The O and the KR. OKRs divide target setting in two elements: the objective and the key results. The objective summarizes a target in a short qualitative statement. The objective outlines what to do and why do it. Key results operationalize the objective. Usually about four key results are defined for each objective. Key results are quantifiable in percent, or their achievement is at least verifiable, i.e. either 0% or 100%. The measurable key results allow to grade each of them, typically from 0 to 100%. By calculating the average of all key results, the objective is graded as well with a score between 0 to 100%.

OKR principles. OKRs are designed according to seven principles. First, all objectives (not key results) should link to mission, vision and strategic objectives. Second, no more than five objectives should be set per OKR cycle. Third, OKRs should be ambitious; they are stretch targets and define a standard of what is considered outstanding performance. Fourth, for the larger part objectives should be suggested by employees, discussed with their teams and managers, and in the end, objectives are only made definite if everyone agrees. Fifth, every organizational participant uses OKRs and all OKRs are visible to everyone in the organization. Sixth, as mentioned above, key results must be measurable and graded from 0% to 100%. Seventh, OKRs should not be (directly) tied to performance evaluations and incentives. These seven OKR principles create a certain organizational culture.

OKR cycle. OKRs introduce a target setting process that is often referred to as the OKR cycle (cf. Doerr, 2018, p. 267). The OKR cycle consists of the three steps of the generic target setting process: firstly, setting OKRs, secondly reviewing progress towards OKRs during the cycle (regular ‘check-ins’), and thirdly evaluating OKRs (‘grading’) and learning from outcomes. The standardization of the time horizon or the rhythm of the target setting process is one of the core benefits of OKRs.

The OKR cycle involves three main design choices. First, the OKR cycle can use different time horizons, ranging from as short as four weeks to as long as six months. Typically, the OKR cycle is two to three months. Second, OKR check-ins can be done frequently, for instance every week, or less frequently, for instance once a month. Third, OKRs can (but do not have to be) used on all organizational levels, i.e. on the company level, for functions and for individual employees. These three design choices for a growing venture’s OKR cycle should be adapted to its specific context.

4.1.7. Performance evaluation

Ferreira & Otley’s (2009, p. 267) seventh question is:

“What processes, if any, does the organization follow for evaluating individual, group, and organizational performance? Are performance evaluations primarily objective, subjective or mixed and how important are formal and informal information and controls in these processes?”

Ferreira & Otley's (2009, p. 272) seventh performance management system component includes theoretical elaborations on the design of performance evaluation on different organizational levels as well as the relationship between performance evaluation design and the use of other performance management practices.

Design of Performance evaluation on organizational levels

Definitions. Ferreira & Otley (2009, p. 272) highlight performance evaluation processes might differ organizational levels: "It is important to note that this question is not concerned exclusively with individual performance evaluations, even though they are likely to be the most observable. It also includes the evaluation of the performance of various groups of individuals (e.g. teams, departments, and divisions) and, more generally, the organization as a whole."

Ferreira & Otley (2009, p. 272) distinguish formal processes and informal approaches to performance evaluation: "[...] both formal performance evaluation activities and informal indications of what is felt to be important are covered in this question. It is particularly important to distinguish between performance evaluation routines (often orchestrated by the human resources function) and those actually operated by senior managers."

Performance dimensions are mentioned but not defined by Ferreira & Otley (2009). Performance dimensions appear to be similar yet exceed Simons' (1995, p. 63, 94, 95) critical performance variables and strategic uncertainties. Performance dimensions include several of the practices of the performance management system: mission, vision, values, key success factors, value propositions, organizational roles and responsibilities, rules, strategy and strategic objectives, key performance measures, and operational targets.

Performance evaluations can be done subjectively, objectively or use a mixed approach depending on performance dimensions and their relative importance (weighting). Ferreira & Otley (2009, p. 272) define: "Under subjective performance evaluations, the specific weightings placed on the various dimensions of performance are unknown to the evaluatee and determined subjectively by the evaluator." Under subjective evaluation not only weightings might be unknown, but also performance dimensions themselves might be unknown or changing. In contrast, objective performance evaluation means that performance dimensions are clear, weightings are known, and both are stable over a pre-defined period of time. Performance outcomes can be calculated using a formula and evaluated accordingly. Ferreira & Otley (2009, p. 272) define: "Under objective performance evaluation there is no scope for ambiguity in the weightings; assessment is based only on the actual results and, typically, they do not allow for adjustments to the agreed standards of performance nor to their weightings."

Overview. AlphaCo, BetaCo and DeltaCo evaluate performance frequently. Formality and designs differ across organizational levels. On the employee level, case studies combine quite formalized, partly even objective performance evaluation processes with informal situational

feedback. On the functional level and company levels, performance is subjectively evaluated in ‘multi-purpose’ meetings. Performance dimensions are partly shifting, yet increasingly clear and stable along with the increasing formalization of the overall performance management system. Nonetheless, for the larger part performance evaluation is subjective. Objective, formulaic evaluation is applied for employees in AlphaCo’s diagnostic centers and DeltaCo’s international sales offices, i.e. in their scaling units. There are few explicit links between formal performance evaluations and rewards, except of for employees in AlphaCo’s diagnostic centers and DeltaCo’s international sales offices. Case studies formalize several performance evaluation processes at the time of investigation. Observations correspond to previous findings for growing ventures (e.g. Strehle, Katzky & Dávila, 2010, pp. 40-41). Table 100 in appendix B7 provides empirical evidence from three data sources.

Employee level. At AlphaCo, BetaCo and DeltaCo, the formalization of performance evaluation processes starts at the employee level (see data in table 101 in appendix B7). AlphaCo adopts a rather informal approach for their headquarters employees. In contrast, for employees working in diagnostic centers the “Index Score” calculation in the course of the annual “Performance Management Process” using the “Performance Evaluation Tool” is very formal. BetaCo establishes an annual “Feedback Process”, as employees complain about lack of formal feedback and hence lack of structured career development. Yet for the relevant part BetaCo’s approach is still informal. DeltaCo uses several interrelated formal performance evaluation practices: bi-annual evaluations using the “Talent Management Matrix”, bi-annual “Career Development Talks” as well as quarterly “Performance Evaluations”.

At all case studies, formal employee performance evaluations are combined with frequent informal situational feedback. Situational feedback – direct feedback shortly after a situation or in a weekly one-on-one meeting – plays a significant role on the employee level and for middle managers. AlphaCo’s Head of Personnel & Academy states: “The assessment of headquarters employees’ performance happens mostly directly through direct feedback from founders or middle managers when tasks are completed. Indirectly performance is evaluated by the type of tasks that employees get, which means responsibilities that employees earn with time and degree of autonomy that employees have when working through their tasks.” Informal situational feedback comes across quite casual and soft on the one hand. On the other hand, informal situational feedback is intended, explicitly demanded, guided by values systems, and trained in dedicated leadership trainings.

Vision, values and operational targets are the most relevant performance dimensions for performance evaluation on the employee level. Revenue is the most significant performance dimensions for employees working in DeltaCo’s international sales offices. Corresponding to organizational growth and functional specialization, roles and rules are used increasingly as performance dimensions.

Particularly formal performance dimensions are used in AlphaCo's diagnostic centers ("Index Score"), i.e. their four stable performance criteria of "results, behavior, knowledge and soft skills". DeltaCo's "Talent Management Matrix" also uses stable performance dimensions, i.e. the two dimensions of "performance competencies" and "potential competencies". Interestingly, AlphaCo's and DeltaCo's stable performance dimensions are derived from their organizational values systems.

Clearly objective, formulaic performance evaluation processes are applied in AlphaCo's diagnostic centers ("Index Score") as well as in DeltaCo's international sales offices (revenue). These objective performance evaluations are tied to financial rewards and promotions. Interestingly, objective performance evaluation and formulaic links to financial rewards are applied to employees working in AlphaCo's and DeltaCo's scaling units.

Functional level. On the functional level, AlphaCo, BetaCo and DeltaCo conflate performance evaluations for the functions and their middle managers (see data in table 102 in appendix B7). Performance is evaluated in regular 'multi-purpose' meetings of founders, executives and middle managers. These are meetings that are used for performance evaluation purposes, but also for further purposes such as target setting, information sharing, coordination and decision-making. Examples are AlphaCo's "Monthly Management Meeting", BetaCo's "Weekly Management Update", or DeltaCo's bi-weekly "Management Call Operations". Performance evaluations for functions and for the company are combined to some degree in these regular 'multi-purpose' meetings. This combination might be because company performance is strongly dependent on the performance of individual functions.

On the functional level, vision, values, revenue, operational targets and KPIs are relevant performance dimensions. Value propositions, as a special form of organizational objectives, are essential performance dimensions as well. The roles of middle managers become more specialized and thus define performance dimensions as well. Corresponding to the development of strategic performance measurement systems, financial and particularly non-financial KPIs gain in importance for functions and their managers.

For functions and their middle managers performance evaluation is subjective. The only exception is DeltaCo's international sales offices and their managing directors, who are evaluated formulaic and based on sales performance. Founders attempt to decrease subjectivity by group performance reviews. All case studies have at least one regular meeting with all founders and all middle managers. These group performance reviews provide peer group perspectives on a function's performance, help to evaluate middle managers' performance relatively to each other, and increase pressure to perform.

Company level. As outlined above, performance evaluations for functions and the whole company are often combined in regular 'multi-purpose' meetings (see table 103 in appendix

B7). Increasingly, strategic management processes are adopted, which include formal performance evaluations for the whole company. AlphaCo and BetaCo evolve from rather ad-hoc, events triggered company performance evaluations to more regular processes. AlphaCo introduces the “OGSM” strategic management process starting with the “OGSM 2016 Workshop Series”. BetaCo intends to do more regular “strategy offsites”. DeltaCo already conducts a bi-annual strategic management process named the “DeltaCo Strategy Week”.

On the company level, the vision, value propositions and strategic objectives are dominant performance dimensions. Financial KPIs, especially revenue and further KPIs from the profit & loss statement as well as liquidity KPIs, are relevant performance dimension, too. As strategic performance measurement systems are developed, non-financial KPIs gain in importance.

On a company level founders and middle managers evaluate performance subjectively. Strategic business plans provide structure and criteria to the strategic management process. Variance analyses between actual results and the financial business plan show elements of more objective performance evaluation. Subjectivity is further reduced, as founders have to discuss their evaluation of company performance with investors.

Increasing formalization. This current design of performance evaluations is only an intermediate state. AlphaCo’s CEO assesses: “We are in-between a formal and a very informal approach to assessing performance.” Founders see the need to improve and increase the formality of performance evaluation on all organizational levels. The general direction appears to be to increase the use of more objective performance evaluations. In his “Performance Management Presentation”, DeltaCo’s COO states the goal to “be as objective as possible”. At the same time, informal feedback is designed and strengthened in trainings, for instance in the training about “leadership and feedback skills” by DeltaCo’s Head of Human Resource.

Performance evaluation and use of performance management practices

Definitions. The management control literature tends to conceptualize performance evaluation as part of performance measurement (e.g. Merchant & Van der Stede, 2007, pp. 29-30) or target setting (e.g. Malmi & Brown, 2008, p. 293). This might be a reason why Stringer (2007, p. 103) assesses that there is a “lack of research examining performance evaluation processes”. In contrast, Ferreira & Otley (2009, p. 272) highlight performance evaluation as a separate component of the performance management system. In fact, they emphasize that “the area of performance evaluation represents a critical nexus in control activities” (p. 272).

Simons (1995, p. 158) states: “Diagnostic control systems conserve management attention; interactive systems amplify management attention.” Diagnostic control systems are designed to avoid performance evaluation. Interactive control systems require intense performance evaluation. Interactive use implies subjective performance evaluation needing dedicated time. Diagnostic use implies objective performance evaluation needing a minimum of time. The

design of performance evaluation processes is the main difference between diagnostic and interactive control.

Overview. AlphaCo, BetaCo and DeltaCo intend to design their performance evaluation processes consistent with the intended use of their performance management practices. Subjective performance evaluations with stable performance dimensions are conducted on the employee level and the functional level. This mixed performance evaluation design is intended to facilitate a balanced use of practices. In AlphaCo's diagnostic centers and DeltaCo's international sales offices, performance evaluations are objective and formulaic, thus supporting diagnostic use. Performance evaluations on the company level are subjective and therefore support interactive use. Informal approaches to performance management necessarily imply subjective performance evaluation and interactive use. In contrast, formalized performance management practices, which create stable performance dimensions, offer choices: Founders can design subjective and/or objective performance evaluation processes and thus support interactive and/or diagnostic use of their performance management practices. Table 26 provides an overview of case studies' approaches to performance evaluation.

	Employee level	Functional level	Company level
Performance dimensions	Values, targets, revenue; formally calculated performance criteria, e.g. "Index Score"	Value propositions, roles, targets, revenue, KPIs from strategic perf. measurement systems	Vision, value proposition, strategic objectives, KPIs and especially financial KPIs
Formal evaluation processes	Mostly regular, formalized evaluation processes	Evaluation is done in regular, frequent 'multi-purpose' meetings	Evaluation in 'multi-purpose' meetings; evaluations triggered by events; introduction of formal strategic management process
Informal evaluations	Informal yet designed/trained situational feedback	Not observed, except of situational feedback to managers	Not observed; occasionally ad-hoc evaluations
Evaluators	Founders, middle managers, direct supervisors, selected peers	Founders, middle managers	Founders, middle managers, investors
Subjective evaluation	Subjective approach; founders, mid-managers and direct supervisors evaluate	Subjective evaluation by founders; middle managers contribute	Subjective evaluation by founders and investors; selected middle managers contribute
Objective evaluation	Objective evaluation for employees in AlphaCo's diagnostic centers and DeltaCo's int. sales offices (scaling units)	No formulaic evaluation except of DeltaCo's int. sales offices; group performance reviews to evaluate performance relatively and decrease subjectivity	No formulaic evaluations; some objectivity due to the financial business plan
Intended use	Mixed performance evaluation implies interactive and diagnostic use for most employees. In scaling units objective evaluation results in diagnostic use.	Mixed performance evaluation implies interactive and diagnostic use of underlying practices. DeltaCo's sales offices are evaluated objectively resulting in diagnostic use.	Subjective performance evaluation implies interactive use.

Tab. 26: Approaches to performance evaluation on different organizational levels

Employee level. On the employee level, AlphaCo, BetaCo and DeltaCo's performance dimensions – vision, values, targets – are well-defined. Thus, performance evaluation processes can be regular and quite formalized. Still for the most part performance evaluations are subjective to allow for interactive use. Performance evaluation processes could also be considered semi-objective or mixed. For employees in AlphaCo's diagnostic centers ("Index Score") and DeltaCo's international sales offices (revenues) performance dimensions are so stable already that they allow for objective performance evaluation. Performance management practices are used diagnostically. Formal designs are complemented with informal situational feedback in order to maintain interactive use. Such mixed approaches to performance evaluation are designed to facilitate both interactive and diagnostic use.

Functional level. On the functional level, performance dimensions – value propositions, roles, targets, revenue, KPIs from strategic performance measurement systems – are in the process of becoming clearer. Value propositions and revenue generation are always 'work-in-progress' and hence require double loop learning. Middle management roles become more defined. Strategic performance measurement systems as well as target setting are also in the process of becoming more formalized. On the functional level AlphaCo, BetaCo and DeltaCo combine subjective performance evaluation with frequent, regular meetings on the functional level. This performance evaluation design is for interactive use. Yet founders' goals are to increase diagnostic use of these performance management practices. In particular strategic performance measurement systems are developed to allow for more diagnostic control of functions and their middle managers. Overall, on the functional level performance evaluation processes are designed to facilitate both interactive and diagnostic use.

Company level. Performance evaluation on the company level is often conflated with performance evaluation of functions. This combination might be necessary because company performance is strongly dependent on functions' performance. Performance evaluations are subjective. Strategic management processes are formalized in all case studies in order to distinguish the evaluation of functional and company level performance. Despite some objectivity due to the use of financial business plans, intended use of performance management practices is interactive.

Interaction between performance evaluation and use. The use intended for a performance management practice determines the design of associated performance evaluation. At the same time the design of performance evaluation processes determines what type of use can be made of performance management practices. Intended use of performance management practices and design of associated performance evaluation should not contradict each other. These interactions are illustrated in figure 38.

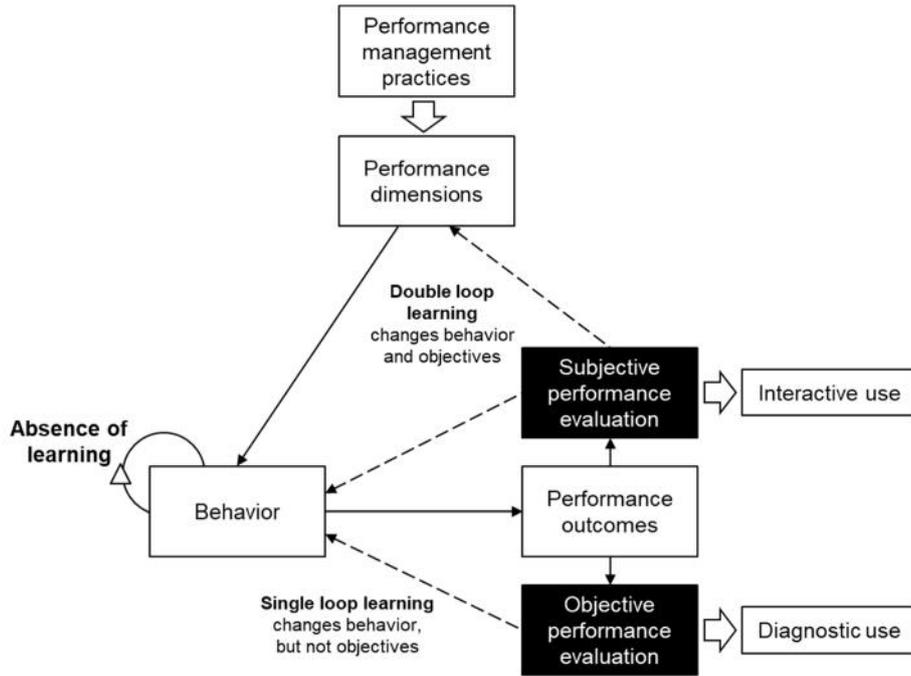


Fig. 38: Performance evaluation and use of practices (extended from Batac & Carassus, 2009, p. 109)

Subjective performance evaluation design – intense face-to-face discussion about performance outcomes – supports interactive use. Objective performance evaluation design – performance dimensions and their relative weightings are clear and can be assessed using a formula – supports diagnostic use. An internally consistent performance management system requires that intended use and performance evaluation design complement each other.

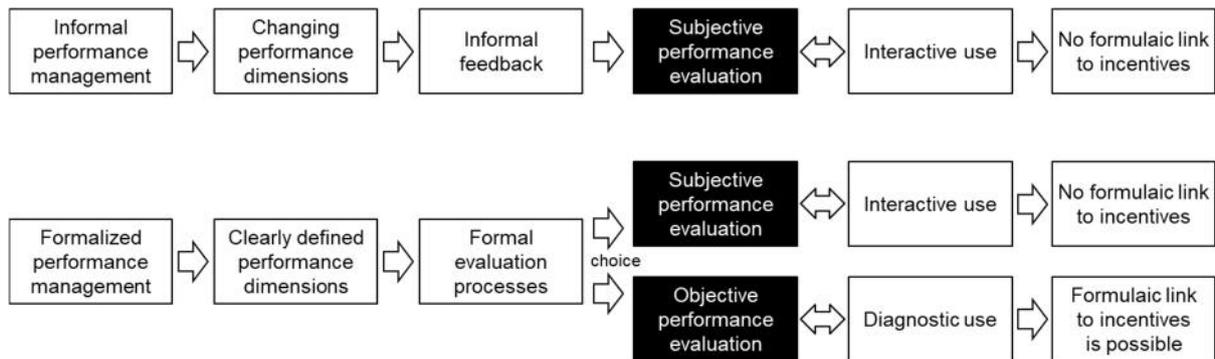


Fig. 39: Dependencies of performance evaluation designs

Performance evaluation and performance dimensions. The design for subjective or objective approaches to performance evaluation is dependent on the degree to which performance management practices are formalized and, as a consequence, performance dimensions are known and stable, or not. These dependencies are illustrated in figure 39. Informal performance management practices must result in subjective evaluation and hence interactive use of underlying performance management practices. In contrast, formalized performance

management practices, which can then be used as performance dimensions in performance evaluations, offer choices in use. Clearly defined performance dimensions can be used for both subjective and objective performance evaluation.

Link to reward systems. Subjective and objective performance evaluation can be directly or indirectly linked to reward systems. Objective performance evaluation allows for formulaic links to rewards and penalties. Subjective performance evaluation cannot be linked to incentives by a formula. Yet subjective evaluation allows to choose between direct links, indirect links or no links at all.

4.1.8. Reward systems

Ferreira & Otley's (2009, p. 267) eighth question is:

“What rewards – financial and/or non-financial – will managers and other employees gain by achieving performance targets or other assessed aspects of performance (or, conversely, what penalties will they suffer by failing to achieve them)?”

Ferreira & Otley's (2009, pp. 272-273) eighth performance management system component includes theoretical elaborations on three themes: types of rewards and penalties, the design of rewards and penalties as well as the relationship between reward systems and the use of performance management practices. In addition, the investigation into AlphaCo, BetaCo and DeltaCo identifies the relationship between incentives and organizational culture as an interesting and relevant emergent theme.

Types of rewards and penalties

Definitions. Merchant & Van der Stede (2007, p. 393) define: “Incentive systems are important because they inform and remind employees as to what result areas are desired and motivate them to achieve and exceed the performance targets.” And (p. 394): “Performance-dependent rewards, or incentives, provide the impetus for the alignment of employees' natural self-interests with the organization's objectives.” The term ‘incentives’ includes both rewards and penalties.

Rewards are “things that employees value” (Merchant & Van der Stede, 2007, p. 393). Rewards can be financial or non-financial (Ferreira & Otley, 2009, pp. 272-273). Financial rewards typically include: salary, promotion with change in compensation, stock options, bonus, profit-sharing plans, and gain-sharing plans (Merchant & Van der Stede, pp. 393-405). Non-financial rewards typically refer to: autonomy in how to work (e.g. home office), responsibility (e.g. participation in decision-making or team leadership), recognition and positive feedback from superiors and peers, public praise of achievements by superiors, job titles, working with a great team, office design and work environment (see chapter 4.1.1), trainings (e.g. leadership trainings or professional certificates) and exposure (e.g. going to conferences), specifically

designed employee development programs, and social events (Merchant & Van der Stede, pp. 393-405).

Penalties or sanctions are control activities that employees dislike and try to avoid (Ferreira & Otley, 2009, p. 273; Merchant & Van der Stede, 2007, p. 393). Merchant & Van der Stede (2007, p. 393) state: “It must be remembered that organizations can, and do, also provide some negative rewards, or punishments. In an organizational context, however, punishments commonly manifest themselves through an absence of positive rewards, such as not being paid a bonus or being passed over for a promotion.” Penalties typically include: no salary increase, no or low bonus, loss of job, title demotion, interference by superiors, assignment to unimportant tasks, no recognition, no public praise, public humiliation as well as official written job warning (Merchant & Van der Stede, pp. 393-394).

Overview. AlphaCo, BetaCo and DeltaCo are consistent in using types of rewards and penalties. All case studies are careful in using financial rewards. AlphaCo and BetaCo do not use bonuses at all at the time of investigation; DeltaCo is in the process of abolishing bonuses. Case studies avoid formal penalties, as founders fear negative consequences on employees’ motivation. Most penalties are informal and rather work through the short-term absence of rewards. The effective use of such informal penalties is very dependent on founders’ and executives’ leadership abilities. Case studies prefer to leverage non-financial rewards, especially group rewards and those rewards that attract ambitious employees and support professional development. These observations on skill-based salaries, stock options as well as case studies’ intense use of non-financial rewards correspond to previous studies; previous findings on financial bonuses are mixed (Barringer, Jones & Neubaum, 2005, pp. 664, 680, 681; Dávila, 2005, p. 243; Greiner, 1972, pp. 7, 10; Hambrick & Crozier, 1985, pp. 37, 44; Hand, 2008). Table 104 in appendix B8 provides empirical evidence from three different data sources.

Financial rewards. AlphaCo, BetaCo and DeltaCo are using financial rewards carefully (see table 105 in appendix B8). Financial rewards in use are skill-based salaries as well as promotions that include an increase in base salary. None of the case studies uses profit-sharing or gain-sharing schemes. All case studies express strong doubts about the use of financial bonuses.

AlphaCo does not use bonuses. Employees in diagnostic centers can gain an “extra payment” for taking over additional responsibilities, but this extra payment is no bonus. Regional (sales) managers, who supervise several diagnostic centers of a region, might be incentivized by financial bonuses at some point in the future. The CEO explains: “[Regional managers’] bonus is fixed in the first full year, so that learning can take place.” AlphaCo’s Head of Personnel & Academy elaborates: “We have a no frills approach, we don’t want to complicate things or

inhibit independent thinking, so we pay a base salary only and all employees have the same number of vacation days.”

BetaCo does not use bonuses systematically as well. BetaCo’s COO explains: “We have a low to no use of bonuses, as target setting is difficult or even not possible at the moment. We still have to learn what performance actually is at BetaCo and how to measure it. Only when performance can be measured really well then, we can think about paying bonuses.”

DeltaCo uses bonuses, yet this use of bonuses appears to be rather a matter of legacy than deliberate design. For this reason, DeltaCo is in the process of abandoning bonuses. The Senior Manager Corporate Development states: “Bonuses are to be reviewed and probably scrapped.” The COO’s performance management presentation outlines that bonuses are supposed to be paid only to teams with direct revenue responsibility: “Where do bonuses make sense? In case of objectively measurable and rather narrow activity, low variance of tasks (Sales, Account Management), and rewarding outstanding results.” Using contract amendments and new contracts, DeltaCo abolishes bonuses except for sales and senior managers.

BetaCo and DeltaCo allocate stock options to middle managers, key employees as well as selected early employees. Founders and executives also receive additional stock options in addition to their equity. Vesting periods are up to 48 months. BetaCo’s CEO highlights the importance of stock options in turning hired managers into entrepreneurs: “We have an employee stock option plan for new hired middle management with an [...] years vesting period. Our goal is to facilitate entrepreneurship in our 2nd [management] level.” AlphaCo does not allocate stock options to employees; however, the CEO states that founders are open to using stock options as incentives to support growth in the future.

Non-financial rewards. AlphaCo, BetaCo and DeltaCo use non-financial rewards intensely (see table 106 in appendix B8). All case studies use autonomy, early responsibility, fast careers, training and exposure, employee development, working with a great team, office design, and social events intensely as non-financial incentives. Consistently, the non-financial reward system consists of three components: rewarding group membership, rewarding professional progress, and rewarding effort and contribution.

The first component are group rewards: working with a great team, working in a great office with a well-designed work environment and having a good time together in team activities and social events. BetaCo uses social events, such as “The BetaCo Hütt-Gaudi” or “The BetaCo Wiesn”, strongly to hold up moral. BetaCo’s CEO explains: “After all these weeks of having pressure and working long hours it is essential to have a really good time together to restore relationships.” These group rewards are not dependent on performance; employees receive these rewards by becoming a member of the organization.

The second component rewards professional progress: autonomy, responsibility, fast career including nice titles, trainings and employee development programs. Managers and employees can gain these rewards with their own performance. The overarching idea is to reward the willingness to progress and learn. Founders offer a lot of responsibility with high autonomy early on. Employees grow with the company and can make a fast career. They combine possibly fast career paths with significant budgets for trainings and exposure (e.g. business trips, conferences, expert presentations) as well as employee development programs (e.g. “BetaCo Academies” or DeltaCo’s “International Talent Program”).

The third component are recognition and public praise based on effort and contribution. Frequent informal recognition by founders, managers and peers are part of the informal but demanded situational feedback (see chapter 4.1.7). In addition to informal positive recognition, founders use formal practices to give public praise for particularly noteworthy performance (e.g. BetaCo’s “First Monday Meeting”). AlphaCo’s founders appear to be more reluctant to offer nice titles as well as frequent recognition and public praise. The idea behind such a rather moderate use is to give recognition and praise more weight.

Penalties. AlphaCo, BetaCo and DeltaCo all hesitate to apply formal penalties; most penalties used are informal and short-term (see table 107 in appendix B8). Interference into jobs by superiors, lack of public praise or recognition as well as temporary assignment to unimportant tasks are the most frequently used penalties. Since these penalties are used informally, they can and are reversed rather quickly. Public humiliation is explicitly banished. DeltaCo’s COO explains: “Penalties are not done systematically. Mostly negative feedback in one-on-one meetings. Loss of job is the worst case.” AlphaCo’s Head of Personnel & Academy summarizes the intention behind the careful use of penalties: “Our culture – absence of fear.”

In a few instances, when employees’ performance does not convince, salaries are not increased or not as much as employees expected. Official, formal written job warnings are hardly used. Title demotion is not used at all. Loss of job is a measure of last resort, yet loss of job is being applied. Two instances of this formal ‘penalty’ were observed at AlphaCo and BetaCo. In both cases, founders communicated their decisions with reference to organizational values.

Reward patterns are consistent across all three case studies. Case studies’ incentive systems are well calibrated. Financial rewards are to be designed adequate in skill-based salaries with the chance of significant upside for top performers; however, financial rewards are not over-emphasized. Attraction, motivation and retention are created rather by non-financial rewards, especially group rewards and rewards based on learning and progress. Employees are aware of formal and informal penalties; however, penalties are avoided and work rather through informal, reversible indications by founders and managers.

Design of rewards and penalties

Definitions. Six relevant design choices for incentives can be identified in the literature (Bonner & Sprinkle, 2002, pp. 306-307; Ferreira & Otley, 2009, pp. 272-273; Merchant & Van der Stede, 2007, pp. 393-407). First, incentives can be used with different intensity, i.e. strong, moderate, low or no use. Second, different organizational levels might allow or require different types of incentives. Third, incentives can be allocated to individual members of the organization, to groups, or to all organizational participants. Fourth, incentives' time horizon – for how long incentives are effective – can be short-term or long-term. Fifth, incentives are usually the outcome of performance evaluation processes; thus, incentives are allocated based on subjective or objective performance evaluations. Sixth, incentives serve different purposes including an information or effort-directing purpose, a motivation or effort-inducing purpose, personnel related purposes such as attraction and retention of talented employees, and non-control purposes such as tax optimization, decrease of cash outlays or smoothing earnings.

Overview. AlphaCo, BetaCo and DeltaCo are consistent in how they design their reward systems. Case studies are careful with financial rewards and formal penalties and emphasize non-financial rewards across all organizational levels. Case studies use short-term and long-term incentives in well-balanced ways. For the most part, rewards and penalties result from subjective performance evaluations; the only exceptions are employees in AlphaCo's and DeltaCo's scaling units. Incentives are used mostly for the purposes of motivating, attracting and retaining employees. Incentives design is chosen to support intended use of performance management practices. Table 27 summarizes case studies' design choices.

Use intensity. AlphaCo, BetaCo and DeltaCo use incentives either strongly or rarely. When case studies apply incentives, then they emphasize them. Generally, they emphasize positive incentives and prefer non-financial rewards. Penalties, if they are used strongly, are used informally, are effective for the short-term only and can be reversed rather easily.

Incentives on organizational levels. AlphaCo, BetaCo and DeltaCo use the same incentives across all organizational levels. Most rewards and penalties are effective for all members of the organization. The only exception is equity in the firm and stock options, which are allocated to founders, managers and a few key or early employees in BetaCo and DeltaCo.

Group vs. individual incentives. All case studies make a clear distinction between group rewards and individual incentives. Group rewards – working with a great team, nice office design and social events – are non-financial, effective for the long-term and independent of performance. Apart from these group rewards, all other incentives are allocated based on the performance of individual employees.

Practices	Intensity	Organizational level	Group incentives	Time horizon	Perf. Evaluation	Control purpose
Financial rewards						
Stock options	Strong use	Founders & managers	Individual	Long-term	Subjective	A&R
Skill-based salary	Strong use	All org. members	Individual	Long-term	Subjective	A&R
Promotion Bonus	Strong use	All org. members	Individual	Long-term	Obj. & subj.	MOT, A&R
	DeltaCo only	DeltaCo sales	Individual	Short-term	Obj. & subj.	EFF, MOT
Profit-sharing	No use					
Gainsharing	No use					
Non-financial rewards						
Great team	Strong use	All org. members	Group	Long-term	Independent	MOT, A&R
Office design	Strong use	All org. members	Group	Long-term	Independent	MOT, A&R
Social events	Strong use	All org. members	Group	Short-term	Independent	MOT, A&R
Autonomy	Strong use	All org. members	Individual	Short-term	Subjective	MOT, A&R
Responsibility	Strong use	All org. members	Individual	Short-term	Subjective	MOT, A&R
Nice title	Strong use	All org. members	Individual	Long-term	Subjective	MOT, A&R
Fast career	Strong use	All org. members	Individual	Long-term	Subjective	MOT, A&R
Training	Strong use	All org. members	Individual	Long-term	Subjective	MOT, A&R
Development	Strong use	All org. members	Individual	Long-term	Subjective	MOT, A&R
Recognition	Strong use	All org. members	Individual	Short-term	Subjective	EFF, MOT
Public praise	Strong use	All org. members	Individual	Short-term	Subjective	EFF, MOT
Penalties						
Interference	Strong use	All org. members	Individual	Short-term	Subjective	MOT
No praise	Strong use	All org. members	Individual	Short-term	Subjective	MOT
Unimportant assignments	Moderate use	All org. members	Individual	Short-term	Subjective	MOT
Public shaming	No use					
No salary increase	Low use	All org. members	Individual	Long-term	Subjective	MOT
Loss of job	Low use	All org. members	Individual	Long-term	Subjective	MOT
Warnings	Low use	All org. members	Individual	Long-term	Subjective	MOT
No bonus	Low use	DeltaCo employees	Individual	Short-term	Obj. & subj.	MOT
Title demotion	No use					

Purpose: MOT = motivation, EFF = effort directing, A&R = attraction & retention, NCP = non-control purpose

Tab. 27: Overview for designs of rewards and penalties at case studies

Time horizon. Case studies use incentives that are effective for both the long-term and the short-term. Incentives that are used with high intensity and have the strongest effect on organizational members are typically used for the long-term.

Link to performance evaluations. AlphaCo, BetaCo and DeltaCo prefer subjective performance evaluation to decide about incentives. If used, objective performance evaluation is only used for deciding about financial incentives. AlphaCo uses objective performance evaluations to determine salary increases and promotions of employees in their diagnostic centers. DeltaCo uses objective evaluations for calculating bonuses in their sales teams.

Purposes of incentives. Case studies use incentives for control purposes only non-control purposes is not observed. As for control purposes, case studies focus on motivation as well as on personnel-related purposes, i.e. attraction and retention of talented employees. Financial

rewards focus on attraction and retention of talented employees more than on motivating them or directing their efforts. Motivation is mostly induced by non-financial rewards. Non-financial rewards also take a significant role in attracting and retaining employees. Founders use mainly recognition and public praise to direct employees' efforts. Penalties are used for the purpose of negative motivation. Those penalties that are strongly used are also used rather informally and are effective for the short-term so that penalties can be reversed quickly.

Counterintuitive findings. Overall, case studies have a clear idea of how to design their incentives to support growth strategies. Despite their different business models and industries, case studies show consistent patterns of how they design their reward systems. Two findings are particularly interesting or even counterintuitive. First, ventures usually need the famous 'extra mile' from their employees to support their growth. This is why they have a growth vision and set stretch targets. Nonetheless, case studies do not motivate their employees with high-powered financial rewards, they use bonuses very selectively, and they also do not really use incentive for effort-directing purposes. In addition, case studies emphasize group rewards, which are independent of individual performance. Second, ventures usually rather have a short-term focus, because they are growing and are still finding their place in their industries. Nonetheless, case studies design the larger part of strongly used incentives for the long-term.

Reward systems and use of performance management practices

Definition. Simons (1995) elaborates that diagnostic and interactive control systems are supported by particular designs of incentives. Simons (1995, pp. 78-81, 117-119) emphasizes two main differences. First, diagnostic control allocates rewards based on objective, formulaic performance evaluations, while interactive control is associated with subjective performance evaluation. Second, diagnostic control rewards measurable results compared pre-determined targets, while interactive control rewards contributions rather than results.

For diagnostic use, Simons (1995, p. 79) states: "Diagnostic control system incentives tend to be based on explicit formulas, which provide objectivity, define the outputs desired, and require the least amount of management attention. Objectivity provides motivation and clear direction for effort. Individuals know what they will be rewarded for and how it is to be measured. Definitions of expected outputs provide guidance as to where the attention and opportunity seeking energy of subordinates should be focused. Finally, formulas free management attention for other tasks." For interactive use, Simons (1995, p. 117) states: "For a control system to be truly interactive, there must be specially designed incentives. Rewards for achievement in the activities monitored by an interactive control system are not determined by formula. Interactive control systems are associated with subjective, contribution-based rewards. There are two aspects of this proposition to be considered: subjectivity in the reward structure and rewarding contribution rather than results."

Overview. AlphaCo, BetaCo and DeltaCo design their incentives in order to support both interactive and diagnostic use of performance management practices. Performance evaluation approaches, design of incentive and use of performance management practices are consistent. Case studies are careful with incentives designed to support diagnostic use of practices too strongly. Figure 40 illustrates these relationships.

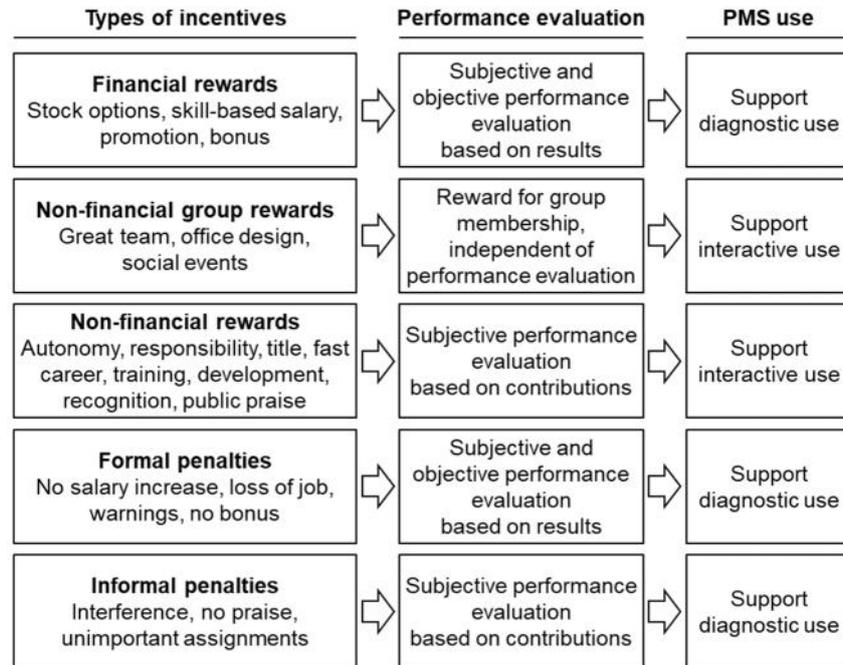


Fig. 40: Incentives design, performance evaluation and support for use of practices

Performance evaluation. AlphaCo, BetaCo and DeltaCo design incentive systems to support interactive control. Subjective performance evaluations prevail in allocating rewards and applying penalties. Objective, formulaic performance evaluations are only used for AlphaCo's diagnostic centers to determine promotions and for DeltaCo's international sales offices to determine bonuses based on revenue targets.

Rewards. AlphaCo, BetaCo and DeltaCo reward both contributions and results. Financial rewards are allocated based on real results, even when these results are evaluated subjectively; contributions only appear to not be sufficient for financial rewards. The only exception is stock options, which are allocated either independent of performance when employees start with the firm or later based on achieved performance outcomes. Non-financial rewards are allocated based on contributions. Group rewards are dependent on being a member of the organization and are hence independent of individual performance.

Penalties. Penalties, especially formal ones, are applied in the case of severe rule violation, including organizational values, as outlined by Simons (1995, p. 52) in the context of boundary systems. In addition, unsatisfying performance is sanctioned. AlphaCo's CEO states: "Actually

no penalties are supposed to be applied, only in the case of visible non-progression.” Informal penalties are used, if employees do not contribute. Formal penalties, which are more severe and effective for the long-term, are used when results are clearly not delivered.

Emergent theme – incentives and organizational culture

Definition. AlphaCo, BetaCo and DeltaCo design their incentives consistent with their organizational cultures. More specifically, founders attempt to provide rewards and apply penalties consistent with their organizational values systems. Schein (2008, pp. 126-127, italics added) states on the relationship between incentives and culture: “Every group must develop a system of sanctions for obeying or disobeying its norms and rules. There must evolve some consensus on what symbolically and actually is defined as reward or punishment and on the manner in which it is to be administered reason. The shared assumptions concerning this issue constitute some of the most important elements of an *emerging culture in a new organization*. Change in the reward and punishment system is also one of the quickest and easiest ways to begin to change some elements of the culture.”

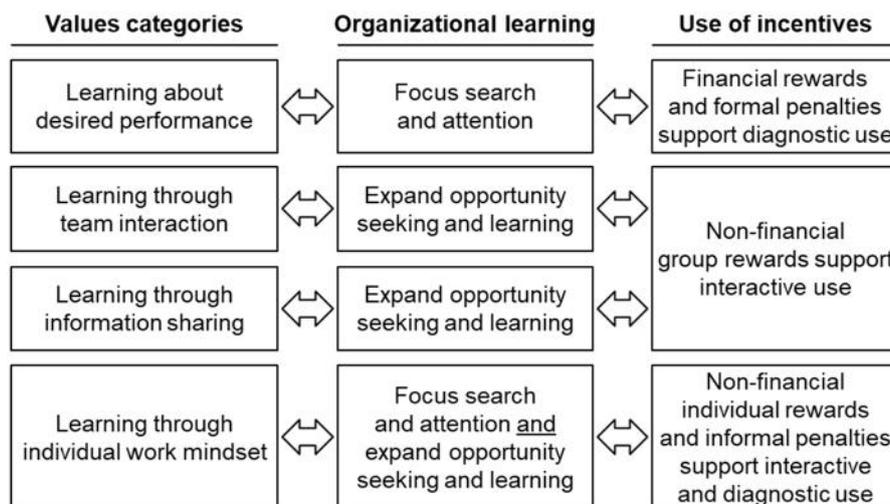


Fig. 41: Organizational values systems, organizational learning modes and incentives design

AlphaCo, BetaCo and DeltaCo’s four organizational values categories provide orientation for how to design their interrelated systems of rewards and penalties. These relationships are illustrated in figure 41. Organizational values related to learning about expected performance focus attention (support for diagnostic use) and are associated with financial rewards and formal penalties. Values related to learning through team interaction and information sharing expand opportunity seeking (support for interactive use) and are associated with non-financial group rewards. Values related to learning through a desired individual work mindset focus attention (support for diagnostic use) and expand opportunity seeking (support for interactive use); they are associated with a balance of non-financial rewards and informal short-term penalties.

4.1.9. Information flows, systems and networks

Ferreira & Otley's (2009, p. 267) ninth question is:

“What specific information flows – feedback and feedforward –, systems and networks has the organization in place to support the operation of its performance management systems?”

Ferreira & Otley's (2009, pp. 273-274) ninth performance management system component includes theoretical elaborations on three themes: information flows, information systems as well as information networks. Meetings and informal yet designed communication are included in the chapter on information networks.

Information flows

Definition. Ferreira & Otley (2009, p. 273) state: “Information flows, systems and networks are essential enabling mechanisms to any performance management system; they are the binding agent that keeps the whole system together. They act like the nervous system in the human body, transmitting information from the extremities to the center and from the center to the extremities.” Ferreira & Otley (2009, p. 273) define: “The question notes the difference between feedback information – that is, information used to enable the undertaking of corrective and/or adaptive courses of action – and feed-forward information – that is, information used to enable the organization to learn from its experience, to generate new ideas and to recreate strategies and plans. [...]. Feedback and feed-forward information flows are omnipresent in contemporary organizations and they are directly related to the notions of single loop and double loop learning (Argyris and Schön, 1974, 1978).”

Overview. AlphaCo, BetaCo and DeltaCo are considerate in designing information flows, systems and networks. Case studies focus on disseminating information and exchanging knowledge. Organizational values systems support transparency, demand free flow of information and avoid information privileges. Most performance management practices support both feedback and feedforward information flows. Case studies leverage information systems – self-developed and purchased software solutions – extensively to digitize organizational processes. Formal meeting schedules are designed for horizontal and/or vertical information flows. Case studies also use practices to promote informal employee networks, informal communication and even accidental exchange of information (cf. Cardinal, Sitkin & Long, 2004). Table 108 in appendix B9 provides empirical evidence from three different data sources.

Design and use of information flows. AlphaCo, BetaCo and DeltaCo are using feedback and feedforward information flows to support their performance management system. Most practices are used for both feedback and feedforward information flows (see table 28). Case studies work towards more standardization and measurability in order to increase feedback information flows. As per the definition provided above, only objective, formulaic performance

evaluation processes are pure feedback information flows. Objective performance evaluation is found in AlphaCo's and DeltaCo's scaling units. Clear feedforward information flows are hard to identify as well. It could be argued that only the cultural education process as well as informal networks and communication might relate to feedforward information flows, although this could be debated as well. Interestingly, performance management practices relate to both types of information flows.

	AlphaCo	BetaCo	DeltaCo
Feedback	Objective performance evaluation processes;	Objective performance evaluation processes;	Objective performance evaluation processes;
Feedforward	Cultural education process; Informal networks and communication.	Cultural education process; Informal networks and communication.	Cultural education process; Informal networks and communication.
Feedback and feedforward	Organizational design, roles and responsibilities; Office design; Strategic management process; Key performance measures; Operational target setting process; Subjective performance evaluation processes; Reward systems; Information supply by growth supporting functions; Information systems; Formal information networks and meetings.	Organizational design, roles and responsibilities; Office design; Strategic management process; Key performance measures; Operational target setting process; Subjective performance evaluation processes; Reward systems; Information supply by growth supporting functions; Information systems; Formal information networks and meetings.	Organizational design, roles and responsibilities; Office design; Strategic management process; Key performance measures; Operational target setting process; Subjective performance evaluation processes; Reward systems; Information supply by growth supporting functions; Information systems; Formal information networks and meetings.

Tab. 28: Information flows and performance management practices

Information flows and organizational values. AlphaCo, BetaCo and DeltaCo emphasize the free flow of information. Such high degree of transparency might be explained, as case studies find it difficult to distinguish between clearly feedback and clearly feedforward information flows. For this reason, values systems support the acquisition of knowledge, information sharing and knowledge transfer. Free flow of information, transparency, information sharing are supported and demanded by core values. AlphaCo appreciates "open mindset" and "questioning the status quo", BetaCo makes "decisions based on facts and data", and DeltaCo values "each team member's uniqueness and contribution". This statement by DeltaCo's COO might explain the essence of such remarkably free flow of information: "We over-communicate a lot; it helps with aligning and learning."

Role of growth supporting functions. Case studies take a set of measures to support and, carefully, channel information flows. All performance management practices are designed and used to facilitate information flows. Some practices are designed to create information flows specifically, including: cultural education processes, functional organizational designs, growth supporting functions, business specific growth supporting functions, office designs, strategic management processes, organizational processes, strategic performance measurement systems,

operational target setting processes, performance evaluation processes, non-financial group rewards, information systems, as well as information networks, meetings and informal yet designed communication. Growth supporting functions play a significant role in designing all these practices and, therefore, information flows.

Information systems

Definition. Ferreira & Otley (2009, p. 274) emphasize the relevance of information systems (IS): “Systems are used to organize accounting and other control information. They are part of the information system and information technology infrastructure that pervade contemporary organizations.”

Simons (1995, p. 186) elaborates on the relationship between information systems and the levers of control: “Organizational constraints of time, distance, and space often limit the ability of managers to codify and diffuse information in the most effective way. Information technology, if properly designed, can overcome these constraints and allow the control levers to function more effectively.” Granlund & Mouritsen (2003, p. 79) add for consideration that “as information technology enables the running of modern accounting and management control, it may also limit the design and implementation of management control systems.”

Overview. AlphaCo, BetaCo and DeltaCo use information systems extensively, despite their young age. Information systems and technology support free flows of information within the case studies’ organizations. Early on all case studies leverage external software solutions as well as software as a service solutions (SaaS) in business operations, for collaboration purposes and in support functions. AlphaCo and DeltaCo develop information systems themselves, which is part of their core intellectual property. Findings correspond to previous research (Churchill & Lewis, 1983, p. 34; Greiner, 1972, p. 6; Miller & Friesen, 1984, p. 1163). Table 109 in appendix B9 compares findings on information systems across the three case studies.

IS for business operations. AlphaCo, BetaCo and DeltaCo use information systems to organize almost their entire value chain. They all use a customer relationship management system, an information system for customer service and software solutions for core business operations. AlphaCo develops their own software, the “AlphaCo Information System”, to support their process-driven business model. In addition to their “AlphaCo Information System”, AlphaCo works with external software solutions as well as SaaS solutions. BetaCo works with external software solutions, which they adapt to their needs, as well as several SaaS solutions. DeltaCo uses a combination of self-developed software, the “DeltaCo DL 360”, external software solutions, and SaaS solutions.

IS for collaboration. Case studies use information systems extensively to digitally organize collaboration between organizational participants. File hosting and office applications are, of course, standard in all organizations. Yet the intense use of project management and knowledge

management software solutions is noteworthy. This observation supports the view that case studies emphasize information sharing and knowledge exchange.

IS for support functions. Case studies' growth supporting functions use information systems intensely as well. Information systems are part of support functions' professionalization. At all case studies the human resources function, the finance function and the business intelligence function introduce software solutions and SaaS solutions early on. Taking accounting in-house from an external tax accountancy is deemed to be a sign of a startup coming serious. All case studies' support functions prefer self-service solutions to provide employees with free access to administrative as well as performance information. Support functions as well as business specific growth supporting functions also play relevant roles in the adoption of information systems in core business functions.

Overall, AlphaCo, BetaCo and DeltaCo digitize many of their organizational processes. Early on they introduce information systems and technology. Given case studies' young age, their focus on supplying their organizations with information is noteworthy.

Information networks, meetings and informal communication

Definitions. Simons (1995) emphasizes the relevance of meetings in person. While meetings for diagnostic control are supposed to be short in order to preserve management attention (Simons, 1995, pp. 71, 170), interactive control is characterized by intense "face-to-face meetings of superiors, subordinates, and peers" (Simons, 1995, p. 97). In their discussion on governance structures, Malmi & Brown (2008, p. 294) highlight as well: "Meetings and meeting schedules create agendas and deadlines which direct the behavior of organisation members."

Meetings can be designed according to their regularity (regular vs. ad-hoc), frequency (daily, weekly, monthly, quarterly and other periods), meeting participants as well as meeting purposes. Purposes include information-sharing, knowledge exchange, coordination, performance measurement, target setting and performance evaluation, and decision-making.

Ferreira & Otley (2009, p. 274) emphasize the importance of informal communication, informal networks among employees and even 'random' or 'accidental' exchange of information: "Information networks go beyond formal mechanisms. Informal networks of individuals can also play a key role in the dissemination of information within the organization. This is something that will be shaped by and shape the prevailing organizational culture." Despite the general idea of informality, such informal communication and networks are often initiated by formal performance management practices.

Overview. AlphaCo, BetaCo and DeltaCo are conscious about designing their meeting schedules for vertical and/or horizontal information flows. Communication is increasingly formalized. The meeting schedules show a consistent pattern. Most meetings take place in short

frequencies of one month or less. Generally, case studies appear to prefer rather comprehensive meetings with a large group of participants. Regular meetings, such as founders meetings or leadership team meetings, typically serve several purposes; for this reason, they are called ‘multi-purpose’ meetings. Yet meeting purposes are increasingly specialized in their purposes, for instance in the course of introducing a strategic management process, a target setting process or performance evaluation processes. Case studies also use practices that initiate informal communication and networks. These observations correspond to previous research (Akroyd & Kober, 2019, p. 10; Cardinal, Sitkin & Long, 2004; Greiner, 1972, p. 6; Miller & Friesen, 1984, p. 1171). Table 110 in appendix B9 compares findings on meetings across the three case studies.

Founders meeting. All case studies have regular weekly meetings of the founder team. AlphaCo’s founders meet in the “Monday Meeting”. BetaCo’s founders in the “Founders Weekly”. DeltaCo’s CEO, COO and CRO meet in the “Management Jour Fixe”. Founders use these weekly meetings for all purposes, but mostly to take decisions.

Founders and middle managers meeting. Founders have regular meetings with those middle managers, who report into them. AlphaCo calls these meetings “Jour Fixe”, BetaCo names them “Weeklies, and DeltaCo refers to them as “One-on-Ones”. These meetings are mostly used for target setting, performance measurement and performance evaluation as well as decision-making.

Leadership team meeting. All case studies schedule regular meetings of the entire leadership team. AlphaCo’s founders and middle managers meet monthly in the “Management Team Meeting” and bi-weekly in the “Quality Circle”. BetaCo’s leadership team meets weekly in the “Weekly Management Update”. DeltaCo meets bi-weekly in the “Management Call Operations” and “Management Call Product/Tech”. These meetings are ‘multi-purpose’ meetings: they are used for information-sharing, coordination between teams, performance measurement, target setting and performance evaluation, decision-making and sometimes knowledge exchange. The frequencies of these meetings are quite short “to keep on pressure and focus on things that need to get done”, as BetaCo’s CEO explains.

Company-wide meeting. BetaCo and DeltaCo have regular company-wide meetings, i.e. meetings where all organizational members take part. BetaCo has the monthly “First Monday Meeting”. DeltaCo has a bi-weekly “All Hands”. AlphaCo initiates company meetings triggered by events, yet also on a quite regular basis. These company meetings are used for information-sharing purpose only.

Strategic management meeting. All case studies are in the process of establishing regular meetings in the context of their strategic management processes. AlphaCo starts with the “OGSM 2016 Workshop Series”. BetaCo still formulates strategy rather ad-hoc and often triggered by their investors, but intends to do more regular “strategy offsites”. DeltaCo has

established a bi-annual “DeltaCo Strategy Week”. These strategy meetings are used to gather and share information, measure and evaluate company performance, determine strategic objectives and associated strategies, as well as making important long-term decisions.

Board of directors meeting. Since all case studies have received investments from venture capitalists, they have regular board meetings. AlphaCo and DeltaCo meet their board of directors quarterly, BetaCo meets their investors on a monthly basis. These meetings are used for information-sharing and decision-making.

Target setting meeting. AlphaCo, BetaCo and DeltaCo are in the process of formalizing target setting. AlphaCo uses several of the meetings outlined above to set targets. BetaCo and DeltaCo adopt the OKR goal setting approach and thus set objectives and associated key results on a quarterly basis.

Performance evaluation meeting. All case studies have regular meetings for evaluating employees’ performance. AlphaCo has the annual “Performance Management Process”, which includes a bi-annual interims talk. BetaCo introduces the annual “Feedback Process”. DeltaCo has several meetings to evaluate performance on the employee level: the bi-annual “Talent Management Matrix” meeting, bi-annual “Career Development Talks” as well as quarterly “Performance Evaluation”.

Knowledge exchange meeting. BetaCo and DeltaCo have established regular meetings for the purpose of knowledge exchange, in-house training and exposure to talented employees. These meetings are led by internal experts, who educates other organizational members on a topic. BetaCo schedules the bi-weekly “BetaCo Academies”. DeltaCo initiates the “Management Update & Training” every two months as well as the frequent yet not regularly scheduled “Knowledge Sessions”.

Team meetings. All case studies have regular within-team and cross-team meetings. Usually these meetings take part on a weekly basis. Middle managers meet with all employees of their teams (functions) on a regular basis. These team meetings are predominantly used to share information and coordinate.

Cross teams meetings. Case studies also schedule regular cross teams meetings, mainly for coordination purposes. Participant groups are rather large. The design of cross-team meetings – regularity, frequency, participants and purposes – is particularly relevant, as these meetings facilitate alignment between functions.

Catchy names. Some regular meetings are so relevant that founders give them ‘catchy’ names. Examples are AlphaCo’s “Quality Circle”, BetaCo’s “First Monday Meeting” or DeltaCo’s “Strategy Week”. Further, BetaCo’s CEO spends about one third of his time in regularly

scheduled meetings. Since meetings are such important performance management practices, all case studies insist on a purposeful ‘meeting culture’.

Informal communication and networks. AlphaCo, BetaCo and DeltaCo also deliberately use practices to initiate informal communication and networks (see table 111 in appendix B9). The probably most relevant practice is the office design. Seating arrangements, kitchen, lounge, sports facilities, and other design choices create employee networks, informal communication flows and also accidental exchange of information.

Social events and team activities facilitate informal communication and create employee networks in addition to the formal networks established by the organization structure and the formal meeting schedule. Working late in the evening, which is sometimes required in growing ventures, bonds employees. Founders support this bonding by providing pizza and other food to employees working late. Friendships are formed, for instance AlphaCo’s “Penguin Group” of early employees in the headquarters. Veterans, smokers, party-goers, or sportsmen are, among others, also coherent informal employee networks.

Formal practices create informal communication. Formal practices design informal practices and informal networks and communication are not left to chance. The office design influences what employees encounter each other and talk. Social events and team activities mix organizational participants on a regular basis and create informal networks and communication that would not be created out of employees’ daily work. Late work bonding is supported by group rewards. Formal practices that create informal communication often bear reference to organizational culture.

BetaCo’s ‘smokers’ network’. In this context, BetaCo’s founders had an interesting approach. BetaCo’s business is about healthy eating, wellness and fitness. However, smokers formed a coherent informal network inside BetaCo. The smokers group contradicted BetaCo’s organizational culture. Founders used a form of non-financial group rewards to promote their fitness culture. They established a gym in the basement and initiated regular “Fitness Challenges”. These practices created a new informal network more in line with BetaCo’s culture, which eventually replaced the smokers’ network. These examples illustrate that informal networks and communication are created significantly by the deliberate use of formal performance management practices.

4.1.10. Performance management system use

Ferreira & Otley’s (2009, p. 267) tenth question is:

“What type of use is made of information and of the various control mechanisms in place? Can these uses be characterized in terms of various typologies in the literature? How do controls and their uses differ at different hierarchical levels?”

Ferreira & Otley's (2009, pp. 274-275) tenth performance management system component includes theoretical elaborations on performance management system use (see chapter 2.2.6).

Definitions. Ferreira & Otley's (2009, pp. 265-266, 274-275) concentrate their theoretical development of question 10 on Simons' (1995) concept of interactive and diagnostic use of performance measurement and feedback systems. The following analysis concentrates on key performance measures, target setting, performance evaluation, and reward systems.

To improve readability and understanding of the cross case analysis, the discussion of performance management system use is included in questions five to eight of Ferreira & Otley's (2009) performance management framework. For this reason, the following is a summary of the previous analysis on how case studies use key performance measures (chapter 4.1.5), target setting (chapter 4.1.6), performance evaluation (chapter 4.1.7), and reward systems (chapter 4.1.8). Reward systems are not part of performance measurement and feedback systems, but their design is to support interactive and/or diagnostic use (Simons, 1995, pp. 78-81, 117-119).

For diagnostic use, Simons (1995, p. 59) defines: "Diagnostic control systems are the formal information systems that managers use to monitor organizational outcomes and correct deviations from preset standards of performance. Three features distinguish diagnostic control systems: (1) the ability to measure the outputs of a process, (2) the existence of predetermined standards against which actual results can be compared, and (3) the ability to correct deviations from standards." For interactive use, Simons (1995, p. 97) defines: "All interactive control systems have four defining characteristics: Information generated by the system is an important and recurring agenda addressed by the highest levels of management. The interactive control system demands frequent and regular attention from operating managers at all levels of the organization. Data generated by the system are interpreted and discussed in face-to-face meetings of superiors, subordinates, and peers. The system is a catalyst for the continual challenge and debate of underlying data, assumptions, and action plans."

Overview. AlphaCo, BetaCo and DeltaCo use performance measurement and feedback practices interactively and diagnostically. Consistently all case studies start with interactive use of practices in the startup stage. All case studies intend to increase diagnostic use, maintain interactive use, and make clear distinction between diagnostic and interactive use. Case studies intend to achieve a balance between interactive and diagnostic use by adopting practices such as integrated strategic performance measurement systems, formal operational target setting processes, formal performance evaluation processes as well as corresponding reward systems. Previous research supports some of these findings, although these studies do not investigate the specific context of growing ventures (cf. Henri, 2006a; Su, Baided & Schoch, 2015; Widener, 2007). Table 112 in appendix B10 compares findings across the three case studies.

Key performance indicators. Case studies use key performance indicators interactively and diagnostically. On the strategic planning level, case studies use strategic KPIs interactively to facilitate learning about growth vision, key success factors, strategy and strategic objectives, and also about their value propositions. On the management control level, case studies use growth KPIs both interactively and diagnostically to align strategy and operations. Growth KPIs are also used to learn about and control strategic-recurring processes. The intention is to learn so that founders can increase the diagnostic use of growth KPIs. On the operational control level, case studies use ops KPIs diagnostically to control operational processes.

Case studies mix interactive and diagnostic use of KPIs. Put differently, KPIs are not used either clearly interactively or clearly diagnostically dependent on situation and context. Yet growth requires to become clearer in when KPIs are used interactively and when diagnostically. For this reason, all case studies are in the process of introducing integrated strategic performance measurement systems. AlphaCo works on the “AlphaCo Process House”. BetaCo and DeltaCo initiated action projects to develop the “BetaCo Strategic KPI System” and the “DeltaCo Growth Cycle”, respectively. Three intentions are observed: to increase diagnostic use of KPIs, to improve the distinction between interactive and diagnostic use, and to balance interactive and diagnostic use of KPIs.

Target setting. AlphaCo, BetaCo and DeltaCo formalize their operational target setting processes to alternate interactive and diagnostic use. On the company level, the strategic management process achieves a similar alternation for longer time horizons. The setting of targets and the evaluation of target achievements – the meetings and discussions associated – are used interactively. The targets themselves as well as the reviews of progress towards pre-defined targets are used diagnostically. BetaCo’s and DeltaCo’s adoption of the OKR goal setting system, which follows a specific design for the target setting process, supports this observation.

Performance evaluation. The design of performance evaluations reflects the intended use of key performance measures and targets. Interactive use implies subjective evaluation and vice versa. Diagnostic use requires objective evaluation and vice versa. AlphaCo, BetaCo and DeltaCo evaluate performance mostly subjectively, or mix objective and subjective approaches to performance evaluation. Informal situational feedback plays an important role on the employee level. Informal situational feedback relates to interactive use of underlying practices (e.g. vision or values).

Objective, formulaic performance evaluations are only conducted in AlphaCo’s diagnostic centers (“Performance Management Process”, “Performance Evaluation Tool”, “Index Score”) and DeltaCo’s international sales offices (revenue targets vs. actual results). Thus, performance measurement and feedback practices are used more diagnostically in AlphaCo’s and DeltaCo’s

scaling units. Although not formulaic in the literal sense, case studies' approaches to performance evaluations for operational processes, such as customer service, also support diagnostic use of key performance measures and targets.

Reward systems. AlphaCo, BetaCo and DeltaCo use the design of their reward systems to support intended use. Overall, the design of rewards and penalties supports rather interactive use with the exception of AlphaCo's and BetaCo's scaling units. Non-financial rewards and particularly non-financial group rewards are used to support the interactive use of performance measurement and feedback practices. In AlphaCo's and DeltaCo's scaling units financial rewards dependent on objective performance evaluations and support diagnostic use. Informal penalties and especially formal penalties are used rather to support diagnostic use.

Use at different organizational levels. AlphaCo, BetaCo and DeltaCo are consistent in how they use performance management practices at different hierarchical levels (see table 113 in appendix B10). On the company level, founders use strategic KPIs and strategic objectives interactively. Financial business plans include targets for financial KPIs, which indicates diagnostic use to some extent. On the functional level, interactive use dominates still, yet diagnostic use is intended to be emphasized. On the employee level, clear diagnostic use is observed only for AlphaCo's and DeltaCo's scaling units as well as for some standardized operational processes such as in customer service. As outlined above, the "AlphaCo Process House", the "BetaCo Strategic KPI System" as well as the "DeltaCo Growth Cycle" are developed with the intention to increase diagnostic use, to improve the distinction between both types of use, and to balance interactive and diagnostic use.

4.1.11. Performance management system change

Ferreira & Otley's (2009, p. 267) eleventh question is:

"How have the performance management systems altered in the light of the change dynamics of the organization and its environment? Have the changes in performance management systems design or use been made in a proactive or reactive manner?"

Ferreira & Otley's (2009, p. 275) eleventh performance management system component includes theoretical elaborations on the antecedents and outcomes as well as proactiveness versus reactivity of performance management system change.

Definitions. Ferreira & Otley (2009, p. 275) state that "environments change, organizations change, and so performance management systems also need to change in order to sustain their relevance and usefulness". This is particularly true for entrepreneurial growth companies. In fact, in a way Ferreira & Otley's question 11 is a variation of the research question.

Ferreira & Otley (2009, p. 275, italics added) define: "The idea of change in the performance management system applies to both the *design* infrastructure that underpins the performance

management system (e.g. the management control techniques and the key performance measures used) and also to the way performance management information is *used* (e.g. the aspects which are emphasized and those which are not).”

Ferreira & Otley (2009, p. 275, italics added) define further: “The issue is not the process of change itself, but rather the extent and type of change that has taken place in the performance management system design and use as a response to or in anticipation of changes in the organization and its environment. In other words, the question draws the attention to the *antecedents (i.e. the causes) and consequences (i.e. the outcomes)* of change in the performance management systems, leaving issues of process aside.”

Antecedents of change to the performance management system in entrepreneurial growth companies have been identified by previous research (cf. Dávila & Foster, 2005, 2007; Dávila, Foster & Jia, 2010). This study considers ten relevant antecedents, which are listed in table 114. Outcomes of change relate to Ferreira & Otley’s (2009) first nine performance management system components and are listed in table 115.

Ferreira & Otley’s (2009, p. 267) also ask about whether changes have been made proactively or reactively. Change to the performance management system as a whole as well as to individual performance management practices can be managed, formal and systematic; and change can be unmanaged, informal and unsystematic (Burns & Viavio, 2001, p. 394).

Overview. AlphaCo, BetaCo and DeltaCo are consistent with respect to six antecedents that most significantly lead to performance management system change. Outcomes of change apply to the design of almost all components of the performance management system; only the components of vision and mission as well as key success factors can be classified as stable. Antecedents of change as well as outcomes of change to the performance management system are related to each other. According to this study’s analysis, the dominant antecedent is the shared growth vision, while the final outcome of change is the design of almost the entire performance management system. Performance management system use undergoes change as well: Changes to design are done in order to change use from predominantly interactive use to more diagnostic use and, eventually, balanced use. Founders make changes to their performance management systems in a proactive, systematic manner. These observations correspond to previous studies (Baum, Locke & Smith, 2001; Barringer, Jones & Neubaum, 2005; Colombo & Grilli, 2013; Dávila & Foster, 2005, 2007; Dávila, Foster & Jia, 2010; Hellmann & Puri, 2002; Kazanjian & Drazin, 1990). Tables 114 and 115 in appendix B11 compares findings on antecedents as well as outcomes across the three case studies.

Antecedents of change. AlphaCo, BetaCo and DeltaCo emphasize six out of the ten theoretical antecedents of change (see table 114). First, founders’ commitment to their growth visions set in motion all the following antecedents. Second, founders’ previous managerial experience in

designing and using performance management practices improves their ability and willingness to proactively anticipate and implement changes to their performance management system. Third, the growth vision implies a growth strategy and in order to implement the growth strategy, the performance management system has to be adapted. This is particularly true in AlphaCo's and DeltaCo's cases, since their growth strategies include growth in decentral organizational units, which is another antecedent of change.

Fourth, growth vision and growth strategy, especially growth strategies involving decentral organizational units, require organizational growth; thus, growth in number of employees is a further strong antecedent. Fifth, the hiring of professional middle managers is a significant antecedent for three reasons: Middle managers are required by organizational growth to process information, coordinate and control; middle managers contribute their professional knowledge for designing performance management practices; and middle managers expect to be managed by professional performance management practices. Sixth, the professionalization of support functions is driven by the antecedents above; yet support functions are an antecedent in themselves as they enable the re-design and adoption of performance management practices.

The remaining four antecedents of change are relevant for some case studies, but not for others. First, the presence of venture capital has been identified as a particularly relevant antecedent by the literature (Dávila & Foster, 2005, 2007). AlphaCo's investor appears to be not involved in performance management at all. BetaCo's strategic investor pushes for changes. DeltaCo's early investor, who considers itself as an "operational VC", provides formal knowledge networks about performance management practices.

Second, managerial chaos is no antecedent for AlphaCo and DeltaCo. BetaCo does experience some managerial chaos, as indicated by too many meetings that founders need to attend. Third, founders, especially DeltaCo's COO, consider performance management as a source of competitive advantage. Nonetheless, this study considers competition as a rather weak antecedent of change in the context of the three case studies. Finally, AlphaCo and DeltaCo appear to not use performance management practices for external legitimization. BetaCo's founders, in contrast, do use performance management practices in some instances to legitimize their actions towards their strategic investor.

Outcomes of change. AlphaCo, BetaCo and DeltaCo change almost all practices of their performance management systems (see table 115). Only two performance management system components remain comparably stable at the time of investigation: vision and mission, and key success factors. Case studies do not change practices related to organizational culture. Vision and organizational values systems are particularly stable. Only the formalization of statements for missions are to be improved. And case studies are aware of key success factors and do not change them.

In contrast to organizational culture and key success factors, AlphaCo, BetaCo and DeltaCo change the other performance management system components profoundly. Performance management practices of organization structure, strategies and plans, key performance measures, target setting, performance evaluation, reward systems as well as information flows, systems and networks are either re-designed or newly adopted.



Fig. 42: Antecedents and outcomes of performance management system change

Antecedents and outcomes. Outcomes of change are linked to antecedents, as illustrated in figure 42. Founders' growth vision and venture capitalists' growth expectations results in a strategy for how to achieve this growth. Growth strategy as well as decentral organizational units require growth in employees. The growth strategy often requires decentral organizational units, and does so in AlphaCo's and DeltaCo's cases. Organizational growth is sustained and controlled by an experienced middle management and professionalized growth supporting functions. Founders' managerial experience is the 'bracket' of this chain, as their abilities enable them to understand and anticipate the other antecedents as well as necessary outcomes of change.

The establishment of a middle management level as well as the professionalization of growth supporting functions enable and require changing the performance management system. This study considers middle management and support functions as antecedents to change as well as outcomes of the antecedents described above. This insight highlights one more time the central role of both middle managers and growth supporting functions.

The sequence of antecedents and outcomes of change starts with founders' growth vision and the objective to grow the business. The sequence ends with the outcome of changing the performance management system. The analyses on Ferreira & Otley's (2009) question 10 are, therefore, an indication that the first two parts of the growth stage contingency model are conceptualized correctly.

Proactive vs. reactive change. AlphaCo, BetaCo and DeltaCo make changes to their performance management systems in a proactive manner. Our action projects as well as the use of other specialized consultants are indications that founders manage change rather proactively and systematically. Case studies focus on hiring middle managers and professionalizing growth supporting functions is further indication for proactive change.

Case studies' proactiveness can be attributed to seven central factors. First, the composition of experienced founder teams facilitates the ability and willingness to modify existing and adopt new performance management practices. Second and related, at all case studies one of the founders is responsible for designing the performance management context. Third, founders and executives are aware of the interaction between times of consciously designing their performance management systems – which requires double loop learning – and times when their organizations are working in the context of designed systems – which relates to single loop learning. Fourth, founders use their social networks, professional advisors, specialized consultants and experienced venture capital investors to acquire the knowledge to manage necessary changes. Fifth, specialized middle managers are hired rather early or just in time. Sixth, and related, middle managers for growth supporting functions are among the first to be hired. Finally, the six factors above are aligned by the objective to grow the business and the organization.

Change in use. AlphaCo, BetaCo and DeltaCo use performance management practices interactively in the startup stage. In the growth stage case studies intend to increase diagnostic use in the growth stage. Interestingly, only scaling units use performance management practices clearly diagnostically. Overall, case studies aim at balanced use of performance measurement and feedback practices to support learning and growth. Use and design interact: The intended use of performance management is the essential antecedent of change in performance management system design.

4.1.12. Strength and coherence

Ferreira & Otley's (2009, p. 267) twelfth question is:

“How strong and coherent are the links between the components of performance management systems and the ways in which they are used (as denoted by the above 11 questions)?”

Ferreira & Otley's (2009, pp. 272-273) twelfth performance management system component includes theoretical elaborations on four themes: Chenhall's criteria for strength and coherence, the interdependencies of 18 key links, interdependencies of information flows, systems and networks with other performance management practices as well as the discussion on systems versus packages.

Chenhall's criteria

Definition. Ferreira & Otley (2009, p. 276) refer to Chenhall (2003), who “provides hints as to what to look for when examining the strength and coherence of the performance management system”. Chenhall (2003, p. 136) proposes the following six criteria: “consider multiple stakeholders; measure efficiency, effectiveness and equity; capture financial and non-financial outcomes; provide vertical links between strategy and operations and horizontal links across the value chain; provide information on how the organization relates to its external environment and its ability to adapt.”

Overview. AlphaCo, BetaCo and DeltaCo meet five out of Chenhall's six criteria for strength and coherence. Nevertheless, case studies can and must improve on these five categories. Case studies are particularly strong on considering multiple stakeholders as well as capturing financial and non-financial outcomes. Case studies focus particularly on improving vertical links between strategy and operations as well as horizontal links across the value chain. There appear to be no explicit and dedicated performance management practices for providing information about case studies' external environment. Table 116 in appendix B12 compares findings on Chenhall's criteria across the three case studies.

Multiple stakeholders. AlphaCo, BetaCo and DeltaCo are strong in considering multiple stakeholders when designing their performance management system. The following performance management practices are particularly strong for considering and aligning stakeholder expectations: vision and mission statements, organizational values systems, value propositions, founders' and middle managers' roles, strategic and financial business plans, participative strategic management processes, strategic performance measurement systems, participative target setting process, non-financial group rewards, and meeting schedules. It is characteristic for both startups and entrepreneurial growth companies to consider multiple stakeholders. This study's explanation is that in order to grow ventures need support from several stakeholder groups beyond effort that they can simply pay for.

Measuring. Case studies focus on measuring efficiency and effectiveness through the use of KPIs and strategic performance measurement systems. AlphaCo tends to account more for efficiency than effectiveness based on their organizational culture and business model. BetaCo prefers to measure effectiveness. DeltaCo finds a balance between efficiency and effectiveness measures. There appear to be no explicit performance measures for equity.

KPIs. Case studies are strong in using financial as well as non-financial key performance measures to capture outcomes from various organizational processes. Especially growth KPIs include financial as well as non-financial KPIs. This strength is enhanced further by the adoption of strategic performance measurement systems.

Vertical links. Case studies strengthen the vertical links between strategy and operations. The most relevant practices are the design of a participative strategic management processes, the use of strategic objectives and their distinction from strategy, the development strategic performance measurement systems as well as the design of the operational target setting process.

Horizontal links. Case studies are in the process of strengthening the horizontal links across the value chain. Links are still quite vertical with the founders being involved in many decisions as well as coordination and information sharing efforts. The establishment of a middle management in a functional organizational structure, the use of rules, the adoption of strategic performance measurement systems, the design of the target setting process, the design of meeting schedules as well as the use of information systems improve horizontal links.

External environment. Interestingly, case studies do not use performance management practices explicitly to provide information on their external business environment. The only exception, of course, are practices that facilitate the acquisition, distribution and interpretation of information about customers. Insights about the industry, competitors, trends and technical developments are gathered rather informally by frequent attendance of industry conferences. This finding might relate to case studies' life cycle stage. AlphaCo, BetaCo and DeltaCo have found value propositions that are attractive to paying customers. Case studies now concentrate their energy on delivering on these value propositions and developing additional ones. These efforts consume most of their resources and learning capacities.

Interdependencies of key links

Definitions. Ferreira & Otley (2009, pp. 275-276) propose: "The theoretical development provided in the eleven preceding questions of the performance management framework makes clear the key links between its components and, thus provides a good starting point for questioning, critical analysis and assessment of the balance, harmony, consistency and coherence of the links in the whole performance management package."

Ferreira & Otley (2009, pp. 267, 268, 269, 270, 271, 276) elaborate specifically on 18 key links, or interdependencies, respectively, between components of the performance management system (see table 29). Four of their twelve questions explicitly refer to interdependencies. Although there might be more interdependencies, this study focuses on the key links that Ferreira & Otley (2009) develop theoretically.

	1 V&M	2 KSF	3 OS	4 SP	5 KPM	6 TS	7 PE	8 RS
1 Vision & mission		p. 268		p. 270	p. 267		p. 267	
2 Key success factors	p. 268		p. 269	p. 276	p. 267			
3 Organization structure		p. 269		p. 267	p. 271	p. 269	p. 269	p. 269
4 Strategies & plans	p. 270	p. 276	p. 267		p. 276			
5 Key perf. measures	p. 267	p. 267	p. 271	p. 276		p. 267	p. 267	
6 Target setting			p. 269		p. 267		p. 271	p. 267
7 Performance evaluation	p. 267		p. 269		p. 267	p. 271		p. 271
8 Reward systems			p. 269			p. 267	p. 271	

Tab. 29: Key links between PMS components as per Ferreira & Otley (2009)

Grabner & Moers (2013, p. 412) also define two types of interdependencies – complements and substitutes: “Management control practices are complements when the benefits of one management control practice increase with the use of (some) other management control practice (and vice versa). Management control practices are substitutes when the benefits of one management control practice decrease with the use of (some) other management control practice (and vice versa).”

Overview. AlphaCo, BetaCo and DeltaCo recognize interdependencies between practices and design and use performance management practices accordingly. This study analyzes that, in fact, all performance management system components, which Ferreira & Otley (2009) predict to exhibit key links, should be considered complements. Practices develop into substitutes only if their designs are not aligned. Case studies avoid designing practices so that they become substitutes. This consistency in case studies’ performance management system is surprising. As elaborated below, this consistency might be attributed to case studies’ consistent intention to facilitate organizational learning processes in general and respective organizational learning modes specifically. Table 117 in appendix B12 compares findings on the interdependencies of key links across the three case studies.

Vision and mission and key success factors. AlphaCo, BetaCo and DeltaCo design vision and mission and key success factors so that they are complements. The financial key success factor of revenue growth, the product key success factor of improving today’s and developing tomorrow’s products as well as the organizational key success factor of organizational growth provide clarity of how to achieve case studies’ growth visions.

Vision and mission and strategies and plans. AlphaCo, BetaCo and DeltaCo design vision statements and growth strategies so that they are complements. Growth strategies and strategic objective, as outlined in strategic and financial business plans and formulated in strategic management processes, clearly indicate founders’ ambitions to grow and become relevant players in their respective industries. Value proposition statements, the structuring of strategic-recurring processes as well as case studies’ concepts of scaling units contribute to their growth visions as well.

Vision and mission and key performance measures. AlphaCo, BetaCo and DeltaCo design vision statements and key performance measures so that they are complements. Strategic KPIs outline growth visions and key success factors. Growth KPIs link growth strategies and operations. Non-financial KPIs outline visions specifically. Integrated strategic performance measurement systems further strengthen the interdependence between vision and key performance measures.

Vision and mission and performance evaluation. AlphaCo, BetaCo and DeltaCo design mission and vision and performance evaluation as complements. Mission, vision and values are designed so that they can be used as performance dimensions in formal and informal performance evaluations. The impact of mission, vision and organizational values systems increases strongly with them being used to evaluate the performance of organizational members, functions and the whole organization.

Key success factors and organization structure. AlphaCo, BetaCo and DeltaCo design organizational structure and key success factors to be complements to each other (also see analysis in chapter 4.1.3). The functional organizational design, founders' roles, middle managers' roles as well as the professionalization of growth supporting functions are directly linked to financial, product and organizational key success factors.

Key success factors and strategies and plans. AlphaCo, BetaCo and DeltaCo design key success factors and strategies so that they are complements. The three key success factors are further detailed in strategic objectives. AlphaCo's and DeltaCo's scaling units link directly to financial and organizational key success factors. Strategic-recurring processes typically work towards key success factors. These processes are categorized as strategic-recurring processes because they relate to key success factors.

Key success factors and key performance measures. AlphaCo, BetaCo and DeltaCo design key success factors and key performance measures so that they complement each other. Case studies use specific financial and non-financial KPIs to measure performance towards key success factors. As for growth visions, case studies strengthen interdependencies between key success factors and key performance measures by the adoption of strategic performance measurement systems.

Organization structure and strategies and plans. AlphaCo, BetaCo and DeltaCo design structures and strategies as complements to each other. Functional organizational designs with middle managers heading functions are established to drive growth strategies. The formulation of strategies requires a strategic management process to leverage middle managers' specific knowledge and information.

Organization structure and key performance measures. AlphaCo, BetaCo and DeltaCo design organization structures and key performance measures as complements. Business models

require to deliver on certain performance dimensions. This performance is measured by key performance indicators. Organizational designs determine what functions and roles are accountable for delivering performance. As the action project at BetaCo demonstrates, the analysis of a business model's key performance measures helps to understand organizational designs as well as roles and responsibilities.

Organization structure, target setting and performance evaluation. AlphaCo, BetaCo and DeltaCo design organization structure and target setting as well as performance evaluations as complements. Target setting and performance evaluation are combined in this paragraph, since the arguments are essentially the same ones. In the startup stage, the founder team is the most essential organization structure. Too formalized target setting and performance evaluation decreases the value of strong founders, who can manage by personality. In the startup stage, founder teams and overly formalized target setting and performance evaluation processes are substitutes. In the growth stage, however, the functional organizational design with a middle management as a second hierarchical level requires more formal target setting and performance evaluation processes for founders to remain in control and the organization to learn. The formalization and administration of target setting processes in turn requires to introduce growth supporting functions. In the growth stage, formalized target setting and performance evaluation processes are complements with founders' roles, middle management and growth supporting functions.

Organization structure and reward systems. The organization structure is complement to reward systems. First, AlphaCo's diagnostic centers and DeltaCo's international sales offices are decentral organizational units that use financial rewards to motivate employees. In contrast, organizational functions that are not scaling units are not motivated by financial rewards (bonuses). Second, as the role of middle managers in a functional organization structure is paramount, BetaCo and DeltaCo use stock option plans to attract, motivate and retain them. The use of stock option plans comes only with the middle management level.

Strategies and plans and key performance measures. AlphaCo, BetaCo and DeltaCo design strategies and plans and key performance measures so that they are complements. Case studies use several financial and non-financial KPIs to align strategies and operations. Strategic KPIs and growth KPIs are designed to control and learn about strategic-recurring processes. Strategic objectives are made measurable using KPIs. In fact, strategic objectives typically refer to at least one financial or non-financial KPI. Strategic business plans and financial business plans summarize the development of the most relevant financial and non-financial KPIs. Strategic management processes and strategic performance measurement systems, which are used, reviewed and adapted during strategic management processes, further enhance interdependencies between strategies and plans and key performance measures.

Key performance measures and target setting. AlphaCo, BetaCo and DeltaCo design key performance measures and target setting as complements. On the one hand, case studies set target performance levels for financial and non-financial KPIs. On the other hand, the development of KPIs can indicate the need for setting operational targets to influence KPIs. The adoption of strategic performance measurement systems and target setting systems, such as OKRs, mutually reinforce each other: OKRs are set to drive KPIs, KPIs indicate a necessity to set OKRs.

Key performance measures and performance evaluation. AlphaCo, BetaCo and DeltaCo design key performance measures and performance evaluation so that they are complements. Key performance measures play a significant role in evaluating performance. Revenue and other financial and non-financial KPIs are relevant performance dimensions to evaluate the performance of functions and their middle managers. On the company level, financial KPIs from the financial business plan used in performance evaluation. Key performance measures as clearly defined performance dimensions allow to design performance evaluations either subjectively or objectively – depending on purposes of evaluations. Key performance measures used purely interactively or interactively and diagnostically imply subjective performance evaluations. Key performance measures used diagnostically imply objective performance evaluations. The interdependence between key performance measures and performance evaluation on the functional and company levels are increased by the adoption of strategic management processes and strategic performance measurement systems.

Target setting and performance evaluation. AlphaCo, BetaCo and DeltaCo design target setting and performance evaluation as complements. Especially on employee and functional levels, targets play a significant role as pre-defined standards for desired performance. On the company level, strategic objectives are used to evaluate performance. Operational target setting processes are re-designed to accommodate performance evaluations as a dedicated process step.

Target setting and reward systems. AlphaCo, BetaCo and DeltaCo design target setting and reward systems so that they are complements. This interdependence is indirect and is effective through performance evaluations. Targets and their performance levels are the basis for performance evaluations; performance evaluations lead to the allocation of rewards and penalties. For the larger part there is no direct link between targets and incentives, especially at BetaCo and DeltaCo, which adopt the OKR goal setting approach. Scaling units are the only exception: here, targets are the performance standards for objective, formulaic performance evaluations, which result in the allocation of financial rewards. In this case performance evaluation is avoided and the link between targets and rewards is direct and formulaic.

Performance evaluation and reward systems. AlphaCo, BetaCo and DeltaCo design performance evaluation and reward systems so that they are complements. The allocation of

rewards is typically the outcome of performance evaluations. Subjective performance evaluation can link or not link to rewards and penalties. Objective performance evaluations link to financial rewards using a formula.

Concluding remarks. As per the analyses above, AlphaCo, BetaCo and DeltaCo design and use their performance management system and individual practices so that they are complements. The interdependencies identified are not ‘perfect’. The benefits of some performance management practices could be increased even more with other practices being designed somewhat differently. Some interdependencies are stronger, more relevant and occur more frequently than others. These can be considered as ‘clusters’ of multi-directional interdependent performance management practices, as discussed in chapter 5.8. Substitutes are not found. All 18 key links are relevant and all practices are complements.

Interdependencies of information flows, systems and networks

Definition. Ferreira & Otley’s (2009, p. 267) ninth question asks: “What specific information flows – feedback and feedforward –, systems and networks has the organization in place to support the operation of its performance management system?” Ferreira & Otley (2009, p. 273, italics added) define: “Information flows, systems and networks are essential enabling mechanisms to *any* performance management system; they are the binding agent that keeps the whole system together.” From these statements it can be concluded that Ferreira & Otley (2009) assume information flows, systems and networks have interdependencies with all other performance management system components.

Overview. AlphaCo, BetaCo and DeltaCo use information flows, systems and networks to support their performance management systems. Information systems and information networks thus have interdependencies with all other performance management practices and are designed so that they are complements to performance management practices. Information systems collect, distribute and store performance information, which are being used by practices. Information networks – especially multi-purpose meetings – work with performance information. Information systems and information networks need to be developed along the re-design and adoption of performance management practices.

Information systems. AlphaCo, BetaCo and DeltaCo make strong use of information systems, despite their young age (see chapter 4.1.9). Case studies’ performance management systems would not work without information systems. A variety of information systems interacts – some more and some less – with performance management practices. Table 118 in appendix B12 illustrates how closely information systems and practices are entangled.

Information system that decreases the value of performance management practices cannot be identified. Most information systems are recently adopted and designed so that they are

complements to performance management practices. Case studies need to take care that information systems do not conflict with use of performance management practices.

Information networks. AlphaCo, BetaCo and DeltaCo establish information networks and most notably formal meeting schedules (see chapter 4.1.9). Case studies use meetings intensely to create vertical and horizontal information flows. Meetings are designed as complements to performance management practices. Table 119 in appendix B12 outlines those meetings that are most directly related to performance management practices.

Several meetings, such as AlphaCo's "Management Team Meeting", BetaCo's "Weekly Management Update" meeting and DeltaCo's "Management Call Operations", are 'multi-purpose' meetings. However, increasingly target setting and performance evaluation require dedicated meetings. Meeting schedules are adjusted. Dedicated and regular meetings for performance management practices are an insightful indication of the degree of formalization of performance management practices.

System versus package

Definition. Ferreira & Otley (2009, p. 276) write: "It should be noted that it is not assumed that an extant performance management system will be coherent. Otley (1980) discussed control 'packages' rather than control 'systems' because he had found that they tended to be composed of sets of loosely coupled elements." As elaborated in detail in chapter 2.2.7, Ferreira & Otley (2009) ask the question of whether an organization's performance management practices can be considered a package of performance management practices or a coherent performance management system.

Grabner & Moers (2013, p. 408) define: "Management control practices form a system if the management control practices are interdependent and the design choices take these interdependencies into account. In contrast, management control as a package represents the complete set of control practices in place, regardless of whether the management control practices are interdependent and/or the design choices take interdependencies into account."

Overview. AlphaCo, BetaCo and DeltaCo's performance management practices design systems rather than packages. Case studies' design choices take interdependencies into account and design performance management system components as complements to each other. Case studies' systems are not perfect, of course, and they are constantly evolving. As a rough approximation entrepreneurial growth companies re-consider their performance management approach every six months. All three case studies put significant effort into maintaining their performance management approaches as systems of interdependently designed practices. This conclusion is supported by the analyses to Ferreira & Otley's (2009) question 12 as well as by the analyses of interdependencies.

Previous analyses to question 12. The three previous analyses to Ferreira & Otley's (2009, p. 267) question 12 support this conclusion. Case studies meet five of Chenhall's (2003, p. 136) six criteria of strength and coherence. Case studies design Ferreira & Otley's (2009) theoretical 18 key links as complements to each other and not as substitutes. Information flows, systems and networks support the operation of case studies' performance management systems, they are not designed as substitutes, and can be thus considered complements as well.

Analyses in previous chapters. This study also identifies complement interdependencies in other chapters that indicate systems rather than packages at AlphaCo, BetaCo and DeltaCo. These links are illustrated in chapters above. Figure 19 in chapter 4.1.3 illustrates the relationship between key success factors, organizational design and founders' roles. Figure 21 in chapter 4.1.3 shows the interactions of organization structure with other performance management system components. Figure 26 in chapter 4.1.4 illustrates the relationships between organizational objectives, strategy and performance management. Figure 27 in chapter 4.1.4 outlines the hierarchy of organizational objectives and their relationship to the value proposition statement. Figure 29 in chapter 4.1.4 links the scaling unit concept to performance management practices. Figure 30 in chapter 4.1.5 links the use of key performance measures to vision, key success factors, strategy and operations. Figure 31 in chapter 4.1.5 analyses the roles of KPIs in performance evaluation. Figure 32 in chapter 4.1.5 links strategy, business model logic, strategic performance measurement system and organizational design; these interdependencies are illustrated with examples from BetaCo and DeltaCo. Figure 39 in chapter 4.1.7 illustrates interdependencies of performance evaluation with performance management practices that are used as performance dimensions in the evaluation process. Figure 40 in chapter 4.1.8 shows the relationship between incentives design and associated use of performance evaluation.

Four reasons for system approach. There is sufficient empirical evidence for the conclusion that AlphaCo, BetaCo and DeltaCo design and use performance management systems, and not packages. This is despite Ferreira & Otley's (2009, p. 276) expectations. However, Ferreira & Otley (2009) typically investigate mature, larger organizations. In the context of entrepreneurial growth companies, this study proposes four essential factors that might explain these findings.

Experienced founder teams. AlphaCo, BetaCo and DeltaCo are founded by experienced founder teams. Founders can freely decide about the adoption and design of their performance management systems and thus address their most relevant control problems (cf. Grabner & Moers, 2013, pp. 414, 415). At least one founder or C-level executive is responsible for the performance management context; middle managers for growth supporting functions support them early on. Previous research has shown that inconsistencies can result in inferior performance (Bedford, Malmi & Sandelin, 2016; Chenhall & Langfield-Smith, 1998; Drazin & Van de Ven, 1985; Gong & Ferreira, 2014; Khandwalla 1973; Otley, 2016; Sandelin, 2008).

Experienced founders might be aware of the relevance of performance management to growth. They thus seek to develop a system. Put differently, they avoid designing performance management practices that are substitutes to other practices. This is possible, as organizations are still not large, and systems are still conceivable.

Scaling units. The designs of performance management practices for AlphaCo's diagnostic centers and DeltaCo's international sales offices are different compared to other functions (see chapter 4.1.4). Performance management practices are used to focus attention and search; performance measurement and feedback systems are used diagnostically. The differences that AlphaCo and DeltaCo make between organizational functions, i.e. scaling units versus headquarters functions, also contribute to clarity in how to design respective practices so that they complement each other.

Sequential adoption and simultaneous evolution. Sequential adoption and simultaneous evolution might increase the likelihood that performance management systems are consistent and performance management practices are complements to each other (see discussion in chapter 5.9). Sequential adoption means that case studies adopt some performance management practices earlier than others (Dávila & Foster, 2005, 2007). In simplified terms, case studies formalize performance management practices from top to bottom in Ferreira & Otley's (2009) performance management systems framework. For instance, case studies formalize their value propositions before they formalize their mission statements, or they formalize their strategic objectives before they formalize their operational target setting. Simultaneous evolution means that (interdependent) performance management practices are adopted, designed or re-designed at roughly the same time. When one practice is re-designed and/or a new practice is adopted, other practices are re-designed as well. For instance, strategic performance measurement systems and operational target setting processes or strategic management process and middle management appear to evolve simultaneously.

Learning cultures. When designing and using their performance management systems case studies are guided by their organizational culture (see discussion in chapters 5.5 and 5.6). Organizational cultures are case studies' 'true north' when designing performance management practices. As analyzed in chapter 4.1.11 on performance management system change, the performance management system components of vision and mission (question 1) is particularly stable since case studies' startup stages. In contrast, the other components are constantly being re-designed or new practices are adopted. Founders design their performance management systems so that they are in line with organizational cultures, which are oriented towards organizational learning. Organizational learning appears to be a principle for designing performance management approaches.

4.2. Performance management and organizational learning

4.2.1. Vision and mission

Vision statement

“Our vision is to grow the company; focus is on growth.”
(DeltaCo’s COO about founders’ shared objective to become the market leader)

“The development of a shared vision [is] necessary for the learning organization.”
(Kloot, 1997, p. 70)

Design and use. AlphaCo, BetaCo and DeltaCo’s vision statements outline founders’ and stakeholders ambitions to grow. Case studies want to become a significant company in respective industries and potentially market leaders. Case studies’ vision statements are short, catchy, appealing and hence designed to be used frequently. Case studies use their vision statements to expand opportunity seeking and to focus search. Visions motivate organizational participants to learn about how visions can be achieved and how they can contribute to this shared objective.

Organizational learning processes. AlphaCo, BetaCo and DeltaCo design their vision statements so that organizational learning processes are facilitated. Visions help to decide what information and knowledge is relevant to be acquired through intentional search as well as non-intentional noticing. Visions are also a source of unintentional, unsystematic learning. Visions facilitate the distribution of information, as they foster team spirit, and visions provide decision criteria of what information is to be shared. Vision statements support organizational members in interpreting information: Vision statements frame information, create meaning of information, translate information into shared concepts, and build cognitive maps about the organization and its environment. Finally, a clear, compelling vision statement helps to distinct what knowledge and information is relevant to be stored.

Organizational learning modes. AlphaCo, BetaCo and DeltaCo design and use their vision statements to facilitate single loop and double loop learning. Vision statements ‘legitimize’ towards and demand from organizational members to start at lower stages of knowledge in certain aspects of case studies businesses, although the growing venture has already progressed through several stages of knowledge in other aspects. On the one hand, vision statements provide direction and focus on the execution of value propositions and customer groups that case studies already know; thus, visions facilitate single loop learning. On the other hand, vision statements are sufficiently broad so that they inspire new value propositions and help identify new customer groups; thus, vision statements facilitate double loop learning. It is visions’ support of both single loop and double loop learning that makes vision statements such a popular performance management practices among entrepreneurial growth companies.

Mission statement

“Vision and mission are not separated so far and not clearly defined, which we really need to do to learn about the general direction.”

(DeltaCo’s CEO about the need to define their mission to support learning)

“The primary purpose of a beliefs system is to inspire and guide organizational search and discovery”.

(Simons, 1995, p. 36)

Design and use. AlphaCo, BetaCo and DeltaCo have formalized mission statements, but do not emphasize them too much. The potential negative effects of using not fully established mission statement is currently covered by the intense use of vision statements and value propositions. At the same time founders realize mission statements’ benefits for organizational learning in the future and particularly for expanding opportunity seeking and learning.

Organizational learning processes. AlphaCo, BetaCo and DeltaCo emphasize that they are to improve their mission statements and intend to use them more often. Similar to missions, visions are often a source of unintentional, unsystematic learning. Potential benefits of formalized mission statements to organizational learning are similar to those of vision statements. The mission supports the acquisition of the relevant knowledge, facilitates information distribution, provides shared cognitive maps for information interpretation and determines relevant information to be stored. An additional factor is the motivation to learn: serving a higher purpose and contributing to society induces intrinsic motivation to learn about how to progress towards the mission.

Organizational learning modes. Case studies use mission statements to outline a higher purpose that is shared by all stakeholders. Yet use of mission statements is not as strong compared to vision and value propositions. In their current designs, case studies use mission statements to intrinsically motivate organizational participants to explore new business opportunities.

Organizational values system

“Startup spirit is much about learning fast.”

(The COO explains BetaCo’s learning culture)

“The learning culture must have in its DNA a ‘learning gene’, in the sense that members must hold the shared assumption that learning is a good thing worth investing in and that learning to learn is itself a skill to be mastered.”

(Schein, 2008, p. 395)

Design and use. AlphaCo, BetaCo and DeltaCo’s founders formalize their personal and entrepreneurial values in organizational values systems. There are four types of organizational values. Values systems are a central and intensely used performance management practice. Values are used as performance dimensions and decision criteria. Values systems support both opportunity seeking and focusing attention.

Organizational learning processes. The first organizational values category outlines expected performance. Values such as “we focus on the customer” (BetaCo) or “add value to the

ecosystem, our partners and our company” (DeltaCo) inform case studies’ organizational members about what information and knowledge might be useful to acquire, how to interpret information and what information and knowledge is worth to be memorized. The second and third categories supports learning through team interaction and information sharing, respectively. Values such as “questioning the status quo” (AlphaCo) or “we make decisions based on facts and data” (BetaCo) explicitly demand information distribution as well as learning through interactions and personal relationships. The fourth category supports learning through employees’ individual mindset that they bring to work. Values such as “passion for achievement” and “curiosity” (DeltaCo) require the acquisition of knowledge, open information sharing, and putting effort into information interpretation as well as organizational memory.

Organizational values reassure that the organization appreciates when specific knowledge and information is acquired and shared, which contribute to progressing towards organizational objectives. Values systems also create a context in which more varied interpretations of information are welcomed to be developed, shared, discussed, evaluated and then integrated into shared interpretations. Values systems are structured in a way to support Argyris & Schön’s (1978, p. 29) “deutero-learning” and Schein’s (2008, p. 395) “learning gene”.

Organizational learning modes. Cultures and especially values systems have to accommodate different stages of knowledge that case studies have to deal with. For this reason, case studies design and use their organizational values system to balance single loop and double loop learning. An alternative design of values systems that emphasized either learning mode to the expense of the other might create an imbalance harming learning and growth.

Values that outline desired performance facilitate single loop learning, e.g. AlphaCo’s “peak performance”. Values that relate to team interaction and information sharing relate to double loop learning, e.g. BetaCo’s “we burn for team success”. Values that demand a particular individual work mindset facilitate both single loop learning, e.g. DeltaCo’s “passion for achievement”, and double loop learning, e.g. DeltaCo’s “curiosity”. Organizational values systems appear to be a practice to design what Gibson & Birkinshaw (2004) have termed “contextual organizational ambidexterity” in order to support growth.

Cultural education process and visibility of culture

“Values are one of the most important things – we should measure performance based on this. But then we should hire people that live up to those values - so that it is easier to have people perform on those. We incorporate our values into our interview process.”

(DeltaCo’s “Recruitment Standards” explains the use of learning-oriented cultural values)

“In a growing organization, leaders externalize their own assumptions and embed them gradually and consistently in the mission, goals, structures, and working procedures of the group”.

(Schein, 2008, p. 406)

Design and use. AlphaCo, BetaCo and DeltaCo use a lot of resources – time, money, founders’ attention and presence – to convey organizational culture and socialize new employees. Case

studies use their cultural education processes to educate employees about organizational culture and performance management context over the whole employee cycle. Cultural education processes are supported by practices to make culture visible and tangible.

Organizational learning processes. AlphaCo, BetaCo and DeltaCo design their cultural education processes so that – especially new – employees acquire knowledge about organizations’ cultures and performance management contexts. Cultural education processes are also used for (new) employees to ‘unlearn’ behavior, attitudes, cognitive maps and performance standards, which they might have learnt at previous organizations.

Case studies use a remarkable richness of media in their cultural education processes: presentations, reports, stories, handbooks, social events, formal and informal communication, founders’ and middle managers’ presence and behavior, and even the design of their offices. Media richness contributes to organizational learning, provided that messages are consistent. The consistency of messages is ensured by well-designed performance management practices. During cultural education processes employees learn how to distribute and interpret information with reference to performance dimensions. Furthermore, cultural education processes allow to store the most essential information in recruiting standards, onboarding documents, entrepreneurial stories, and employee handbooks.

Case studies support their information-based cultural education processes by using physical representations of their cultures. Non-information-based, physical performance management practices constantly remind employees about important aspects of organizational cultures. The most relevant practices are social events and office designs.

Organizational learning modes. AlphaCo, BetaCo and DeltaCo use their cultural education processes to convey key aspects of their performance management systems. In turn these practices facilitate and balance organizational learning modes. In this sense, cultural education processes indirectly effect single loop and double loop learning.

Value propositions and organizational culture

“We try growth through experimentation.”

(DeltaCo’s COO explains the need to constantly watch out for new growth options)

“We argue that firms begin with a business model and then – in response to certain triggers (typically external) – plan, design, test and re-test alternative business model variants until they find the one that best suits their objectives.”

(Sosna, Treviño-Rodríguez & Velamuri, 2010, p. 384)

Design and use. AlphaCo, BetaCo and DeltaCo work intensely with value propositions as a performance management practice. Case studies include their customers and what customers value into their organizational cultures. Case studies do so in order to ensure organizational learning about value propositions and customers. Known value propositions are used to focus attention; the notion of unknown value propositions is used to expand opportunity seeking.

Organizational learning processes. Value propositions are a focal point of knowledge acquisition, information distribution and interpretation as well as organizational memory. Value propositions facilitate knowledge acquisition through environmental scanning, focused search and noticing. Knowledge and information are to be acquired and interpreted in order to improve known value propositions or develop new ones. Information that improves value propositions or potentially leads to the development of new ones needs to be shared as well as stored. In other words, similar to vision and mission, value propositions indicate the relevance of knowledge and information.

Organizational learning modes. AlphaCo, BetaCo and DeltaCo focus their attention on the delivery of known value propositions to known customer groups. Case studies have advanced to knowledge stage four or more so that revenue is generated from known value propositions. Thus, the use of known value propositions as a performance management practice initiates single loop learning. At the same time, case studies need to expand opportunity seeking in order to identify new value propositions and potentially new customer groups. New value propositions start with the first one or two stages of knowledge. Much is to be learnt about customers and what they need. Thus, the quest for new value propositions induces double loop learning. Case studies have to constantly manage this tension between known and new value propositions. They constantly need to align different stages of knowledge – advanced stages and early stages – in their organizations. Case studies mitigate this tension between known and new value propositions by including customers and value propositions in their cultures.

4.2.2. Key success factors

“The CEO is repeating the key success factors very often in informal ways.”
(Employee at AlphaCo’s Personnel & Academy explains how founders communicate priorities to employees)

“Key success factors are a codification of the vision and mission in more concrete terms and in a more compressed timeframe, recognizing that control measures need to be reported on a routine basis.”
(Ferreira & Otley, 2009, p. 269)

Design and use. AlphaCo, BetaCo and DeltaCo are consistent in three key success factors: the financial, the organizational and the product key success factor. Founders communicate key success factors frequently in formal and informal ways. Case studies use key success factors to focus attention and expand opportunity seeking.

Organizational learning processes. AlphaCo, BetaCo and DeltaCo use their key success factors to ‘segment’ organizational learning about how to achieve their visions: revenue growth, organizational growth and product development. This segmentation of organizational learning efforts finds its parallels in organizational designs and founders’ roles.

Similar to vision and mission, key success factors are high-level organizational objectives. For this reason, key success factors’ effects on organizational learning processes are similar. The difference is that key success factors operationalize the vision statement in more detail. Key

success factors narrow and specify required organizational learning processes. Key success factors are cognitive maps and decision criteria about what knowledge is useful and needs to be acquired, what information should be shared, how information should be interpreted, and what knowledge and information is to be stored.

Organizational learning modes. AlphaCo, BetaCo and DeltaCo are consistent in three key success factors. This consistency is a sign of case studies' deeper challenges and efforts of balancing organizational learning modes to achieve their visions. Key success factors do not exclusively relate to only one of the organizational learning modes, yet they show tendencies.

For known value propositions, case studies have already progressed in their stages of knowledge. Case studies are in a position of harvesting their knowledge. The financial key success factor, therefore, facilitates exploitation of known value propositions with known customer groups.

For existing products case studies have progressed through several stages of knowledge. Existing products with known value propositions, therefore, require exploitation. However, in order to grow further, case studies also need to improve products and develop new ones. Here, organizations are in the early stages of knowledge and exploration is required. The product key success factor, therefore, needs to balance exploitation of known value propositions with the exploration of new ones.

The organizational key success factor requires to balance exploration and exploitation. The organization needs to balance different stages of knowledge. Organizational growth makes possible to separate exploration and exploitation structurally. Organizational professionalization – introducing organizational functions, establishing middle management and enfolded the performance management systems – makes possible to balance exploration and exploitation.

4.2.3. Organization structure

Organizational design

“We try to maintain a really flat hierarchy. The organization is similar to our value chain, teams are structured along value chain and support functions.”

(DeltaCo's Senior Corporate Developer about the advantages of a flat, horizontally-oriented organization)

“Viewing the role of firms as coordinated learning institutions leads to a consideration of the role of organizational structure and strategy. Complex organizations are characterized by a multiplicity of learning processes: each individual and each group within the organization have their own knowledge base and their own learning capabilities. The structure of the organization defines the way in which these processes interact, and gives rise to the organizational learning process resulting from these interactions.”

(Dodgson, 1993, p. 388)

Design and use. AlphaCo, BetaCo and DeltaCo choose a functional organizational design with a three-layer hierarchy, i.e. founders, middle managers and employees. AlphaCo and DeltaCo use decentral organizational units that are working directly with customers and that this study

terms scaling units. Decision-making authority lies centralized with founders, but is increasingly decentralized as middle managers are hired. Organizational functions are used to both focus attention and expand opportunity seeking.

Organizational learning processes. Organizational functions determine who acquires and shares knowledge and information, and for what purpose. At all case studies founders' level of hierarchy reflects the three key success factors, i.e. marketing and sales, operations and support functions as well as product development and technology. This design ensures that dedicated parts of the organization acquire, share and interpret information relevant to achieve key success factors. Functions and their middle managers specialize further in knowledge acquisition, information distribution and interpretation related to their roles and organizational objectives, most notably strategic objectives and value propositions. Furthermore, functions determine how information is shared vertically and horizontally across the organization. To facilitate information flows case studies maintain a flat hierarchy, which also corresponds to their values systems, and organize functions in line with their value chains. Functions also define who is responsible for storing and retrieving knowledge and information. Support functions take over a significant part of organizational memory.

Organizational learning modes. The organizational design evolves in dependence of the stages of knowledge. In their startup stages, case studies were in early stages of knowledge. Learning took place rather unstructured and mostly through the founders and a few key employees. Learning is predominantly exploratory. In their growth stages, case studies' functional organizational designs have to be able to accommodate different stages of knowledge and hence different organizational learning modes. Some parts of case studies' organizations are more focused on single loop learning, while others specialize in double loop learning. Case studies focus attention and search particularly in their scaling units. The goal is that scaling units are able to quickly focus on single loop learning. In contrast, headquarters functions appear to be more focused on double loop learning.

Founders' roles

“In the end of the day, it all comes down to us as the founders. We take the shots; we bear the risks. If we lose drive, the company drains of energy.”

(BetaCo's CEO explains the central role of founders for growing a venture)

“We could establish that growth-oriented entrepreneurs show an ability to pursue both exploration and exploitation, although the vast majority of activities are related to exploitation.”

(Volery, Mueller & von Siemens 2015, p. 126)

Design and use. AlphaCo, BetaCo and DeltaCo are built and managed by experienced founders and executives. Consistently across case studies, founders' roles reflect key success factors: sales founder, operations founder and product founder. Founders have to master switching quickly between activities related to expanding opportunity seeking and focusing attention.

Organizational learning processes. Founders are a source of pre-existing knowledge; this is why founder teams are typically composed with different competences and personalities. Founders themselves acquire, distribute, interpret and store information and knowledge about all important aspects of their business. Founders motivate members of their organizations to acquire, share, interpret and store information and knowledge. And founders often decide about what knowledge needs to be acquired, what information needs to be distributed, how information is to be interpreted and what knowledge and information is to be stored and how.

Organizational learning modes. AlphaCo, BetaCo and DeltaCo's founders are individuals capable of pursuing both exploration and exploitation. Founders are able to quickly switch between the two organizational learning modes. The design and use of founders' roles, which relate to the three key success factors, helps to mitigate the tensions that their organizations need to manage in order to grow. Founders' roles typically emphasize one organizational learning mode above the other. The sales founder is to generate revenue and is hence more engaged in exploitation. The product founder is to create new products and is hence rather responsible for exploration. Interestingly, the operations founder role is quite divided between exploration and exploitation.

Middle managers' roles

"We are building the middle management with new knowledge from the outside so that founders and current employees can learn themselves. During that process we have to ensure to keep the startup spirit to avoid culture failure and continue learning. Startup spirit is much about learning fast. Our startup spirit can be maintained by recruiting middle managers that fit, by keeping the pressure and speed high, by growth itself, by being close to the teams and by cool team events."

(BetaCo's COO explains the relationship between middle management and learning culture)

"The information-processing stream [...] emphasizes that all individuals inherently have a limited capacity to acquire, store, process, and transmit information. Hence, for an owner-managed two-layer firm the addition of a middle-management level leads to an improvement of information processing capabilities, [...]."

(Colombo & Grilli, 2013, p. 393)

Design and use. AlphaCo, BetaCo and DeltaCo engage intensely in finding capable middle managers for organizational functions. Middle managers report into founders and lead employees; they built the second level of the hierarchy. Middle managers are typically recruited from outside the company to bring in new knowledge and perspectives. Early hires are for growth supporting functions. Middle managers' roles are paramount for both expanding opportunity seeking and focusing attention.

Organizational learning processes. As their organizations grow, case studies' founders' abilities to acquire knowledge, process information and learn reaches limits. Hiring capable middle managers are a particular fast measure of acquiring new pre-existing knowledge and increasing information processing capacities. In addition, middle managers have the resources to specialize in acquiring knowledge as well as distributing, interpreting and storing information related to their organizational functions and roles.

Middle managers distribute information vertically from founders to employees and from employees to founders. Middle managers enhance organizations' capabilities to acquire, share, process and interpret information by functioning as an 'informational linch-pin'. Middle managers help to mitigate information overload of founders, who can thereby allocate their attention and learning capabilities on higher-value added activities. Middle managers also ensure supply of information to employees. Employees learn by receiving feedback on goals and actions. This role as an informational linch-pin is enhanced through middle managers' participation in strategic management processes.

As cross-team meetings and time-bound cross-functional project teams demonstrate, middle managers also create horizontal information flows along case studies' value chains. These horizontal information flows decrease the need for vertical information flows even more and improve the informative content of information to the founders. Related to information distribution, middle managers support founders and employees in interpreting information due to their functional specialization and professional knowledge.

Middle managers, especially middle managers for growth supporting functions, are also responsible for maintaining information systems that store and structure knowledge and information. This might explain why case studies hire middle managers for growth supporting functions early on.

Organizational learning modes. Middle managers have a challenging profile. Similar to founders, middle managers should be able to pursue exploration and exploitation at the same time. One of the most important factors for hiring a middle manager is that she/he is able to live up to organizational values – which demand contextual organizational ambidexterity from employees. It should be noted, however, that most of middle managers' time is concentrated on exploitative activities.

Rules, procedures and policies

“In growth phases, management needs clear and easy rule set to act and move very quickly.”
(The VP Finance outlines why DeltaCo introduces a lean spending and transaction policy)

“Although studies identify elaborated and codified tools such as checklists, integration manuals and training books as the articulated learning in stable environments and large firms, we focus on dynamic markets and entrepreneurial firms where studies highlight that articulated learning takes the form of simple heuristics.”
(Bingham, Eisenhardt & Furr, 2007, p. 31)

Design and use. AlphaCo, BetaCo and DeltaCo use a particular design of rules, procedures and policies that facilitates organizational learning. Rules, procedures and policies are designed simple, short, specific, empower fast decentral decisions, and allow founders to keep control. This design also ensures that rules, procedures and policies can be revised and potentially adapted. This way rules, procedures and policies focus attention, which is their typical purpose, and can be a source of opportunity seeking.

Organizational learning processes. Rules, procedures and policies are used to reduce the need for knowledge acquisition, information distribution, and information interpretation. By reducing information flows, rules allow to focus information flows on the most important matters. Rules reduce complexity and mitigate limited information processing capabilities. Even more, by standardizing certain information flows, rules preserve management attention. Organizational learning is articulated in rules, procedures and policies. Rules, procedures and policies store and regularly activate organizational knowledge; in this sense they are a significant source of organizational memory.

Organizational learning modes. Purposeful rules, procedures and policies require advanced stages of knowledge. Attributes should be measurable, and processes should be repeatable. Hence, rules, procedures and policies are typically designed for single loop learning. At the same time rules, procedures and policies are the basis for the possibility of double loop learning. Rules can be understood as operating hypotheses. Only when rules exist, they can be tested. As long as they hold, they facilitate single loop learning; yet only because they can be tested, they can also be adapted and improved, thus facilitating double loop learning. Rules are both a method for and an indication of advancing through stages of knowledge. The design of rules, procedures and policies, however, must accommodate for testing as well as adapting. This is why case studies design simple, short, specific rules, procedures and policies.

In this context, vision, mission, value propositions and organizational values system play critical roles, as they provide evaluation criteria for learning. Rules that contribute to vision, mission and especially value propositions are maintained. Rules that hinder progress need to be altered. The organizational values system outlines the attitude towards rules, procedures and policies. Case studies' values systems allow and even demand organizational members to question rules, procedures and policies. Case studies organizational values systems are designed to achieve this balance between using rules, procedures and policies and improving them.

Human resources function

“The strategic focus of the Personnel & Academy team is on building up a ‘learning agility’.”
(AlphaCo’s Head of Personnel & Academy emphasizes her functions’ focus on organizational learning)

“Managers can control outputs through the careful selection of inputs.”
(Simons, 1995, p. 62)

Design and use. AlphaCo, BetaCo and DeltaCo introduce the human resources function early on. Human resources functions facilitate organizational learning by selecting knowledgeable employees that fit to case studies’ learning cultures, culturally socialize employees for exploration and exploitation, and train and develop employees’ knowledge and skills.

Organizational learning processes. Case studies’ human resources functions select employees with specific professional knowledge, thus broadening as well as deepening case studies’

organizational knowledge bases. New employees are regularly lured away from competitors or similar businesses, so that case studies can learn from other organizations.

Trainings and employee development are programs specifically designed to further improve employees' knowledge. Also, trainings and workshops, for instance for leadership skills or specialist subjects, facilitate information sharing and information interpretation, especially as case studies often use internal experts for such trainings. Training and development as well as career paths are used as non-financial rewards for learning. Such rewarding is also used to retain employees and their know-how, thus contributing to organizational memory.

Human resources functions are also responsible for administrating an extreme form of organizational unlearning: the layoff of employees. Such layoffs take place, if employees and especially managers do not comply with performance management practices such as vision, organizational values, rules and policies.

Organizational learning modes. AlphaCo, BetaCo and DeltaCo's human resources functions also contribute to balancing organizational learning modes. New organizational members are selected, socialized and further culturally educated based on organizational cultures. As analyzed above, organizational cultures and particularly values systems demand both exploration and exploitation.

Finance and business intelligence functions

"We will transit to a fully data-driven company. We will profit from decisions grounded in data by building up a solid reporting infrastructure."

(BetaCo's CEO highlights the value of data for learning and growth during their "First Monday Meeting")

"Staff groups play an important role in maximizing [return on management] by complementing the amount of attention, or, more important, inattention, that managers devote to each system: staff groups act as media consultants and messengers for beliefs systems; as facilitators for interactive control systems; as technical experts, gatekeepers, and emissaries for diagnostic control systems; and as policemen for boundary systems."

(Simons, 1995, p. 158)

Design and use. AlphaCo, BetaCo and DeltaCo establish finance functions early on; business intelligence functions are introduced later. Both functions facilitate organizational learning by providing timely, reliable, relevant financial and non-financial information. These functions also support founders in the design of performance management systems.

Organizational learning processes. AlphaCo, BetaCo and DeltaCo's finance and business intelligence functions support in acquiring knowledge, distributing and interpreting information as well as organizational memory. Finance and business intelligence ensure regular and timely flows of performance information to managers and employees. Reports urge organizational members to acquire knowledge and information in order to understand and explain successes and failures. Finance and business intelligence functions support in the creation of mental models that foster common interpretations by developing and administrating frameworks such as strategic performance measurement systems. Finance and business intelligence also

introduce and administrate formal reports and information systems. These reports and information systems record events and information and are thus a significant part of organizational memory.

Organizational learning modes. AlphaCo, BetaCo and DeltaCo's finance and business intelligence functions supply performance information, which is the basis for both single loop and double loop learning. Performance information provides feedback about behavior, activities, processes and methods as well as about organizational objectives themselves. Financial information is often seen as lagging information, while non-financial information is considered as leading information; both types of information should be balanced to enable execution and innovation (cf. Kaplan & Norton, 1996, pp. 34, 150). It is, therefore, an interesting finding that AlphaCo, BetaCo and DeltaCo establish two information supplying functions specializing in providing either type of information.

Operations founder and organizational learning. Case studies' operations founders play a particular role in facilitating organizational learning. At AlphaCo (CEO) and DeltaCo (COO), operations founders are responsible for all classical support functions. Operations founders integrate the human resources function, which is responsible for organizational culture and people management, with the finance and business intelligence functions, which support founders in matters of strategy, performance measurement, target setting, performance evaluations and reward systems.

Business specific growth supporting functions

"My department is responsible for knowledge management. Furthermore, we ensure the quality in our processes. We are a process-focused company, our business is about better processes. It is all about making knowledge explicit and accessible."

(AlphaCo's Head of Knowledge & Quality explains her team's central role in organizational learning)

"Consider Netigy, a San-Jose-based e-commerce service provider. Netigy has only 650 employees, but it already has invested in a chief knowledge officer and a knowledge-management system for 20,000 people. Netigy is prepared to handle its vision for growth."

(Von Krogh & Cusumano, 2001, pp. 53-54)

Design and use. Next to classical support functions, AlphaCo, BetaCo and DeltaCo establish business specific growth supporting functions that facilitate organizational learning in critical aspects of their business models and growth strategies. These functions support growth explicitly through learning. Typically, business specific growth supporting functions work closely with support functions such as human resources, finance and business intelligence.

Organizational learning processes. Case studies' business specific growth supporting functions specialize in all four organizational learning processes. In fact, functions are designed to be a nexus for knowledge and information. These functions can devote attention and resources to search, evaluate and monitor internal and external knowledge and information. Business specific growth supporting functions gather, audit and store knowledge, make knowledge

explicit, and then distribute knowledge to the organization. Business specific growth supporting functions are also responsible for storing and retrieving knowledge and information. Preferred practices are rules, procedures and policies. Further practices include information systems, training materials and reports. These practices are used to educate new and existing employees.

Organizational learning modes. Business specific growth supporting functions are a performance management practice that supports case studies in progressing through stages of knowledge as well as in dealing with the presence of different stages of knowledge. Business specific growth supporting functions explore important matters and opportunities on behalf of other functions of the primary value chain. Business specific growth supporting functions, such as AlphaCo's Knowledge & Quality, take over the resource-intensive double loop learning that other functions, such as AlphaCo's diagnostic centers, cannot achieve with the intensity required. Know-how and best practices are made explicit and shared in rules, procedures and policies. Other functions follow these instructions, which results in single loop learning.

Office design

"We have invested a lot into our office recently to make it a nice place to work and make it easy to get in touch." (DeltaCo's COO emphasizes the relevance of the office design for motivation, information flows and as reward)

"This study highlights the importance of an under-examined organization design element—spatial design—and its implications for organizational learning, individual-level exploration, and firm performance."

Lee (2019, p. 467)

Design and use. AlphaCo, BetaCo and DeltaCo use their office designs to facilitate organizational learning processes. Office designs reflect information-based performance management practices in non-information-based practices. Office designs create intended and accidental information flows.

Organizational learning processes. Case studies use the design of their work environments as a collection of non-information-based, physical practices to educate employees about organizational cultures and structures. In the sense of "don't tell but show", these practices improve organizational participants' knowledge acquisition and information interpretation about essential aspects of performance management. Offices are used as non-financial rewards for being member of the organization. As such, offices support in recruiting new employees, who bring in their pre-existing knowledge. Office designs also create information flows, interactions and relationships between employees. Office locations in inner cities, office architectures, seating arrangements of teams and meeting rooms create intended, planned information flows. Office designs also increase the possibility of accidental, unplanned yet fruitful information flows. When employees meet in coffee kitchens or community spaces they might talk about work, informally exchange relevant information and develop ideas.

Organizational learning modes. Case studies use their office designs as representations of other performance management practices. Similar to cultural education processes, office designs indirectly support case studies' capacities for single loop and double loop learning.

4.2.4. Strategies and plans

Typologies and concepts of strategy

“We follow a clear growth strategy, domestically as well as internationally.”
(The Head of Finance on AlphaCo's strategic direction)

“Companies must combine strategies for growth with explicit strategies for learning.”
(Krogh & Cusumano, 2001, p. 54)

Design and use. AlphaCo, BetaCo and DeltaCo pursue growth strategies. All case studies control strategy as perspective, as pattern, as position, and as plan. Strategy as perspective, pattern and position are established, quite elaborated and intensely used. Managing strategy as plan is intended to be used more intensely.

Organizational learning processes. Case studies use all four concepts of strategy to guide knowledge acquisition, information distribution and interpretation as well as organizational memory. These four concepts of strategy provide different yet entangled views on knowledge and information to be acquired, distributed, interpreted, stored and retrieved. These different, entangled, tension-filled views are elaborated by performance management practices, which are associated with each concept of strategy.

For instance, strategy as perspective asks organizational members to acquire information relevant to vision and mission. In contrast, strategy as position urges them to only collect information relevant to the firm's product-market domain. The resulting tension is intended. The tension stimulates information sharing, creates more varied interpretations within and across teams, and forces organizational participants to reach consistent comprehensions and interpretations of conflicting information.

Organizational learning modes. Case studies use all four concepts of strategy to support organizational learning modes. Strategy as perspective and as pattern are associated with performance management practices – beliefs systems and interactive control systems – that facilitate double loop learning. Strategy as position and as plan are associated with performance management practices – boundary systems and diagnostic control systems – that facilitate single loop learning. Interestingly, case studies intend to intensify managing strategy as a plan in the growth stage by introducing performance measurement and feedback practices. At the same time, they intend to maintain the other three concepts of strategy. In other words, case studies use performance management practices to balance single loop and double loop learning.

Strategic and financial business plans

“The business plan is the highest law so to say. The business plan from July 2015 is negotiated and agreed upon with our strategic investor. The targets in our business plan are made transparent to the team, who then themselves derive their targets from it.”

(BetaCo’s COO on the relevance of a sound business plan)

“Planning helps a firm organize for growth and address the relevant managerial and strategic issues necessary to maintain rapid growth.”

(Barringer, Jones & Neubaum, 2005, p. 668)

Design and use. AlphaCo, BetaCo and DeltaCo design strategic business plans to outline key business aspects such as vision and mission, market analyses, business model dimensions and particular value propositions, status quo and past achievements, competitor analyses, growth strategy and strategic objectives, past financial results and financial planning, elaborations on technology, founder and management team, and company history. Case studies design financial business plans to record past financial results and project future financial developments; they design financial business plans in line with financial standards.

Organizational learning processes. Strategic and financial business plans facilitate knowledge acquisition, information distribution and interpretation as well as organizational memory in the most relevant aspects of case studies’ businesses. Business plans initiate and structure the acquisition of information and knowledge. Variances from planned financial and strategic objectives trigger intentional search and active scanning. Business plans support information interpretation, as they outline and develop cognitive maps about important aspects such as competition or technological developments. Similarly, business plans create a cognitive models about causes and effects between non-financial and financial KPIs.

Case studies also use their strategic and financial business plans as means to communicate with stakeholders. Case studies use a richness of media to communicate about the same aspects when sharing information. Examples include the cultural education process, the onboarding process, all-hands meetings, and investor meetings. Strategic business plans can be used to store and retrieve important information, for instance past analyses and insights, historic developments and achievements. Financial business plans store the record of past financial performance as well as critical assumptions for case studies’ future developments.

Organizational learning modes. Business plans facilitate single loop learning and double loop learning. Business plans facilitate single loop learning, when case studies just execute on business plans’ organizational objectives. Business plans can facilitate double loop learning, when case studies develop and adapt their business plans’ cognitive maps. The design of strategic and financial business plans themselves, as performance management practices, is able to facilitate both organizational learning modes. The design of review and adaptation processes associated with business plans is an important source of double loop learning. The most relevant of these processes is the strategic management process.

Strategic management process

“We do strategy meetings with top management only to set broad direction; then go on with communication and discussion with mid-management especially on mission statement and product vision. Then we all continue with workshops style strategy events to elaborate the strategy for the next 5 years, not systematically but we try to use standardized communication at different occasions.”

(The COO explains DeltaCo’s bi-annual strategic management process)

“There must be time for reflection and analysis, to think about strategic plans, dissect customer needs, assess current work systems, and invent new products. Learning is difficult when employees are hurried or rushed; it tends to be driven out by the pressures of the moment.”

(Garvin, 1993, p. 91)

Design and use. AlphaCo, BetaCo and DeltaCo design their strategic management processes as a top-down-bottom-up approach. Middle managers participate intensely. First founders suggest strategic objectives, then middle managers and founders develop strategies together. Strategic management processes introduce a clear distinction between opportunity seeking and strategy formulation as well as focusing attention and strategy implementation.

Organizational learning processes. Strategic management processes provide founders and middle managers with time and rhythm for knowledge acquisition, information distribution and interpretation as well as organizational memory. Preparations ahead of regular strategy meetings initiate knowledge acquisition, information sharing and analyses, and retrieving relevant information. Structures for these learning processes are typically included in strategic and financial business plans.

The top-down-bottom-up approach is used to distribute professional knowledge and function-specific information between founders and middle managers, which creates vertical information flows. The participative approach facilitates the distribution of information between middle managers, which creates horizontal information flows. Middle managers’ discussions with their teams improves information sharing and interpretation, and prepares strategy implementation. Documents, reports and presentations developed during strategy meetings are part of organizational memory.

A variety of interpretations of strategies is developed during strategy meetings. Yet the design of strategic management processes is to ensure that strategy meetings conclude with uniform interpretations. Especially strategic objectives outlined by founders foster the development of shared interpretations for strategies.

Organizational learning modes. AlphaCo, BetaCo and DeltaCo formalize their strategic management processes to distinguish organizational learning modes. Strategy meetings are times for reflection and double loop learning, while phases between quarterly or annual strategy meetings are times for execution and single loop learning. Strategic management processes foster double loop learning during strategy meetings, when strategic objectives and strategies are being discussed, revised and adapted to latest insights. Prepared, intense, structured strategic

management processes increase founders' and middle managers' trust in elaborated, sound, reliable strategic objectives and strategies. Founders and middle managers thus reduce the risk that they execute on the wrong strategies; because of reliable strategic objectives and strategies case studies can execute and engage in single loop learning.

Organizational processes

“Our solid foundation for scaling the business: process driven organization – the company turns implicit into explicit knowledge and has a proven tool set for all levels of the AlphaCo Process House.”

(The “AlphaCo Process House” about the relevance of explicit knowledge for scaling a business)

“The essence of a firm's competence and dynamic capabilities is presented here as being resident in the firm's organizational processes [...]”

(Teece, Pisano & Shuen, 1997, p. 524)

Design and use. AlphaCo, BetaCo and DeltaCo distinguish three types of organizational processes: strategic-singular processes, strategic-recurring processes and operational processes. The categorizations depend on stages of knowledge. Case studies use the categorization of organizational processes to focus attention and/or expand opportunity seeking. The categorization of organizational processes has implications for organizational learning processes, organizational learning modes and for the design and use of performance management practices.

Organizational processes and stages of knowledge framework. Case studies categorize organizational processes depending on stages of knowledge. Strategic-singular processes are in the early stages of knowledge; it is only possible to recognize “what is a good product” and “to define some conditions under which process gives good output” (Garvin, 1993, p. 83, stage 2). Strategic-recurring processes have advanced through stages of knowledge and “some key attributes can be measured” (Garvin, 1993, p. 83, stage 4). Operational processes are in later stages of knowledge, i.e. “process can be automated” (Garvin, 1993, p. 83, stage 7).

Strategic-singular processes. Strategic-singular processes require intense knowledge acquisition, often a lot of information sharing and constant information interpretation due to their low stage of knowledge. Strategic-singular processes require founders' attention, opportunity seeking and exploration. Correspondingly, preferred performance management practice design include: vision and strategic objectives, founders' roles, only a few selected strategic KPIs used interactively, subjective performance evaluation if at all, and typically no links to rewards.

Strategic-recurring processes. Strategic-recurring processes have advanced through stages of knowledge and are somewhere between stages 4 and 6. A lot has been learnt in the startup stage, and a lot is to be learnt in the growth stage. Strategic-recurring processes are used to deliver known value propositions reliably. Some strategic-recurring processes are used as a source of new value propositions.

Knowledge acquisition is demanded but also guided and directed; information sharing is expected but information flows are also channeled; varied interpretations of information are desired but information interpretations should also relate to existing cognitive maps; there are standards for storing and retrieving information but these standards are not yet comprehensive.

Strategic-recurring processes require a balance between focusing attention and opportunity seeking – between exploitation of existing process knowledge, and exploration of new knowledge. Correspondingly, preferred practices include: strategic objectives, founders' and middle managers' defined roles, organizational functions, strategic performance measurement systems, operational target setting processes, subjective performance evaluation processes, and rather links to non-financial rewards and informal penalties.

Operational processes. Operational processes require that organizations have proceeded to advanced stages of knowledge. Knowledge acquisition, information distribution and information interpretation are limited to measurable tasks at hand. In fact, organizational learning processes are avoided, if they do not contribute to performing a certain task or increase efficiency. Organizational memory is often standardized using information systems.

Growth supporting functions take over to improve operational processes. For example, AlphaCo's Department for Knowledge & Quality constantly improves the examination process in diagnostic centers. Operational processes are designed to focus attention and to exploit organizational knowledge. Correspondingly, preferred performance management practices include: clear roles, rules, procedures, policies, performance measurement systems, objective/formulaic performance evaluations, and often direct links to (financial) rewards.

Strategic objectives

"We always think about results first. Goals must be clear. How to get there can be changed on the way."
(BetaCo's COO on the difference between strategic objectives and strategies)

"Organizational learning is viewed as routine-based, history-dependent, and target-oriented."
(Levitt & March, 1988, p. 319)

Design and use. AlphaCo, BetaCo and DeltaCo use strategic objectives as one of their most central performance management practices. Strategic objectives are derived from vision, mission and key success factors and cover several performance perspectives. Strategic objectives are not too many, are communicated repeatedly, are formulated precisely and measurable, and are time-bound of about one to three years. Case studies use strategic objectives to foster opportunity seeking and direct strategy formulation as well as focus attention and guide strategy implementation.

Organizational learning processes. Similarly, to other organizational objectives, AlphaCo, BetaCo and DeltaCo use strategic objectives as decision criteria that facilitate knowledge acquisition, information distribution and interpretation as well as organizational memory. Yet

strategic objectives are more tangible, more near-term and more operational than vision, mission and key success factors. Put differently, the cognitive maps created by vision, mission and key success factors are made precise using strategic objectives.

Strategic objectives provide meaning to and frame information. Strategic objective initiate active scanning and intentional search, yet they can also trigger passive scanning and unintentional noticing. Strategic objectives can be used to filter information and thus avoid informational overload: Information is interpreted in relation to its usefulness for achieving strategic objectives. Revising and adapting strategic objectives is a mechanism to facilitate unlearning. In order to benefit organizational learning processes in these ways, strategic objectives should be designed as described above.

Organizational learning modes. AlphaCo, BetaCo and DeltaCo design strategic objectives so that they balance organizational learning modes. On the one hand, strategic objectives cover essential performance perspectives, guide strategy formulation, and allow to separate strategy formulation from implementation. Especially in the course of the strategic management process, this design facilitates double loop learning. On the other hand, strategic objectives operationalize vision, mission and key success factors; additionally, they are precise, measurable and are time-bound. Strategic objectives are communicated often. This design facilitates single loop learning, particularly in the phases between strategy meetings when organizations work towards strategic objectives.

Value propositions as organizational objectives

“Every business model where you’re not aligned with your customers, you’ll have some sort of problem over the long run.”

(DeltaCo’s CEO about the value proposition statement as a central performance management practice)

“[...], implementing a novel business model requires explorative activities as business model innovations are somehow new in nature and long for new organizational processes, structures, and capabilities. This stays in stark contrast to an operating business model of a company, which is most often directed at exploitation.”

(Gassmann, Frankenberger & Sauer, 2016, p. 23).

Design and use. AlphaCo, BetaCo and DeltaCo understand their value propositions as organizational objectives. Value propositions as organizational objectives must be both constantly achieved and adapted. Thus, value propositions are used to focus attention and expand opportunity seeking.

Organizational learning processes. Case studies use their value propositions as performance management practice. Framing value propositions as organizational objectives facilitates organizational learning processes. Similar to vision, mission, key success factors and strategic objectives, value propositions direct knowledge acquisition, initiate information sharing, and guide information interpretation. Documenting the successful delivery of existing value propositions, for instance in customer success stories or using procedures, as well as experiencing the development of new value propositions contribute to organizational memory.

Organizational learning modes. Framed as organizational objectives, value propositions become the objects of both single loop learning and double loop learning. On the one side, case studies organize themselves around known value propositions that need to be delivered reliably to customers; understanding value propositions as pre-defined objectives thus facilitates single loop learning. On the other side, case studies need to explore new value propositions; understanding value propositions as objectives to be defined thus facilitates double loop learning. In addition, value propositions interact with key success factors, strategic objectives and targets. When value propositions change, key success factors, strategic objectives and operational targets change as well. Thus, the process of adapting value propositions can induce double loop learning on a higher level.

Scaling unit concept

“A clear distinction must be made between running operations and the building up of new locations.”
(The Head of Special Projects on the different managerial approaches to AlphaCo’s headquarters and centers)

“Growing by duplication requires that a company externalize, or transfer, key elements of its infrastructure.”
(Von Krogh & Cusumano, 2001, p. 56)

Design and use. The scaling unit is that part of the organization’s value chain, which delivers value propositions to customers, whose know-how can be standardized and made explicit in documents, and whose know-how can be duplicated to further customer groups, markets and products. AlphaCo is a good example; their scaling units are diagnostic centers. Scaling units strictly guide organizational learning processes and focus on single loop learning. AlphaCo’s and DeltaCo’s scaling units are in line with the theoretical proposition.

Organizational learning processes. The performance management system in AlphaCo’s scaling unit is designed to focus knowledge acquisition on tasks at hand, to decrease information sharing to its necessary minimum, and to prescribe information interpretation. AlphaCo’s Department for Personnel & Academy and Department for Knowledge & Quality teach diagnostic center employees exactly the know-how they need to have in order to deliver AlphaCo’s value propositions. Potentially inefficient information sharing and interpretation are avoided and limited by the use of practices such as defined roles, rules, procedures, policies. These practices prescribe how to interpret information. Critical know-how is documented and made accessible in the “AlphaCo Information System”, AlphaCo’s knowledge management systems and the “playbook” of the Department for Special Projects. These performance management practices, or “means of learning” (Von Krogh & Cusumano, 2001, p. 60), are an essential source of AlphaCo’s organizational memory.

The possibility of executing a growth strategy using the scaling unit concept depends on stages of knowledge. This study proposes that an organization should have advanced at least to Garvin’s (1993, p. 84) fifth stage of knowledge. The scaling unit must be able to “locally control attributes” and ensure a “repeatable process designed by expert, but technicians can perform

it". Critical process know-how and necessary organizational knowledge can be documented, standardized, measured, audited, explicated, made accessible, and finally trained and learnt by other organizational members. From the fifth stage of knowledge onwards, scaling unit can be duplicated to other circumstances, thus supporting an organization's growth strategy.

Organizational learning modes. AlphaCo uses its organization structure to separate single loop and double loop learning. AlphaCo's diagnostic centers are used to focus on single loop learning so that value propositions are delivered reliably. For this reason, diagnostic centers' performance management system emphasizes strictly defined roles, rules, process procedures, policies, objective and formulaic performance evaluations, and financial incentives. Exactly because diagnostic centers engage only in single loop learning, their process know-how and performance management system can be duplicated. This is the foundation of AlphaCo's growth strategy. In order to make this focus on single loop learning possible, growth supporting functions, such as Knowledge & Quality, Personnel & Academy and Special Projects, are established to perform necessary double loop learning.

4.2.5. Key performance measures

Types of key performance measures

"Growth comes through new offices, so the KPI reporting must work for scaling."
(The COO outlines how the "DeltaCo Growth Cycle" needs to consider DeltaCo's scaling units)

"Diverse measures across financials, customers, processes and long-term innovation provide an important formal mechanism to collect information that can be used to develop organizational learning".
(Chenhall, 2005, p. 404)

Design and use. AlphaCo, BetaCo and DeltaCo use financial and non-financial KPIs to manage a variety of performance areas of their businesses. Performance measurement belongs to founders' understanding of entrepreneurship and is part of case studies' organizational cultures. This study categorizes three types of KPIs. On the strategic planning level, case studies use strategic KPIs to outline their visions, key success factors and growth strategies. On the management control level, case studies use growth KPIs to align strategies and operations. On the operational control level, case studies use ops KPIs to control standardized operational processes. Case studies approaches to key performance measures and performance measurement systems provide strong evidence for the theoretical proposition.

Organizational learning processes. Types of KPIs facilitate organizational learning processes in different ways. Strategic KPIs are used to make the cognitive maps created by vision, key success factors and strategy tangible and progress measurable. Strategic KPIs are deliberately broad to open up case studies' opportunity spaces, yet specific enough to guide knowledge acquisition, information distribution and information interpretation regarding visions, key success factors and growth strategies. 'Vision KPIs' and 'about-us KPIs' make case studies'

ambitions more understandable; they provide meaning to vision, key success factors and strategic objectives.

Growth KPIs are used to bridge the gap between growth strategies and operations. Growth KPIs are strategies' representatives in organizational processes; they can also be considered as comprehensive job descriptions of organizational functions and their middle managers. Growth KPIs give abstract strategies meaning in every day's efforts. Growth KPIs are designed broad enough to initiate organizational learning processes about strategies (strategy formulation), yet specific enough to direct and motivate organizational learning processes in operations (strategy implementation). Growth KPIs create horizontal information flows, when growth KPIs encompass several functions. Growth KPIs initiate active scanning and searching based their development, but also allow for passive scanning and noticing. Changing growth KPIs, as was partly done in action projects for developing strategic performance measurement systems, is a way to unlearn previous strategies. Trial-and-error efforts about how to drive growth KPIs, which are stored in reports and information systems, become part of organizational memory.

Ops KPIs are used to monitor and control repetitive operational processes. Organizational learning processes are facilitated foremost in the context of minimum targets for ops KPIs as well as correcting deviations from them. Ops KPIs are used to focus knowledge acquisition on executing specific process tasks, to decrease information sharing to a necessary minimum, and to prescribe the interpretation of incoming information. Ops KPIs are also often used to control compliance with rules, procedures and policies. Ops KPIs have, therefore, the opposite effect on organizational learning processes than strategic and growth KPIs.

Organizational learning modes. Key performance measures and stages of knowledge correspond to each other. The design of KPIs, or more precisely the selection of KPIs and linkages between KPIs, and use of KPIs depends on stages of knowledge. Conversely, this study suggests that stages of knowledge can be inferred from the design and use of KPIs.

In order to use strategic KPIs, case studies can be in early stages of knowledge, i.e. stage 1 or 2. Strategic KPIs are deliberately broad and can be generic at first. Strategic KPIs create broad organizational learning processes, typically on company level. Use of key performance measures is interactive.

In order to use growth KPIs, case studies need to be advanced in the stages of knowledge. This is particularly true for non-financial KPIs, since financial KPIs are more universal and less business specific. This study proposes that stage 4 "some key attributes can be measured" is a turning point for the use of KPIs. Growth KPIs are used to formulate strategy and to implement strategy. A lot of knowledge is already incorporated in the selection of growth KPIs. As a result, growth KPIs can be used to manage operations. Nevertheless, a lot has still to be learnt. Growth KPIs and especially non-financial growth KPIs create more specific and narrow organizational

learning processes, typically on functional levels. Growth KPIs have the difficult task to balance interactive and diagnostic use.

In order to use ops KPIs and to control operational processes, case studies need to have progressed to late stages of knowledge, i.e. stage 6, “production process can be mechanized and monitored manually” (Garvin, 1993, p. 84) and beyond. It fits this picture that ops KPIs are almost always non-financial. To be advanced in stages of knowledge is critical so that organizational learning about operational processes is not inhibited. Case studies have collected a lot of knowledge about operational processes. Activities are standardized and prescribed procedures and policies. Use is diagnostic.

The evolution of performance measurement

“We need to balance our culture of ownership with management’s information and control needs in a management by exception approach.”

(DeltaCo’s COO on how KPIs need to balance interactive and diagnostic use to support growth)

“When you can measure what you are speaking about, and express it in numbers, you know something about it... [Otherwise] your knowledge is of a meagre and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely in thought advanced to the stage of science.”

(Lord Kelvin, name giver to the base unit of temperature; cited in the performance measurement paper by Neely, Gregory & Platts, 1995, p. 80).

AlphaCo, BetaCo and DeltaCo’s design and use of key performance measures evolve over time, as illustrated in figure 43. This evolution can be understood as an evolution through stages of knowledge. This evolution is closely linked to case studies’ question: What is performance – what performance do we actually need?

KPIs in startups. Startups do not know enough about their business models and growth strategies to determine and measure the right activities. Startups have to learn more about what performance they actually need and in what areas. Startups are in early stages of knowledge, e.g. “recognizing a good prototype” (knowledge stage 1, Garvin, 1993, p. 84), and they need double loop learning to progress. As a result, startups avoid performance measurement that is designed too tightly. If startups used KPIs diagnostically, they would likely inhibit learning. Typically, startups use generic financial KPIs from their financial business plan; in addition, they have a general idea of some high-level non-financial KPIs. As for their stage of knowledge and the double loop learning required, startups use KPIs interactively.

KPIs in entrepreneurial growth companies. As ventures grow, they learn more about what performance is to them. Ventures use KPIs to frame and communicate their visions, key success factors, and strategies. Ventures have developed “the ability to define some conditions under which process gives good output” (knowledge stage 2, Garvin, 1993, p. 84). Ventures still need mostly double loop learning and thus strategic KPIs are used interactively.

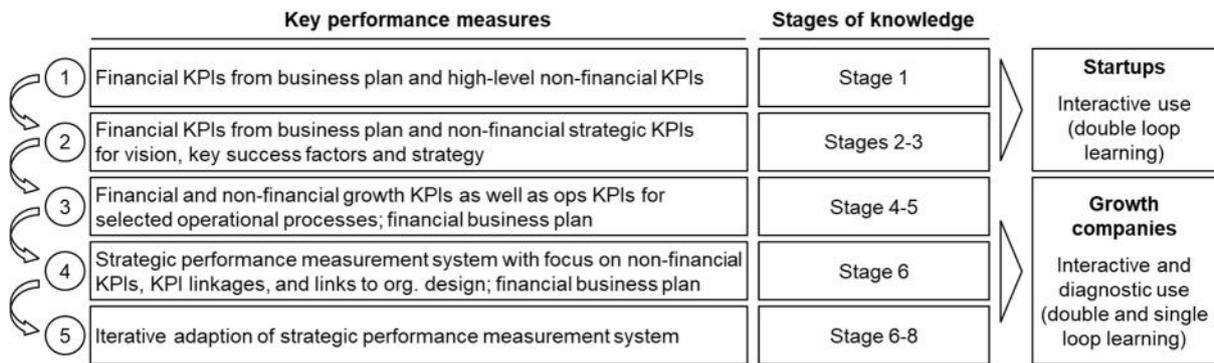


Fig. 43: The evolution of key performance measures design and use

Some KPIs, both financial KPIs from the financial business plan and non-financial KPIs, turn out to be more relevant to understanding and managing business models as well as formulating and implementing growth strategies. Entrepreneurial growth companies have learnt that “some key attributes can be measured” (knowledge stage 4, Garvin, 1993, p. 84). These KPIs are growth KPIs. Entrepreneurial growth companies use growth KPIs to translate strategy into operations. Entrepreneurial growth companies still need double loop learning to advance through stages of knowledge. However, increasingly entrepreneurial growth companies need to make sure that value propositions are delivered reliably to paying customers, which requires single loop learning. Growth KPIs are used to balance interactive and diagnostic use.

As organizational learning advances and knowledge is developed, certain organizational processes, such as customer service operations, become repetitive and established standards exist. Entrepreneurial growth companies have developed a “repeatable process” and “production process can be mechanized and monitored manually” (stages 5 and 6, Garvin, 1993, p. 84). Entrepreneurial growth companies need to ensure single loop learning and use KPIs diagnostically to exercise control and preserve organizational attention in operational processes. These KPIs are ops KPIs.

Strategic and growth KPIs are a selection of relevant individual key performance measures. Due to progress through stages of knowledge, relationships between KPIs become evident. Entrepreneurial growth companies use strategic performance measurement systems in order to add linkages between KPIs and test these linkages in their daily operations. Strategic performance measurement systems indicate that companies have advanced through stages of knowledge to be able to express their business models and growth strategies in interlinked key performance indicators. KPIs of strategic performance measurement systems are used both interactively and diagnostically.

Strategic performance measurement systems

“The idea is to derive KPIs from the vision and our business model, actually less from the strategy, and then allocate these KPIs to the org chart and make the 2nd level responsible for their KPIs. The KPI system shall be something like a framework for learning about our business. From this framework we can then derive a catalog of initiatives of what goes right and what and why things go wrong.”

(The CEO on how the “BetaCo Strategic KPI System” balances control and learning)

“There are arguments to support the view that integrative strategic performance measurement systems can contribute to each of the four elements of learning: information acquisition, interpretation, distribution and organizational memory.”

(Chenhall, 2005, p. 404)

Design and use. AlphaCo developed the “AlphaCo Process House” at the time of investigation. The “BetaCo Strategic KPI System” and the “DeltaCo Growth Cycle” were results of our action projects. Case studies design rational frameworks for strategic direction, to reduce internal and external complexity, to outline critical financial and non-financial performance areas as well as to provide an understanding of linkages and dependencies between business model, growth strategy, organizational design, and operational processes.

Organizational learning processes. Case studies’ strategic performance measurement systems are designed to contribute to all four organizational learning processes. Strategic performance measurement systems form cognitive models to specify business models and growth strategies. Linkages between key performance measures provide formal search mechanisms to acquire relevant knowledge and information. Strategic performance measurement systems facilitate information interpretation by framing information according to business models and strategies. Strategic performance measurement systems aggregate, integrate and channel information flows. Assumptions, trial-and-error, initiatives and efforts for driving key performance measures are recorded in performance measurement reports and thus contribute to organizational memory.

Strategic performance measurement systems use financial and non-financial KPIs. This design allows to understand performance from different perspectives, e.g. financial perspective, customers, products, suppliers and the organization. This design also aggregates activities to different degrees. Financial KPIs are lagging indicators; they are broad and summarize many activities and several process steps. Non-financial KPIs are leading indicators; they are more specific to business models and growth strategies, and are more informative about particular activities and process steps. The diverse set of integrated performance perspectives expressed in KPIs, which can translate into organizational functions, facilitates knowledge acquisition for these different perspectives, creates horizontal information flows across these perspectives and organizational functions, and contributes to a larger variety of potential interpretations.

Organizational learning modes. AlphaCo, BetaCo and DeltaCo design strategic performance measurement systems to increase diagnostic use, while maintaining interactive use. On the one hand, founders intend to exploit their organizations’ accumulated knowledge and need to

control strategy implementation by their middle managers. Thus, case studies use strategic performance measurement systems diagnostically. On the other hand, founders need to ensure further exploration of their business models and growth strategies, especially by leveraging professional knowledge and function-specific information of middle managers and their employees. Strategic performance measurement systems are discussed frequently, in BetaCo's case even weekly. Thus, case studies use strategic performance measurement systems interactively.

4.2.6. Target setting

Targets and target setting process

“We need to transform goal setting and our performance management approach to be more transparent, fair, rewarding, motivating and to unlock the full potential of our people and organization.”
(DeltaCo's COO explains why the company adopts a formalized OKR goal setting system)

“In committing to a target, people choose to divert attention toward goal-relevant activities and away from goal-irrelevant activities. Targets also motivate people to use the knowledge they have, or discover the needed knowledge, to help them attain the goal.”
(Merchant & Van der Stede, 2007, p. 333)

Design and use. AlphaCo, BetaCo and DeltaCo use all three types of targets, i.e. financial and non-financial targets as well as qualitative targets. Operational targets work towards strategic objectives, value propositions and vision statements. Time horizons are rather short. Performance levels are challenging. Case studies design participative target setting processes. All case studies are formalizing their operational target setting processes at the time of investigation. The formalization of target setting processes results in the separation of the processes steps of setting targets, measuring progress, and evaluating outcomes. Case studies approach to target setting provides material evidence for the theoretical proposition.

Organizational learning processes. Target setting is essential to organizational learning processes. Challenging operational targets motivate knowledge acquisition by activating existing knowledge, initiating information exchange, and searching for new information relevant to targets. Operational targets filter information flows and avoid information overload. Participative target setting processes organize information distribution and institutionalize personal interactions. Participative target setting processes create vertical and horizontal information flows by organizing regular feedback loops between founders and middle managers, and between middle managers and employees.

Target setting facilitates information distribution and interpretation, as participative target setting processes distill tacit knowledge and decentral information into explicit, communicable and actionable targets. The diversity in types of targets allows for various interpretations of information, yet the orientation of operational targets towards longer-term organizational objectives motivates to develop common interpretations. Due to an expectable process, target setting provides a mechanism for unlearning previous targets and open way for learning about

new targets. Targets and target achievements are typically stored in reports, presentations and information systems. The record of past targets, efforts to achieve them as well as actual outcomes contribute to organizational memory about effective activities. Recurring operational targets, and activities to achieve them that have proven effective, can evolve into regular organizational roles as well as rules and even procedures and policies.

Organizational learning modes. As for participative strategic management processes, case studies' formalization of their operational target setting processes results in the temporal separation of single loop and double loop learning. In meetings designed to evaluate outcomes versus previous targets (step 3 of the target setting cycle) and set new targets for the next period (step 1), organizational members use double loop learning. So that target setting meetings support double loop learning, target setting should be participative and targets should be rather challenging.

As soon as operational targets are set, organizational members work to achieve them (step 2). Organizational members can have trust in their targets, as the participative target setting process materializes knowledge and information, accommodates relevant performance perspectives and produces challenging targets. Now, founders, managers and employees acquire, distribute and interpret knowledge and information about behavior, activities and methods that help to achieve targets, but they do not question the targets themselves. Organizational participants thus engage in single loop learning.

The evolution of target setting

“The more often we check in on results the faster we learn whether things work out or not. If something does not work out, we can react quickly. If something works out well, we have learnt why.”
(BetaCo's CEO about the importance of the right target setting cycles)

“Goal setting and feedback will stimulate employees to engage in learning activities.”
(Bezuijen, van Dam, van den Berg & Thierry, 2010, p. 677)

As for the evolution of performance measurement, the design of operational target setting processes can be explained by stages of knowledge. The length of time horizons leads to faster or slower alternation between double loop and single loop learning. The more advanced a venture is in its stage of knowledge, the less need for frequent alternations and, in fact, the more need for single loop learning.

Target setting in startups. Startups need mainly double loop learning to create knowledge about their business and to progress through stages of knowledge. Accordingly, startup founders conflate the three steps of the target setting cycle into multi-purpose meetings. Startups constantly set new targets, evaluate efforts progress towards them, evaluate targets themselves and correct targets if necessary. These meetings take place in short frequencies and involve many, often too many participants. These face-to-face discussions about targets themselves are designed to create double loop learning.

Target setting in entrepreneurial growth companies. In contrast, entrepreneurial growth companies are advanced in their stages of knowledge. On the one hand, they need to reliably deliver to paying customers and hence many of their activities require single loop learning. On the other hand, they need to progress further in stages of knowledge in order to improve value propositions and develop new ones. Entrepreneurial growth companies, therefore, need to increase single loop learning and balance with double loop learning at the right times. They need to design the right lengths of time horizons for their operational target setting processes in order to alternate single loop and double loop learning.

OKRs – Objectives & Key Results

“[For OKRs] intrinsic motivation perceived is key, people set themselves ambitious targets. [OKRs are] not primarily a tool to measure people but to set the right priorities and measure achievement.”
(DeltaCo’s COO explains OKR design choices in his presentation on performance management)

BetaCo’s and DeltaCo’s adoption of the OKR goal setting system is particular evidence for case studies’ efforts to facilitate organizational learning processes and to balance organizational learning modes. Several pre-defined design choices of the OKR goal setting system support the theoretical proposition. Figure 44 provides a summary.

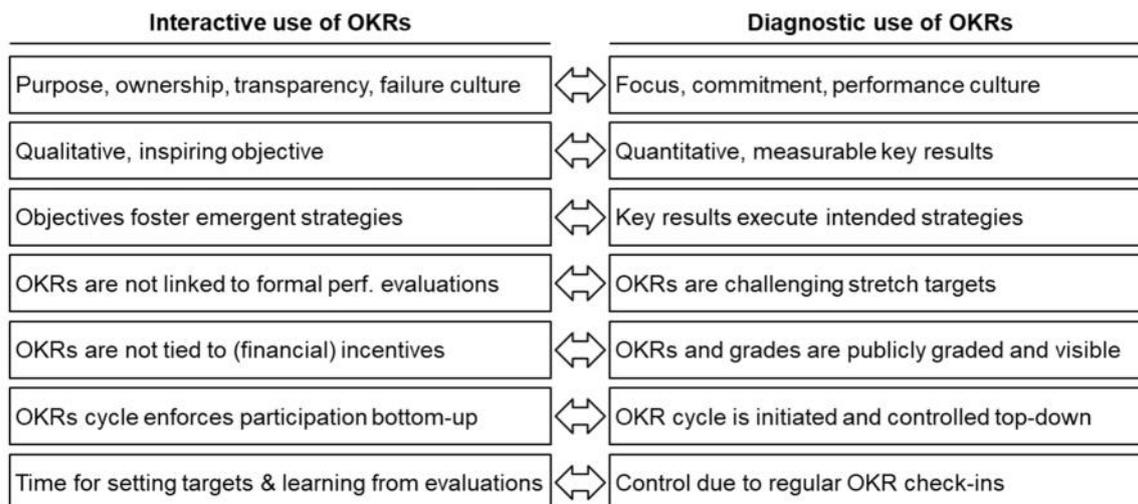


Fig. 44: Interactive and diagnostic use of OKRs

OKRs and values. The OKR principles emphasize organizational values associated with both double loop and single loop learning. On the one side, OKR principles support organizational values such as purpose, empowerment, ownership, teamwork, transparency as well as a failure culture. On the other side, OKRs enforce values such as focus, commitment, performance culture as well as data-driven decisions.

OKR principles. The ‘objective’ is used to qualitatively inspire strategies, especially to accommodate emerging strategies; but ‘key results’ are used to measure the execution on intended strategies. OKRs are not supposed to be linked to formal performance evaluations to

allow for employees' willingness to try and fail; but OKRs are supposed to be stretch targets that are quantitatively and publicly graded. OKRs are not supposed to be tied to incentives, especially not to financial rewards; but OKRs create pressure by being publicly graded and performance outcomes are visible to everyone. OKRs are discussed and checked bottom-up by employees; but each OKR cycle is initiated top-down starting with founders. Objectives and associated key results are to be suggested by employees bottom-up; but everyone, employees and managers, must agree.

OKR cycle. The OKR cycle alternates double loop and single loop learning over time. On the one hand, the OKR cycle organizes dedicated time for intense face-to-face discussions (horizontally and vertically) to grade OKRs from previous periods and to set new OKRs for the upcoming period. On the other hand, the OKR cycle demands regular 'check-ins' to monitor progress towards goal achievement including corrective action in case of deviations. All these design choices of OKRs are pre-defined in order to facilitate organizational learning processes in general, and balance single loop and double loop learning specifically.

4.2.7. Performance evaluation

"The objective of the talent management matrix is to develop people both professionally and personally, while strengthening competences needed for growing DeltaCo successfully on all levels."
(DeltaCo's COO highlights the links between performance evaluation, learning and business growth)

"Feedback interventions that direct attention to appropriate task behavior have been found to lead to more rapid learning, decreased errors during training, and improved performance. This type of feedback provides recipients with information about their work behavior and performance, and suggests how they can make improvements. Feedback may further affect learning by enhancing the relative exposure of recipients to instances of good versus bad performance, thus increasing the number of learning opportunities."
(Bezuijen, van Dam, van den Berg & Thierry, 2010, p. 677)

Design and use. Case studies design and use performance evaluation differently across organizational levels as well as across organizational functions. Case studies mainly use subjective performance evaluations. However, AlphaCo's diagnostic centers and DeltaCo's international sales offices use objective, formulaic performance evaluations. Informal situational feedback is an important part of case studies' approach to evaluation. Case studies' performance dimensions, which are used for performance evaluations, are stabilizing due to increased formality of visions, mission, organizational values systems, value propositions, roles and responsibilities, strategic objectives, key performance measures, and operational targets.

Organizational learning processes. Formal performance evaluations provide time and space for organizational learning. Performance evaluations and potential links to incentives are designed to reinforce other performance management practices. The formal and informal evaluation of outcomes versus performance dimensions motivates employees to acquire knowledge, to share information, to put effort into information interpretation, and to store knowledge and information for future use. This motivation is constantly reinforced by informal situational feedback.

Performance evaluation processes and informal situational feedback complete feedback loops, i.e. the loops of goals, action and feedback. Formal feedback loops are used for linking longer-run performance dimensions with larger organizational processes. Informal situational feedback links current situations and recent actions to performance dimensions. These feedback loops are designed so that founders, middle managers and employees can learn from each other.

Formal performance evaluation meetings reserve time for sharing information, discussing information interpretations and finding common interpretations. Performance evaluation processes schedule devoted time for reflecting about effectiveness of ways to acquire knowledge, to share information, to reach common interpretations of information, and to store and retrieve knowledge and information. Performance evaluations contribute to organizational memory, as organizational members systematically review successes and failures, and document learnings for themselves and other organizational members.

Organizational learning modes. AlphaCo, BetaCo and DeltaCo design performance evaluation approaches differently on different organizational levels and for different organizational functions, because they need to emphasize different organizational learning modes. As for target setting, formal performance evaluation processes allow to alternate between single loop and double loop learning. On the employee level, case studies intend to balance single loop and double loop learning. This balance corresponds to organizational values systems, which provides one important performance dimension. For most functions, case studies intend to balance single loop and double loop learning as well. Scaling units are the exception; they are designed for objective performance evaluations and are hence focused on single loop learning. On the company level, performance evaluations are largely subjective and thus facilitates double loop learning.

Stages of knowledge. Approaches to performance evaluations are dependent on stages of knowledge. The more advanced case studies are in their businesses' stages of knowledge, the clearer and more stable are performance dimensions. Startups do not know their performance dimensions and/or change them often in trial-and-error processes. Unknown or changing performance dimensions typically imply subjective performance evaluation. Entrepreneurial growth companies know more about their performance dimensions. Stable performance dimensions offer choices to design evaluation processes subjectively or objectively. Case studies still prefer subjective performance evaluation processes. AlphaCo and DeltaCo use objective performance evaluation processes only in their scaling units, i.e. in those functions that deliver known value propositions to known customers.

4.2.8. Reward systems

“[Regional managers’] bonus is fixed in the first full year, so that learning can take place.”
(AlphaCo’s CEO explains the negative effects of bonuses on learning in the face of uncertain measurement)

“Bonuses make sense only in case of objectively measurable and rather narrow activity, low variance of tasks (Sales, Account Management), and rewarding outstanding results.”
(The COO on why DeltaCo intends to abolish bonuses in all functions but sales)

“When designing reward systems for employees who perform complex tasks, organizations need to consider whether rewards linked to performance in the short run are wise if they wish to encourage learning over time.”
(Bonner & Sprinkle, 2002, p. 323)

Design and use. Case studies use financial rewards and formal penalties, but design them carefully. Instead, case studies emphasize non-financial rewards and especially group rewards. They apply informal, reversible penalties only if necessary. Most incentives are determined by subjective performance evaluations. Case studies use incentives mainly for motivation as well as employee attraction and retention purposes. These approaches to designing incentives are particularly strong evidence for the theoretical proposition.

Organizational learning processes. Organizational learning processes require effort. Effort needs to be rewarded. Case studies use rewards that support organizational learning processes or they avoid incentives that likely inhibit organizational learning.

Case studies use non-financial group rewards intensely. Non-financial group rewards support information distribution and interpretation. In fact, incentives such as office design and social events are practices themselves to facilitate information sharing and interpretation. Non-financial rewards such as trainings, employee development and exposure are practices to enhance organizational knowledge. Autonomy, responsibility and fast careers are rewards for engaging in trial-and-error, searching based on success and failure, and learning from other employees.

Case studies try to avoid incentives that likely hinder organizational learning processes. Case studies hardly use incentives for effort-directing purposes in order to not contradict the organizational learning processes that other practices are supposed to induce. Case studies prefer to design financial rewards, i.e. base salaries, stock options and promotions, so that they are as neutral as possible to organizational learning processes.

Case studies avoid strong financial rewards and especially bonuses. Financial rewards likely facilitate organizational learning processes about performance dimensions, which clearly and directly result in gaining these financial rewards. Due to their stages of knowledge, case studies do not have such stable performance dimensions yet. The only functions, for which performance dimensions are sufficiently stable, are AlphaCo’s and DeltaCo’s scaling units.

Case studies avoid penalties, since penalties might decrease employees’ willingness to engage in trial-and-error processes, to share critical information, and to develop varieties of information

interpretations. Harsh penalties, such as public shaming, are banished because such practices strongly contradict learning cultures. If case studies apply formal penalties, they ground them on actual results. Case studies prefer informal, short-term penalties instead, because they can be quickly reversed.

Organizational learning modes. The design and use of rewards and penalties support single loop and double loop learning. Single loop learning is supported by allocating financial rewards, formal penalties and informal penalties based on actual results. Single loop learning is particularly supported in AlphaCo's and DeltaCo's scaling units, as rewards and penalties are allocated through objective, formulaic performance evaluation processes. Double loop learning is supported by allocating non-financial rewards based on contributions and through subjective performance evaluation processes. Double loop learning is especially supported by emphasizing non-financial group rewards, which are independent of individual performance.

4.2.9. Information flows, systems and networks

Information systems

"Digitality and provision of the right information and data at the right place to the right time enable the global division of labor and experts."

(AlphaCo's strategic business plan on the relevance of the "AlphaCo Information System" for its business)

"Accounting and formal information systems have been identified as important to developing organizational memory."

(Chenhall, 2005, p. 405)

Design and use. AlphaCo, BetaCo and DeltaCo recognize the relevance of purposeful designed information flows – introducing information systems, scheduling regular meetings, and creating informal communication networks. Organizational values systems promote the free flow of information. Meeting schedules create vertical and horizontal information flows. Despite their young age, case studies use a variety of information systems for business operations, collaboration and support functions.

Organizational learning processes and information systems. AlphaCo, BetaCo and DeltaCo use information systems to collect, organize, store and distribute knowledge and information. Information systems for business operations, such as the "AlphaCo Information System" and "DeltaCo DL 360", create horizontal information flows across the value chain; they digitize and to some degree standardize core business processes. The technological development of proprietary software is part of AlphaCo's and DeltaCo's business model innovations.

Information systems for collaboration create information nodes, organize information and facilitate the timely flow of information between organizational participants. A particular form of collaboration systems are knowledge management systems, such as AlphaCo's "Confluence" or DeltaCo's "Asana". These information systems collect, organize and help activate organizational knowledge. Case studies use remarkably many and many different information

systems for collaboration purposes: There are six different systems at AlphaCo, five at BetaCo, and three comprehensive systems at DeltaCo. The intense use of collaboration systems reflects organizational values systems, i.e. learning through team interaction and learning through information sharing.

Information systems for finance and accounting, business intelligence and human resources functions collect, structure and distribute particular relevant performance information about employees, functions and the entire organization. At all case studies, growth supporting functions are responsible for introducing and maintaining information systems. Support functions' professionalization is often associated with the adoption of information systems.

Organizational learning modes and information systems. Information systems are typically designed for single loop learning. Information systems structure and thus prescribe the execution of activities and set standards in organizational processes. Yet the availability of reliable, timely information is also required for double loop learning. The possibility of standardizing processes in information systems indicates preceding double loop learning as well as an advanced stage of knowledge.

While standardized activities and processes are needed for scaling, information systems can also suppress double loop learning. Information systems are a challenge to balancing single loop and double loop learning. In the context of case studies, the need for standardization and the improved distribution of information might outweigh the risk that double loop learning could be inhibited by information systems. This study also suggests that for entrepreneurial growth companies the interaction of information systems with organizational learning modes requires further research.

Information networks, meetings and informal communication

“We over communicate a lot; it helps with aligning and learning.”
(The COO about why DeltaCo prefers more regular meetings instead of less)

“We need to build up a meeting structure and then tightly keep ‘meeting compliance’, which means to attend to meetings in time and not to change the meeting schedule too often. Meetings are a tool to teach and learn. We also need to change from informative meetings to decision meetings.”
(BetaCo’s CEO explains the relevance of meeting regularly and in person)

“Top-down knowledge inflows from persons at higher hierarchical levels than the manager are positively related to exploitation. Conversely, horizontal and bottom-up knowledge inflows from peers and persons at lower hierarchical levels are positively related to exploration. The findings thus indicate that the more a manager acquires top-down and horizontal or bottom-up knowledge flows, the higher the levels of exploration and exploitation in which the manager engages.” (Raisch & Birkinshaw, 2008, p. 378, reviewing the study by Mom, van den Bosch & Volberda, 2007, on types of information flows)

Design and use. AlphaCo, BetaCo and DeltaCo are conscious of designing formal meeting schedules. There are eleven types of meetings. Meeting schedules are designed to create vertical and/or horizontal information flows. Formal practices are used to induce informal communication and employee networks. In the context of information networks, middle

managers play essential roles in knowledge acquisition, information distribution and interpretation as well as organizational memory.

Organizational learning processes and meetings. Meetings are one of the most relevant practices for all organizational learning processes. Meetings are typically prepared by focused search and active scanning for relevant information and knowledge. Schedules of regular meetings channel information and create vertical and horizontal information flows. In meetings organizational members share their professional knowledge and function-specific information so that they can learn from each other.

Meetings initiate discussions about organizational members' various interpretations of information as well as induce effort and provide time for reaching common interpretations. Meetings frame information flows and create cognitive maps. Equally important, meetings revive cognitive maps such as provided by several of the performance management practices outlined above. Documentations created for meetings, during meetings and after meetings – regular presentations and structured reports as well as meeting specific analyses, white board drawings, meeting protocols, personal notes – form a significant part of organizational memory. Typically, these documentations are stored in information systems for collaboration and knowledge management; effective meetings, organizational memory and information systems are thus mutually dependent.

Informal communication and organizational learning processes. Case studies use formal practices to deliberately initiate informal communication and informal employee networks. Informal communication is used as a further channel for information distribution. Informal communication can result in information sharing and interpretation in a more open, freer, less hierarchical, more casual setting with less performance pressure and hence a more creative atmosphere. Informal situations might allow for more willingness to share information, to engage in brainstorming, problem solving as well as to express opinions outside official norms and organizational roles. In order to facilitate informal communication and networks, case studies emphasize non-financial group rewards such as office designs and social events.

Organizational learning modes. Case studies' eleven types of meetings create vertical and/or horizontal information flows within case studies' organizations. Interestingly, five types of meetings create vertical information flows and horizontal information flows. Vertical information flows go both ways, i.e. top-down as well as bottom-up. Horizontal information flows go from peer-to-peer and along value chains, or, more specifically comprehend strategic-recurring processes. Vertical information flows are associated with exploitation. Horizontal information flows are associated with exploration. Formal meeting schedules are designed and used to balance exploration and exploitation. Table 30 summarizes how meetings direct information flows and how middle managers are involved.

	Direction of information flows	Involvement of middle managers
Founders	horizontal, peer-to-peer to cover three main parts of org. structure	Meeting for founders only
Founders and direct reports	vertical, bottom-up, middle managers answer to founders	Meetings between founders and their direct reports
Leadership team	vertical, top-down-bottom-up, and horizontal, peer-to-peer	Leadership typically involves founders and middle managers
Company-wide	vertical, top-down, founders reporting to employees	Managers report about their functions
Strategic management	vertical, top-down-bottom-up, and horizontal, peer-to-peer	Strategic management process with founders and managers
Board of directors	vertical, bottom-up, founders answer to investors	Meeting for founders and investors only
Target setting	vertical, top-down-bottom-up, and horizontal, peer-to-peer	Operational targets are set on functional level at least
Performance evaluation	vertical, top-down-bottom-up, usually mutual feedback	Middle managers either evaluate or are evaluated
Knowledge exchange	vertical, top-down-bottom-up, and horizontal, peer-to-peer	Often middle managers are experts in knowledge sessions
Team meetings	vertical, top-down-bottom-up, and horizontal, peer-to-peer	Meeting of middle managers with their function's employees
Cross team meetings	horizontal, peer-to-peer, often functions along value chain	Middle managers take leading roles in cross team meetings

Tab. 30: Meetings, direction of information flows and middle managers' involvement

Middle managers are critical in routing information vertically and horizontally through the organization. Only founders' regular meetings and meetings of the board of directors do not involve middle managers. This finding fits to the observation that middle managers' profiles typically require them to be able to engage in exploration as well as exploitation.

Informal communication is used to facilitate exploration. Informal communication bears less risks for penalties. Informal situations encourage to share critical information off the record, casually challenge norms, standards and objectives, and creatively think outside the box. Case studies emphasis on informal information can be explained by their intention to support a form of informal exploration.

Evolution of meeting schedules

Meeting schedules in startups. The evolution of meetings reflects stages of knowledge. Meeting designs are used to accommodate single loop and/or double loop learning. Startups start out with frequent meetings between founders and early employees. Meetings are typically ad-hoc in the early days of a startup. Soon some meetings, typically company meetings, team meetings and jour fixes, become more regular. Meetings are used for multiple purposes and often purposes change from one meeting to the other. Meeting frequencies are high – weekly or bi-weekly – since startups have to acquire a lot of new knowledge, have to share a lot of new information and especially need to interpret new information constantly. The design and use of meetings aim at double loop learning in order to advance through the early stages of knowledge.

Meeting schedules in entrepreneurial growth companies. As organizations grow, meeting schedules become more regular. Typically, meetings invite many participants, often too many, as it is still difficult to know what information is relevant for whom. Larger meetings also trace back to values systems promoting transparency and participation. Meeting frequencies are still rather high. This high pace is needed to acquire, share and interpret information often, fast and intensely in order to progress through stages of knowledge. Case studies intend to lengthen meeting periods and to specialize in meeting purposes. Meetings for strategic management processes, meetings related to different steps of operational target setting processes, as well as meetings for performance evaluations are established. Formal meeting schedules are designed to alternate between single loop and double loop learning. Formal meeting schedules are revealing of where growing organizations are located in their stages of knowledge.

4.2.10. Performance management system use

“The main driver behind reviewing our performance management is the increase in size by hiring more people and in particular by adding international offices.” (DeltaCo’s COO explaining the need to adapt their performance management system)

“Diagnostic control systems facilitate single loop learning; interactive control systems facilitate double loop learning. The single loop learning keeps a process within desired bounds; double loop learning leads to question about the very basis upon which strategies have been constructed.” (Simons, 1995, p. 106)

Design and use. AlphaCo, BetaCo and DeltaCo work intensely on re-designing and adopting performance measurement and feedback practices. Case studies re-design performance measurement, performance evaluation and target setting at the same time. Case studies intend to increase diagnostic use, maintain interactive use, and make clear distinction between both types of use of performance information.

Organizational learning processes. Types of use have different implications for organizational learning processes. Interactive use increases variety by broadening knowledge acquisition, information distribution and interpretation. Diagnostic use reduces variety by focusing knowledge acquisition, information distribution and interpretation. Interactive use expands organizational learning processes to search for upcoming questions so that case studies learn about performance needed in the future. Diagnostic use narrows organizational learning processes to provide answers so that founders have control about delivering known performance in the present. Interactive use relates to early stages of knowledge. Diagnostic use relates to advanced stages of knowledge.

Interactive use and organizational learning processes. Case studies use performance measurement and feedback practices interactively in areas where they face high uncertainty, where learning needs are most significant, and where they are strategically vulnerable. Interactive use implies generally more, sometimes experimental and sometimes even causeless acquisition of knowledge and information; some part of knowledge acquisition might be unintentional and unsystematic, and driven by passive rather than active scanning. Information

distribution is broadened vertically and horizontally throughout the organization and some information distribution is deliberately designed to happen accidentally. Information is shared and discussed frequently and face-to-face by organizational members of all hierarchical levels. Information interpretation does take place with reference to existing cognitive maps, frames and meanings, yet these cognitive maps, frames and meanings are allowed to be challenged, and even unlearned and replaced. For such interpretation processes, performance measurement, target setting and performance evaluation processes receive dedicated time and space. Results from these processes are stored and create organizational memory about success and failure.

Diagnostic use and organizational learning processes. Case studies use performance measurement and feedback practices diagnostically in areas that they already know well. Case studies know how to determine performance standards, know how to measure outcomes and in most instances know how to correct deviations. Diagnostic use implies that only that knowledge is acquired and only that information is shared that helps to avoid or correct deviations from preset performance standards. Information is interpreted only within existing cognitive models. Information is only stored and retrieved if it did help to avoid errors in the past. Using performance measurement and feedback practices, case studies become better, more reliable and more efficient in activities where they already have substantial know-how.

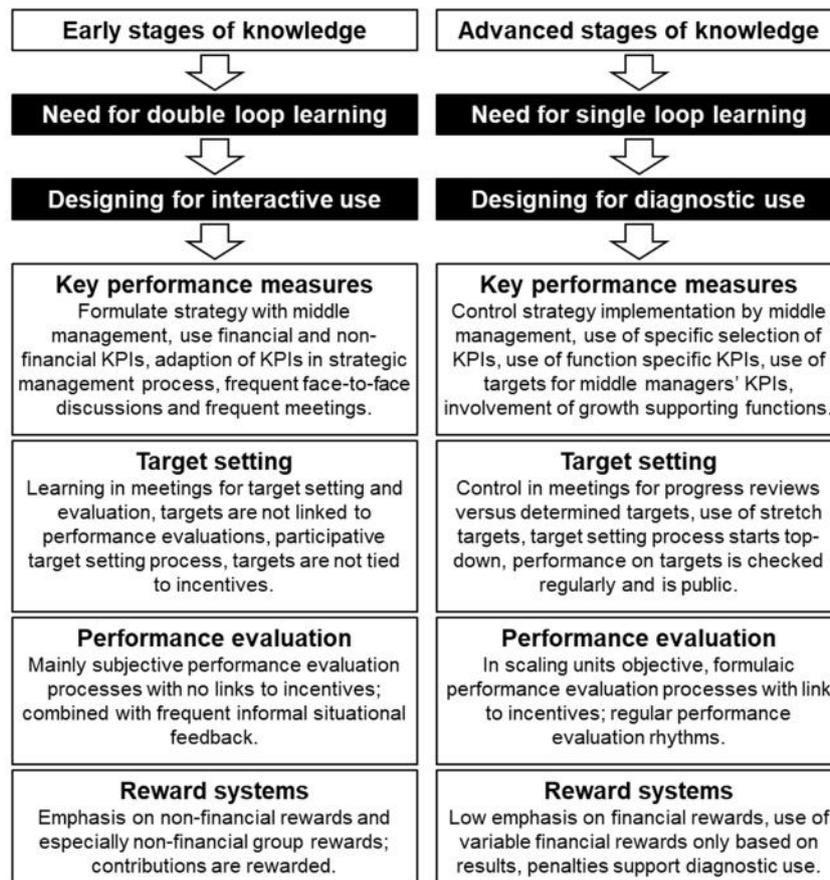


Fig. 45: Stages of knowledge, organizational learning modes and performance management

Incentives. Case studies' design of rewards and penalties supports the two types of use of performance measurement and feedback practices. Generally, incentives are designed to be either as neutral as possible, or in case of doubt are designed so that they do not conflict with interactive use. Only in scaling units, where use is to be and can be diagnostically, are incentives – especially financial incentives – designed to focus organizational learning processes.

Organizational learning modes. Types of use are linked to organizational learning modes. Performance measurement and feedback practices are used interactively – i.e. require frequent attention, involve face-to-face meetings, foster continual challenge and debate – in order to facilitate double loop learning. Performance measurement and feedback practices are used diagnostically – i.e. measure outputs and correct deviations from targets – in order to facilitate single loop learning. As illustrated in figure 45, the designs of performance measurement and feedback practices are chosen to accommodate for interactive and/or diagnostic use.

The evolution of use of performance measurement and feedback practices relates to stages of knowledge. Startups are in early stages of knowledge and require interactive use. Entrepreneurial growth companies advance through stages of knowledge and need to add diagnostic use in some areas of their businesses. Entrepreneurial growth companies start with diagnostic use in scaling units and for operational processes. However, in other areas of their business, entrepreneurial growth companies are still in early stages of knowledge. Therefore, entrepreneurial growth companies maintain interactive use at the same time.

4.2.11. Performance management system change

AlphaCo, BetaCo and DeltaCo change their performance management system design and use consistently due to the same six antecedents. Outcomes of change to design apply to the design of almost all performance management system components with the exception of organizational culture and key success factors. Performance management system use evolves from interactive to more diagnostic use; the goal is to balance interactive and diagnostic use. Founders anticipate necessary changes and manage change in proactive, systematic ways. From this proactiveness it can be concluded that case studies are aware of the need to improve their organizations' abilities for organizational learning.

Antecedents of change and organizational learning processes. At AlphaCo, BetaCo and DeltaCo this study identifies six antecedents of performance management system change, all of which are associated with organizational learning processes. Shared visions are an antecedent, because growth ambitions require more organizational members to learn more about case studies' businesses. Case studies' objectives to grow in business and therefore in organization are the strongest antecedent to performance management system change.

The experiences of case studies' founder teams are an antecedent, because founders' pre-existing knowledge helps them to anticipate and drive necessary changes. The diversity of

founder teams' knowledge as well as the role of the operations founder improve the likelihood of purposeful anticipations and actual implementations. Founders also acquire relevant knowledge from their social networks, advisors, consultants and venture capital investors.

Strategies for growth are an antecedent, because they configure the cognitive maps within which organizational participants acquire knowledge as well as distribute, interpret, store and retrieve information. Organizational growth is an antecedent, because new employees must quickly acquire organizational knowledge, need to share and receive the right information, and be able to interpret information as intended by performance management systems.

Middle managers are an antecedent, because they contribute their professional knowledge, acquire function-specific information, route information vertically and horizontally, process and interpret information, support employees with processing and interpreting information, and are largely responsible for establishing and administrating practices and information systems for organizational memory. Relatedly, growth supporting functions are an antecedent, because growing organizations need support in acquiring relevant knowledge, need to be supplied with financial and non-financial information, need to be provided by cognitive maps that helps them interpret information, and need processes and systems to store and retrieve information.

Growth strategies, middle management and growth supporting functions are not only particularly essential antecedents, but outcomes of changes as well. Growth visions are implemented by actual growth strategies. Growth strategies require organizational growth. Growth visions, growth strategies and organizational growth require to alter organizational structures and to establish a middle management level as well as to professionalize growth supporting functions.

This chain of growth visions, growth strategies, organizational growth, middle management and growth supporting functions can be understood as a chain of increasing role specificity in organizational learning. While growth visions' role in organizational learning is quite broad, growth supporting functions' roles are already quite specific. Practices, such as KPIs, target setting or information systems, are even more specific to organizational learning.

Outcomes of change and organizational learning processes. The outcomes of changes to performance management systems can consistently be explained by the intention to facilitate organizational learning processes as well as to accommodate for both organizational learning modes. Explanations are provided in the chapters above and explanations shall not be repeated here. A particular interesting finding is that case studies' organizational cultures are stable and are not subject to changes. Organizational cultures are already aligned with the overarching goal to facilitate organizational learning processes and modes. Since case studies already have established a learning culture, related practices – especially visions and values systems – do not have to be changed.

Organizational learning modes. AlphaCo, BetaCo and DeltaCo also change performance management system use. Use needs to change, as case studies need to progress in their stages of knowledge. In order to advance in stages of knowledge, case studies need to design for both single loop and double loop learning. In the startup stage, performance management systems are used interactively mainly to facilitate double loop learning. In the growth stage, case studies intend to use performance management systems more diagnostically in order to facilitate single loop learning. At the same time, they intend to maintain interactive use to support double loop learning. In other words, case studies balance single loop and double loop learning in order to grow. Balanced performance management system use involves changes in performance management system designs. In this sense, intended use is an antecedent – it could be termed as a ‘meta-antecedent’ – for performance management system design: design follows use.

4.2.12. Strength and coherence

Chenhall’s criteria

Ferreira & Otley (2009, p. 276) refer to Chenhall’s (2003, p. 136) six criteria to evaluate strength and coherence of performance management systems. AlphaCo, BetaCo and DeltaCo meet five criteria.

Organizational learning processes. This study proposes that Chenhall’s (2003, p. 136) criteria can be ‘aggregated’ to the principle of designing performance management systems in order to facilitate organizational learning processes. The consideration of multiple stakeholders, the measurement of efficiency and effectiveness as well as the measurement of financial and non-financial outcomes allow to acquire a higher diversity of relevant knowledge and information, require organizations to share information more extensively with all stakeholders, and enable a higher variety of information interpretations while being compelled to achieve unified interpretations among stakeholders. Depending on organizational levels, vertical links between strategy and operations and horizontal links across the value chain allow to broaden and focus organizational learning processes. Vertical and horizontal links allow to develop consistent relevance criteria for the acquisition of knowledge, create information flows across the organization, and ensure consistent cognitive maps on all organizational levels.

Organizational learning modes. This study further proposes that some of Chenhall’s (2003, p. 136) criteria are associated with efforts to balance organizational learning modes. The adoption of various perspectives in performance measurement and through multiple stakeholders is associated with interactive and diagnostic use. Case studies’ designs of performance measurement thus supports both double loop and single loop learning. Vertical links between strategy and operations and horizontal links across the value chain support both single loop and double loop learning.

Interdependencies

AlphaCo, BetaCo and DeltaCo take into consideration the interdependencies within Ferreira & Otley's (2009) first eight performance management system components. Case studies also take into consideration the interdependencies between the first eight components and information flows, systems and networks. In chapter 4.1.12 a total of 34 interdependencies are analyzed. These interdependent performance management practices are designed so that they are complements to each other. Case studies achieve this complementarity by focusing on internal consistency between organizational learning processes required as well as organizational learning modes required in interdependent practices.

Organizational learning process. This study proposes that strength and coherence as well as complement performance management practices require internal consistency in organizational learning processes. These thoughts shall be explained with an example. The component of vision and mission is interdependent and complement with four other components: key success factors, strategies and plans, key performance measures as well as performance evaluation (Ferreira & Otley, 2009, pp. 267, 268, 270). In the context of case studies: the growth vision is further defined by the selection of key success factors, is outlined by the growth strategy, is measured by key performance measures, and is enforced by performance evaluation processes.

AlphaCo's growth vision to become a "global market leader" is further defined by: (1) AlphaCo's key success factors of revenue growth, organizational growth and product development; (2) the strategy to grow by planning and opening up diagnostic centers (decentral organizational units or scaling units); (3) the strategic KPIs of revenue per diagnostic center and number of diagnostic centers; and (4) by using commitment to and progress towards their vision as a performance dimension in formalized performance evaluation processes as well as informal situational feedback on all organizational levels of their headquarters. These four complement practices further define and elaborate the growth vision, they provide clarity, detail, and make the vision more tangible and understandable to organizational participants. AlphaCo's key success factors, growth strategy, key performance measures and performance evaluations are designed so that they have implications on organizational learning processes that are consistent with AlphaCo's growth vision.

To avoid complexity, the further explanation of this example is focused on the interdependency between AlphaCo's growth vision and number of diagnostic centers as its most essential non-financial KPI. The growth vision to become a "global market leader" has the same criteria for useful knowledge acquisition like the key performance measure of number of diagnostic centers. Information distribution that serves the KPI of number of diagnostic centers also serves the growth vision. Growth vision and key performance measures support the same cognitive

model, frame information correspondingly, and result in storing knowledge and information that helps both practices.

The difference between growth vision and key performance measures is how broad and general or narrow and specific their implications are on organizational learning processes. The growth vision initiates knowledge acquisition on a broad basis, allowing for broad searching, noticing and also passive scanning. A KPI such as number of diagnostic centers specifies knowledge to be acquired in more detail and initiates more focused search. Information flows that are relevant for the KPI of number of diagnostic centers are also relevant for the growth vision, just more specific. The growth vision builds an overarching cognitive model to organizational participants, within which the KPI of number of diagnostic centers forms a particularly actionable part. The growth vision initiates to store high level information, while a KPI such as number of diagnostic centers results in storing and retrieving detailed knowledge and information, for instance in the “Raumbuch” (playbook) of AlphaCo’s Department for Special Projects. These relationships are illustrated in figure 46.

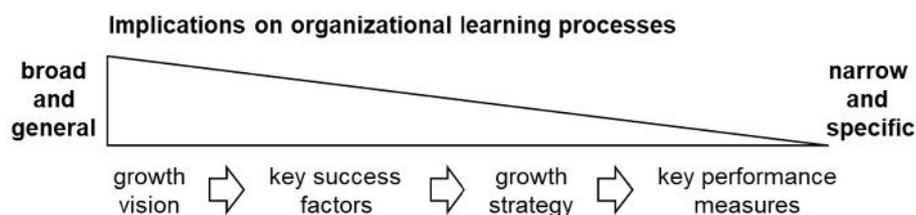


Fig. 46: Implications of complement performance management practices on organizational learning

Organizational learning modes. Strength and coherence between interdependent performance management components also involves stages of knowledge, organizational learning modes and associated use of performance management practices. An example explains these thoughts. Key performance measures and performance evaluation are interdependencies to each other (Ferreira & Otley, 2009, p. 267). These components are interdependencies to each other, although both practices are designed quite differently across organizational functions, e.g. in headquarters and scaling units.

DeltaCo’s headquarters employees have to be organized for different stages of knowledge. In some areas DeltaCo is advanced, in some areas DeltaCo is in early stages of knowledge. Due to different stages of knowledge, key performance measures, and after the action project the “DeltaCo Growth Cycle”, are used interactively and diagnostically in order to facilitate both double loop and single loop learning. Accordingly, performance evaluation design is subjective in order to ensure that double loop learning is still supported as well as to allow for single loop learning in suitable areas.

In contrast, DeltaCo's international sales offices (scaling units) apply knowledge that has advanced through several stages of knowledge, e.g. "production process can be mechanized and monitored manually" (Garvin, 1993, p. 84). Revenue targets are compared to revenue actuals and key performance measures are used diagnostically. Objective, formulaic performance evaluation processes are applied and are linked to financial rewards. The use of KPIs and performance evaluation is diagnostic in order to facilitate single loop learning.

The respective designs of key performance measures and performance evaluation are complement to each other, because their required type of interactive and/or diagnostic use is complement. More precisely: DeltaCo's designs of key performance measures and designs of performance evaluation processes in different contexts – headquarters and international sales offices – are complement to each other, because their organizational learning modes required by stages of knowledge and associated type of use are internally consistent to each other.

Systems, not packages

AlphaCo, BetaCo and DeltaCo design performance management systems, and not packages. Performance management practices are interdependent, design choices take these interdependencies into account, and performance management practices are designed as complements. It can be argued that case studies achieve to design systems rather than packages due to their focus on organizational learning.

Internal consistency. Sandelin (2008, p. 338) finds that "internal consistency echoes independent yet goal-consistent design of control elements" and "internal consistency was built into the control system by prioritizing a certain form of control". Sandelin (2008, p. 338) explains: "The primary control element was given material significance by other control elements. Thus, here the logic of internal consistency builds on reciprocal processes: the primary mode of control shapes the design of the control package whereas the use of the secondary modes of control complements the primary one. The use of the secondary modes of control secures the primacy of certain mode of control to the extent that their design is based on the primary one."

Learning cultures. AlphaCo, BetaCo and DeltaCo need to learn in order to grow. Previous chapters have established that organizational learning is the dominant principle for case studies' performance management system design and use. Learning in order to grow is case studies' true north when adopting, designing and re-designing their performance management approaches.

Organizational learning is defined, substantiated and enforced by case studies' organizational cultures. Their organizational cultures are designed to be "learning cultures" (Schein, 2008, pp. 393-406). Vision statements outline the overarching objective of efforts to learn. Mission statements explain the motivation of why visions and value propositions matter. Organizational

values systems include four categories of values; this design ensures different perspectives on and methods of organizational learning. Case studies' cultures are built around customer value propositions. Organizational cultures are so important that case studies apply physical, non-information-based practices to make them visible, tangible and experientable to all organizational members.

Learning culture as primary mode of control. Cultural performance management practices – vision, mission, values, value propositions – are case studies' "primary mode of control", as defined by Sandelin (2008, p. 338). "Secondary modes of control" (Sandelin, 2008, p. 338) are adopted, designed and re-designed with the intention to not contradict case studies' learning cultures – to not develop into substitutes (Grabner & Moers, 2013, p. 412) to organizational cultures. A non-growth or modest growth strategy would be a substitute to the growth vision. The non-adoption of middle management would be a substitute to the values of learning through team interaction. A top-down target setting process would be a substitute to the values of learning through information sharing. High-powered financial incentives without clear measurability would be a substitute to learning about customer value propositions. There are many examples like this.

AlphaCo, BetaCo and DeltaCo achieve to design performance management systems and not packages, because they review design choices for performance management practices about whether they conflict with vision, mission, values and customer value propositions. This study concludes that case studies design performance management systems and not packages, because systems support organizational learning better than packages.

4.3. Evidence for the growth stage contingency model

4.3.1. The growth objective as dominant contingent variable

Growth objective and performance management practices. The growth objective is the dominant contingent variable for performance management system design and use at AlphaCo, BetaCo and DeltaCo. Case studies' vision statements are explicit growth visions (chapter 4.1.1). Case studies consistently use three key success factors that further define their growth ambitions (chapter 4.1.2). The interaction between strategy and structure highlights case studies' overarching objective to grow in business and organization (chapter 4.1.3). Case studies pursue explicit, partly aggressive growth strategies and case studies' strategic objectives express their ambitions to grow (chapter 4.1.4).

Performance measurement and feedback practices support the implementation of case studies' growth objectives. Case studies' design choices for key performance measures to outline visions, key success factors and strategies emphasize their willingness to grow (chapter 4.1.5). BetaCo's and DeltaCo's strategic performance measurement systems explicitly reflect their growth strategies (chapter 4.1.5). Case studies' consistent use of challenging performance levels in operational target setting represents their growth visions in the short-term (chapter 4.1.6). The growth objective is the first and most relevant antecedent of case studies' efforts to proactively change performance management system design and use and the outcomes of change indicate case studies' ambitions for further growth (chapter 4.1.11).

Growth objective and stakeholders' interests. The growth objective aligns all stakeholders' interests at AlphaCo, BetaCo and DeltaCo (cf. Granlund & Taipaleenmäki, 2005, p. 49; Strauss, Nevries & Weber, 2013, pp. 155, 156, 159, 169). Founders, early investors and venture capitalists all aim at increasing company valuation. At BetaCo and DeltaCo, middle managers are incentivized with stock option plans (chapter 4.1.8). Both experienced and young, talented employees join case studies in order to grow their careers together with the company. This is the reason why case studies strongly emphasize non-financial rewards related to professional progress (chapter 4.1.8). Customers and suppliers can be reasonably assumed to be interested in growing organizations so that they can do more business with case studies.

Theoretical sampling. AlphaCo, BetaCo and DeltaCo are chosen as case studies, because they comply with the theoretical definition of entrepreneurial growth companies (chapter 2.4.3). The definition's first criterion is that case studies' key objective is to grow. It could be argued that the conclusion of this chapter are pre-determined given this criterion. However, the fact that case studies' have this growth ambition does not necessarily mean that the growth objective is the dominant contingent variable for performance management system design and use.

Conclusion. These results also corresponds to previous findings in the entrepreneurship literature (Barringer, Jones & Neubaum, 2005, p. 671; Hambrick & Crozier, 1985, p. 43, Kolvereid, 1992) as well as to predictions by life cycle theory (Churchill & Lewis, 1983, p. 40; Greiner, 1972, p.10; Miller & Friesen, 1984, p. 1163). Therefore, in line with the first component of the growth stage contingency model (chapter 2.6.1), this study concludes that the growth objective is the dominant contingent variable for performance management design and use in entrepreneurial growth companies.

4.3.2. Performance management system design and use

Research question. This study's research question is: How do entrepreneurial growth companies design and use their performance management systems? The cross case analysis provides empirical evidence to answer this question. By assuming a replication logic (Eisenhardt, 1989a, p. 542), in applying pattern matching as analytic technique (Yin, 2014, pp. 143, 240) and by triangulating evidence (Hopper & Hoque, 2006, p. 482; Yin, 2014, pp. 165-166), this study finds consistent patterns for performance management system design and use across AlphaCo, BetaCo and DeltaCo. This chapter provides an overview of the results of chapter 4.1 in comprehensive tabular displays, hence summarizes the evidences to answer the research question, and addresses the second component of the growth stage contingency model (chapter 2.6.2).

I Vision and mission. Ferreira & Otley's (2009, pp. 266-267) 12-questions performance management systems framework asks: "What is the vision and mission of the organization and how is this brought to the attention of managers and employees? What mechanisms, processes, and networks are used to convey the organization's overarching purposes and objectives to its members?" As summarized in table 31, chapter 4.1.1 finds consistent patterns for four performance management practices and two emerging themes.

Practice	Design	Use
Vision statement: <i>What is the vision statement?</i>	The vision statement is consistently to grow and become a relevant industry player. Short, tangible, compelling, customized. Communicated frequently. All stakeholders are aligned behind the growth vision.	The growth vision expands opportunity seeking by inspiring new value propositions, and focuses attention on known value propositions.
Mission statement: <i>What is the mission statement?</i>	Mission statement relates to a larger purpose and societal problem that the organization tries to solve. Still quite close to the problems solved by value propositions. Short, engaging, inspiring and easy to remember.	The mission expand opportunity seeking by motivating the development of new value propositions to progress towards the mission.
Organizational values system: <i>What are the organization's core values?</i>	Values system covers four main parts: performance, working as team, information sharing, and individual work mindset. Values demand both organizational learning modes from org. members. Organizational values are few, short, catchy. Decisions are explained with reference to values systems. Values are communicated frequently.	Performance values focus attention. Teamwork values expand opportunity seeking. Information sharing values expand opportunity seeking. Individual mindset values expand opportunity seeking and focus attention. Values systems are designed and used to create a learning culture.
Cultural education process: <i>How are employees educated about culture?</i>	Cultural education is an ongoing and extensive process. Involves several formal and informal practices. Practices change over the employee cycle. Important practices include recruiting process, onboarding process, interaction with founders, performance measurement and feedback practices, approaches to incentives, exit of employees.	The cultural education processes teaches and trains employees when opportunity seeking and learning is needed and when focus of attention and search is required. Cultural education develops and enforces the organization's learning culture.
Emerging theme - visibility of org. culture: <i>How is organizational culture made visible and tangible?</i>	Non-information-based, physical performance management practices make vision, mission, values, and customer value propositions visible and tangible to organizational participants. A relevant non-information-based practice is the office design.	Non-information-based practices expand opportunity seeking and focus attention, depending on what practice is made visible and tangible.
Emerging theme - value propositions: <i>Who are the customers and what are the value propositions to them?</i>	Value propositions relate to vision and mission, but are typically one of the earliest cultural practices. Customer focus is part of the organizational values system. The question of what customers value today and might value tomorrow is part of the organizational culture.	Value propositions expand opportunity seeking by inspiring new ideas for customers, and focus attention on known products that customers demand.

Tab. 31: Summary for vision and mission (chapter 4.1.1)

2 *Key success factors*. Ferreira & Otley's (2009, p. 267) 12-questions performance management systems framework asks: "What are the key factors that are believed to be central to the organization's overall future success and how are they brought to the attention of managers and employees?" As summarized in table 32, chapter 4.1.2 finds consistent patterns for two performance management practices.

Practice	Design	Use
Key success factors (KSF): <i>What are the organization's key success factors?</i>	Three consistent key success factors. Financial KSF for making revenue by delivering on known value propositions. Organizational KSF for building and professionalizing the organization and creating the performance management context. Product KSF for improving current products and developing future products. Key success factors have implications on the composition of founder teams.	Financial KSF focuses attention on generating revenues. Organizational KSF focuses attention on reliably delivering on known value propositions, and expands opportunity seeking by designing the performance management context. Product KSF focuses attention on incrementally improving current products and technologies, and expands opportunity seeking for new products.
Communication of KSF: <i>How are key success factors communicated?</i>	The communication of key success factors includes most of the practices used for cultural education process and strategic management process. Particularly relevant practices include company-wide meetings, strategy meetings, organizational objectives, key performance measures as well as informal interactions with founders.	The communication of KSF expands opportunity seeking and focuses attention, depending on what KSF and what aspect of this KSF is emphasized.

Tab. 32: Summary for key success factors (chapter 4.1.2)

3 *Organization structure*. Ferreira & Otley's (2009, p. 267) 12-questions performance management systems framework asks: "What is the organization structure and what impact does it have on the design and use of performance management systems? How does it influence and how is it influenced by the strategic management process?" As summarized in table 33, chapter 4.1.3 finds consistent patterns for four performance management practices.

Practice	Design	Use
Organizational design: <i>What is the organizational design?</i>	Functional organizational design that corresponds to key success factors: marketing and sales, operations and support functions, and product development and technology. Typically, three-layer hierarchy: founders and C-level executives, middle management, employees. Decision-making authority is centralized on founders, yet with increasing delegation to middle managers. Middle management level is in the process of being introduced.	Marketing and sales functions focus attention on generating revenues. Operations and support functions focus attention on delivering known value propositions by reliable processes, and expand opportunity seeking by creating the performance management system and supplying information. Product development and technology functions focus attention on current products, and expand opportunity seeking by developing new products.
Founders' roles and responsibilities: <i>What are founders' roles and responsibilities?</i>	Teams of three founders appears to be optimal. Roles include sales founder, operations founder, product founder. Three roles correspond to three key success factors and the high level structure of the organization. Competences, previous experiences, professional education and personalities are diverse and complement each other. Diversity in founders' perspectives results in creative conflict. Founders have to be able to switch quickly between opportunity seeking and learning, and focus of search and attention.	Sales founder focuses attention on generating revenues from current products, and to a lesser extent also expands opportunity seeking for new revenue streams. Operations founder focuses attention on delivering value propositions by reliable processes, and supports in expanding opportunity seeking by creating the performance management context. Product founder focuses attention on improving current products, and expands opportunity seeking by developing new products.
Middle managers roles and responsibilities: <i>What are middle managers' roles and responsibilities?</i>	Middle managers lead organizational functions. They complement the professional founders' competences. Middle managers are experienced but still ambitious. Early hires are for typically for growth supporting functions. In most cases middle managers are external hires. Most relevant hiring criteria are professional knowledge and cultural fit.	Middle managers' ideal profiles requires them to be able to focus attention on delivering current value propositions, and at the same time expand opportunity seeking for new ones. This required ability to perform both org. learning modes makes middle managers difficult to find.
Rules, procedures and policies: <i>What are relevant rules, procedures and policies?</i>	Rules, procedures and policies are simple, easy to remember, few, tailored to a specific user group and process. Rules, procedures and policies are audited, communicated and enforced. Rules, procedures and policies are reviewed regularly, iterated and evolve constantly.	Rules, procedures and policies are typically used to focus search and attention. The possibility of changing rules, procedures and policies supports unlearning and thus embodies opportunity seeking and learning.

Tab. 33: Summary for organization structure (chapter 4.1.3)

Chapter 4.1.3 also finds consistent patterns for the impact of organization structure on other performance management systems as well as for the interaction between structure and strategy. These findings are summarized in table 34.

<p>Influence of organization structure: <i>What impact does the organization structure have on the design and use of performance management practices?</i></p>	<p>The adoption of a functional organizational design and the establishment of a middle management level make necessary the introduction of practices for performance measurement, target setting, performance evaluation and rewarding. Key performance measures and organization structure show a bi-directional relationship: organization structure defines and is defined by KPIs. Middle management closes the loop of targets-action-feedback; founders control this loop by formalizing target setting and performance evaluation. Rewards are specifically designed for scaling units and middle managers; otherwise structure has less impact on rewarding practices. The functional organization and the middle management leads to the design of more horizontal information flows; main practices are meetings and information systems.</p> <p>The functional organizational design and the middle management require that performance measurement and feedback practices as well as information flows are increasingly used to focus attention on delivering known value propositions; use is increasingly diagnostically. At the same time the growing organization is not to lose its ability for opportunity seeking and learning; interactive use is to be maintained. The growing organization designs a balance between attention focus / diagnostic use and opportunity seeking / interactive use.</p>
<p>Structure-strategy interaction: <i>How does organization structure influence and how is it influenced by strategy?</i></p>	<p>Bi-directional relationship between organization structure and strategy. Structure follows strategy, as the growth strategy requires a functional organizational design with a middle management. Strategy formulation follows structure, as growth and middle management requires to design a strategic management process and as strategy needs to take into consideration organizational resources. Strategy implementation follows structure, as the functional organization requires the use of more formalized practices for performance measurement and feedback.</p>

Tab. 34: Summary for interactions of organization structure with other practices (chapter 4.1.3)

The investigation identifies four emergent themes for Ferreira & Otley's (2009) performance management system component of organization structure in chapter 4.1.3. These findings are summarized in table 35.

Practice	Design	Use
<p>Human resources function: <i>How are employees selected, socialized, culturally educated, trained and developed?</i></p>	<p>The human resources function is a growth supporting function responsible for selection (recruiting/ hiring), socialization (onboarding), ongoing cultural education as well as training and development of organizational members. Headed by middle managers, who typically report into the operations founder. Also administrates some practices of the performance management system, e.g. performance reviews.</p>	<p>The human resources function selects, socializes and trains the organizational members so that they are able and willing for opportunity seeking in line with vision, mission, values and value propositions, and/or focusing attention on the specific task and problem at hand. Some employees, such as middle managers, need to be able to do opportunity seeking and attention focus, while others can specialize in one.</p>
<p>Finance and business intelligence functions: <i>How is the organization provided with performance information?</i></p> <p>Business specific growth supporting functions: <i>What are the organization's business specific growth supporting functions?</i></p>	<p>The finance and business intelligence functions are growth supporting functions responsibly for the supply of the organization with timely and reliable financial and non-financial information. Headed by middle managers, who typically report into the operations founder.</p> <p>Business specific growth supporting functions are used in areas where learning about business model and growth strategy is most crucial and cannot be fully delivered by other functions. These functions collect, structure, analyze, audit and store business knowledge, make knowledge explicit and then distribute knowledge to the organization.</p>	<p>The finance and business intelligence functions supply the organization with financial and non-financial information, which is the basis for both expanding opportunity seeking and focusing attention.</p> <p>Business specific growth supporting functions go from expanding opportunity seeking to focusing attention on certain topics on behalf of other functions. However, typically these functions specialize in opportunity seeking.</p>
<p>Office design: <i>How is the office used as a non-information-based performance management practice?</i></p>	<p>The office design is used to educate employees about organizational culture, to reflect organization structure, to reward for being member of the company, and to facilitate both deliberate and accidental communication and information flows. Office design is the most relevant non-information-based, physical performance management practice.</p>	<p>The office design can contribute to both opportunity seeking and focusing attention.</p>

Tab. 35: Summary for emergent themes in organization structure (chapter 4.1.3)

4 *Strategies and plans*. Ferreira & Otley's (2009, p. 267) 12-questions performance management systems framework asks: "What strategies and plans has the organization adopted and what are the processes and activities that it has decided will be required for it to ensure its success? How are strategies and plans adapted, generated and communicated to managers and employees?" As summarized in table 36, chapter 4.1.4 finds consistent patterns for five performance management practices.

Practice	Design	Use
Strategy: <i>What is the strategy?</i>	Derived from the growth vision clear commitment to the growth strategy. All stakeholders are aligned on the growth strategy. Management of strategy as perspective, pattern, position and plan. Strategy as perspective is particularly stable. Strategy as plan is increasingly used.	Strategy as perspective and pattern are used particularly strong and support opportunity seeking and learning. Strategy as position and plan support to focus attention. Focusing attention by developing strategy as plan is increasingly emphasized.
Strategic business plan: <i>What is the strategic business plan?</i>	Strategic business plan documents key aspects of organization's businesses. Comprehensive document used for several communicative purposes. The strategic business plan is to be validated by the financial business plan. Preparation is ad-hoc, quarterly or bi-annual by founders and executives. The strategic business plan is developed during strategic management process.	Strategic business plan, especially when associated with the strategic management process, is a practices for both opportunity seeking and focusing attention on a high level. It is the document outlining opportunity seeking and it creates cognitive models to focus attention.
Financial business plan: <i>What is the financial business plan?</i>	Financial business plan is the core document for financial leadership. It defines minimum necessary and maximum possible financial performance. Focus is on P&L and cash flow. Financial planning is based on non-financial performance indicators. Planning horizon typically 1-5 years. Monthly preparation and review by founders and Head of Finance.	Financial business plan is typically used to focus attention on activities that are essential to the organization's financial health. Financial business plan can also expand opportunity seeking, especially when outcomes deviate from expectations.
Strategic management process: <i>How is the strategy formulated, reviewed, adapted and communicated?</i>	Strategic management process is regular, either quarterly or bi-annual. Dedicates time for reflecting about strategic objectives and strategy, often 1-2 days. Allows to distinguish strategy formulation and strategy implementation. Middle management is intensely involved. Founders set preliminary strategic objectives top-down, middle management elaborate strategy bottom-up.	Strategic management process is used to expand opportunity seeking and learning by providing dedicated time to adapt organizational objectives and by involving middle management's knowledge and function-specific information. Strategic management process allows to alternate between opportunity seeking during strategy meetings and focusing attention on defined strategic objectives.
Organizational processes: <i>What are the core organizational processes?</i>	Three categories of org. processes: strategic-singular, strategic-recurring and operational processes. Processes can and should switch levels between these three categories. The three categories are associated with different designs of performance management practices. These designs are required to correspond to intended use.	Strategic-singular processes expand opportunity seeking and learning. Strategic-recurring processes balance opportunity seeking and focusing attention. Operational processes focus search and preserve attention.

Tab. 36: Summary for strategies and plans (chapter 4.1.4)

The investigation identifies three emerging themes for Ferreira & Otley's (2009) performance management system component of strategies and plans in chapter 4.1.4. These findings are summarized in table 37.

Practice	Design	Use
Strategic objectives: <i>What are the strategic objectives?</i>	Strategic objectives link back to mission, vision, key success factors, and often value propositions. Are specific, precise short, easy to remember, not too many. Are measurable and typically include a KPI. Initiate strategy formulation top-down. Guide strategy implementation and especially operational target setting. Cover all relevant performance perspectives. Typically have a time horizon of about 1-3 years.	Strategic objectives expand opportunity seeking by stating strategy from various perspectives and consolidating all available knowledge and information. Strategic objectives focus attention by operationalizing vision, mission and key success factors, by relating to value propositions, by being measurable and allow the organization to focus its attention on them as soon as they are formulated.
Value propositions as part of strategy: <i>What are the value propositions?</i>	Value propositions describe what customers value and pay for. Are derived and inspired from mission and vision (in the growth stage). Interact with key success factors, strategic objectives and operational targets. Can be understood immediately, can be measured and constantly tested. Are conceptualized as organizational objectives: existing value propositions can be improved and new value propositions can be learnt.	Value propositions as the quest for customer value expand opportunity seeking and learning about existing value propositions and especially about new value propositions to new customer groups. Value propositions as a defined statement and practice focuses search and attention to reliably deliver to paying customers.
Scaling unit: <i>What is the organization's scaling unit?</i>	The scaling unit delivers the existing value proposition to customers. Scaling units apply largely standardized organizational knowledge, which is often explicated in a playbook. Scaling units require business specific growth supporting functions as counterparts. The scaling unit can be duplicated to further customer groups, markets and product groups. The duplication allows for growing rapidly and is typically the core of the growth strategy.	The scaling unit focuses its employees' search and attention on delivering known value propositions to known customer groups. Only small improvements in learning curves and efficiency are intended: scaling units specialize in learning to become better in what the organization already knows. Opportunity seeking and learning about improving value propositions or developing new ones is done by business specific growth supporting functions.

Tab. 37: Summary for emerging themes in strategies and plans (chapter 4.1.4)

5 *Key performance measures*. Ferreira & Otley's (2009, p. 267) 12-questions performance management systems framework asks: "What are the organization's key performance measures deriving from its objectives, key success factors, and strategies and plans? How are these specified and communicated and what role do they play in performance evaluation? Are there significant omissions?" As summarized in table 38, chapter 4.1.5 finds consistent patterns for four aspects of performance measurement as well as for one emerging theme.

Practice	Design	Use
KPIs: <i>What are the key performance measures?</i>	Three types of KPIs with different use. Strategic KPIs for learning about vision, key success factors and strategy. Strategic KPIs relate often to strategic-singular processes. Growth KPIs for aligning growth strategies and operations; non-financial growth KPIs relate specifically to business models and growth strategies. Growth KPIs relate mostly to strategic-recurring KPIs. Ops KPIs for measuring and monitoring operational processes; ops KPIs are typically non-financial. Ops KPIs relate usually to operational processes.	Strategic KPIs are used interactively with reference to vision, key success factors and strategy. Growth KPIs, especially non-financial growth KPIs, are used both interactively and diagnostically to learn about growth strategies and control strategy implementation. Ops KPIs are used diagnostically to monitor standardized processes.
Performance evaluation: <i>What is the role of KPIs in performance evaluation processes?</i>	Strategic KPIs imply subjective performance evaluation of the whole company. Growth KPIs imply subjective performance evaluations, typically of organizational functions. Ops KPIs imply objective, partly formulaic performance evaluations, often on the employee level. Performance measurement does not necessarily imply performance evaluation.	KPIs used in subjective performance evaluations are associated with interactive use, but allow also for diagnostic use. KPIs used in objective performance evaluation processes imply diagnostic use.
KPI omissions: <i>Are essential KPIs omitted?</i>	Rather over-measurement than omission due to digital business models. Challenges to identify the right KPIs, to integrate KPIs into a system, to review and adapt measurement system, and to link KPIs to organization structure.	No omission of KPIs. Challenge is to be clear about the appropriate use, diagnostic and/or interactive use, for already measured KPIs.
Strategic performance measurement system: <i>What is the organization's strategic performance measurement system?</i>	SPMS integrate mainly strategic and ops KPIs with a focus on non-financial KPIs. Integrations can be circular (e.g. "DeltaCo Growth Cycle") or processual (e.g. "BetaCo Strategic KPI System"). SPMS assume linkages between KPIs of several performance areas. SPMS determine and are determined by organizational design. SPMS are the basis for the growth strategy. SPMS require a dedicated report, which is provided by growth supporting functions, as well as a regular meeting.	SPMS are cognitive models for learning; at the same time SPMS allow for founders' control over the organization. SPMS are used interactively by providing feedback and facilitating learning about core performance areas of business model and growth strategy. SPMS are used diagnostically by controlling implementation and execution of the growth strategy by the organization.
Emerging theme - KPIs and culture: <i>What is the role of KPIs in organizational culture?</i>	Performance measurement is part of founders' understanding of entrepreneurship as well as of organizational values systems. Culturally used KPIs address all stakeholders. About-us KPIs outline what the company is working on. Vision KPIs outline where the company is heading. Value proposition KPIs measure what customers need and value.	Key performance measures are part of organization's learning culture. 'About-us KPIs', 'vision KPIs' and 'value proposition KPIs' are typically used interactively.

Tab. 38: Summary for key performance measures (chapter 4.1.5)

6 *Target setting*. Ferreira & Otley's (2009, p. 267) 12-questions performance management systems framework asks: "What level of performance does the organization need to achieve for each of its key performance measures (identified in the above question), how does it go about setting appropriate performance targets for them, and how challenging are those performance targets?" As summarized in table 39, chapter 4.1.6 finds consistent patterns for two aspects of target setting and three emerging themes.

Practice	Design	Use
Targets: <i>What are the organization's operational targets?</i>	Targets are set for financial and non-financial KPIs as well as in the form of qualitative statements. Time horizons are typically short. Performance levels are challenging. Targets motivate, coordinate and support in the allocation of org. resources.	Targets are used mainly interactively, yet are increasingly used diagnostically due to the formalization of the target setting process. Targets in scaling units and for operational processes are largely used diagnostically.
Operational target setting process: <i>How does the organization set targets?</i>	Operational target setting processes are participative and employees are strongly involved. The process is formalized. Time horizons are rather short, but in the process of being lengthened. The target setting cycle's three steps are separated in dedicated meetings: (1) setting targets, (2) reviewing progress towards targets, and (3) evaluating outcomes versus targets.	As long as the three target setting steps are not separated, use of target setting is interactive. The separation of the three steps and adoption of dedicated meetings results in balanced use: target setting and evaluating performance outcomes use target setting interactively, while the reviewing of progress towards pre-defined targets supports diagnostic use.
Emerging theme - goals and roles: <i>When to use goals and when to use roles?</i>	Goals and roles can be complements, when goals fit to roles. Goals and roles can be substitutes, when they conflict. Roles evolve from recurring goals. Goals are more adaptable, flexible, 'agile' than roles and work well for new activities. Roles are more stable than goals and work well for known and recurring activities.	Goals can be used interactively as well as diagnostically, while strict roles are typically associated with focusing attention. Combination of broad roles with short operational target setting cycles.
Emerging theme - target setting and culture: <i>What role does target setting play in org. culture?</i>	Target setting design is an expression of organizational culture. Operational targets represent vision and mission in daily activities. Values systems demand for focus in number of targets, challenging performance levels as well as a participative, transparent target setting process.	Organizational culture and values systems aim to find a balance between opportunity seeking and attention focus. This balance is reflected in the interactive and diagnostic use of target setting.
Emerging theme - OKRs: <i>How do OKRs set operational targets?</i>	OKRs separate targets into two elements, the inspiring objective and the measurable key result. OKRs come with seven principles for setting targets and designing the target setting process (OKR cycle). The seven principles enforce organizational culture.	OKRs suggest a target setting design that achieves a balance between interactive and diagnostic use.

Tab. 39: Summary for target setting (chapter 4.1.6)

7 *Performance evaluation*. Ferreira & Otley's (2009, p. 267) 12-questions performance management systems framework asks: "What processes, if any, does the organization follow for evaluating individual, group, and organizational performance? Are performance evaluations primarily objective, subjective or mixed and how important are formal and informal information and controls in these processes?" As summarized in table 40, chapter 4.1.7 finds consistent patterns for performance evaluation, which is applied on the employee, functional and company level.

Practice	Design	Use
Performance evaluation: <i>How does the organization evaluate performance on the employee, functional and company level?</i>	<p>Performance evaluation processes are designed differently for different organizational levels.</p> <p>Employee level: formalized, partly objective performance evaluations with quite stable performance dimensions.</p> <p>Functional level: increasingly formalized, mostly subjective performance evaluations with increasingly stable performance dimensions.</p> <p>Company level: subjective performance evaluations with broad and mostly stable performance dimensions. In scaling units objective, formulaic evaluation with direct link to reward systems on the employee level.</p>	<p>Subjective performance evaluation involves intense evaluations and allows for both interactive and diagnostic use, yet typically implies interactive use. Objective performance evaluation avoids intense evaluation and implies diagnostic use. Interactive and/or diagnostic use on employee level. Diagnostic use for employees in scaling units. Increasingly balanced use on functional level. Interactive use on company level.</p>

Tab. 40: Summary for performance evaluation (chapter 4.1.7)

8 *Reward systems*. Ferreira & Otley's (2009, p. 267) 12-questions performance management systems framework asks: "What rewards – financial and/or non-financial – will managers and other employees gain by achieving performance targets or other assessed aspects of performance (or, conversely, what penalties will they suffer by failing to achieve them)?" As summarized in table 41, chapter 4.1.8 finds consistent patterns for rewards and penalties as well as one emerging theme.

Practice	Design	Use
Incentives: <i>What rewards and penalties can employees gain by achieving performance targets?</i>	<p>Financial rewards are used carefully. Bonuses are not used or abolished. Scaling units use financial rewards. Non-financial rewards and especially non-financial group rewards are emphasized. Formal penalties are avoided. Informal, short-term penalties are used. Incentives are mainly allocated based on subjective performance evaluations. Financial rewards and formal, long-term penalties are rather based on objective, formal performance evaluations. Incentives are effective for both short-term and long-term. Incentives are used mostly for motivating, attracting and retaining purposes.</p> <p>Financial rewards include: stock options, skill-based salary, promotion, bonus. Non-financial group rewards include: working with great team, office design, social events. Non-financial rewards include: autonomy, responsibility, nice titles, fast career, training, development, recognition, public praise. Formal penalties include: no salary increase, no bonus, official warning, loss of job. Informal penalties include: interference, no praise or recognition, unimportant assignments.</p>	<p>Rewards and penalties are structured to support both interactive and diagnostic use of performance management practices. Financial rewards and penalties tend to support diagnostic use / focus of attention. Non-financial rewards and especially non-financial group rewards support interactive use / opportunity seeking.</p>
Emerging theme - incentives and culture: <i>What role do incentives play in organizational culture?</i>	<p>The structure of incentives reflects the organizational values system. Values for learning about desired performance relate to financial rewards and formal penalties. Values for teamwork and information sharing relate to non-financial group rewards. Values for learning through individual mindset relate to non-financial rewards and informal penalties on employee level.</p>	<p>Incentive structure, organizational values system and the use of performance management practices correspond to each other.</p>

Tab. 41: Summary for reward systems (chapter 4.1.8)

9 *Information flows, systems and networks*. Ferreira & Otley's (2009, p. 267) 12-questions performance management systems framework asks: "What specific information flows – feedback and feedforward –, systems and networks has the organization in place to support the operation of its performance management systems?" As summarized in table 42, chapter 4.1.9 finds consistent patterns for four performance management practices.

Practice	Design	Use
Information flows: <i>What information flows has the organization in place to support its performance management system?</i>	Feedback and feedforward information flows are purposefully designed. Corresponding to values systems, information flows freely through the organization. Most practices require both types of information flows. Growth supporting functions assume an essential role in facilitating information flows.	Feedback information flows are associated with diagnostic use of performance information and focus of attention. Feedforward information flows are associated with interactive use and opportunity seeking.
Information systems: <i>What information systems has the organization introduced?</i>	Information systems are adopted early. Relevant applications include: information systems and technology developed for business operations and the value chain; information systems for collaboration among employees; and information systems required by support functions. The professionalization of support functions is associated with the introduction of information systems.	Information systems pre-define and structure knowledge, information and information flows and are thus typically associated with diagnostic use / attention focus. However, the information provided is also the basis for interactive use / opportunity seeking.
Meetings: <i>What regular meetings has the organization scheduled?</i>	Regular meetings typically take place in short frequencies, often weekly. Meetings involve many participants, involve the middle management, and have catchy names. Meetings evolve from 'multi-purpose' meetings to meetings with specifically defined purposes along performance management practices. Meeting types include: founders meeting, founders and middle managers meeting, leadership team meeting, company-wide meeting, strategic management meeting, board of directors, target setting meeting, performance evaluation meeting, knowledge exchange session, team meeting, cross teams meeting.	Most meetings create both vertical and horizontal information flows. Vertical and top-down information flows are associated with diagnostic use of performance information / focus of attention. Horizontal and bottom-up information flows are associated with interactive use / opportunity seeking. Meetings are a key requirement for the interactive use of information in face-to-face discussion and debate across organizational levels.
Informal communication: <i>How is informal communication initiated?</i>	Formal practices are designed to initiate informal communication. The most relevant formal practices to induce informal communication include the office design, social events, late work catering (non-financial group rewards). Formal practices that create informal communication often bear reference to organizational culture.	Informal communication allows to discuss problems in a freer, more open, less hierarchical situation with less performance pressure and lower risk of penalties. Therefore, informal communication is typically associated with interactive use and opportunity seeking and learning.

Tab. 42: Summary for information flows, systems and networks (chapter 4.1.9)

10 Performance management system use. Ferreira & Otley's (2009, p. 267) 12-questions performance management systems framework asks: "What type of use is made of information and of the various control mechanisms in place? Can these uses be characterized in terms of various typologies in the literature? How do controls and their uses differ at different hierarchical levels?" As summarized in table 43, the analysis in chapter 4.1.10 finds consistent patterns for the use of performance measurement and feedback practices.

Practice	Use of performance management practices
Key performance measures: <i>How are KPIs used?</i>	Interactive use of financial and non-financial (strategic) KPIs on strategic planning level. Interactive and diagnostic use of financial and non-financial (growth) KPIs on management control level and for strategic-recurring processes. Diagnostic use of non-financial (ops) KPIs on operational control level and for operational processes. Strategic performance measurement system introduces more diagnostic use and intends to balance interactive and diagnostic use.
Target setting: <i>How is target setting used?</i>	Interactive and diagnostic use of the operational target setting process. Interactive use when targets are set and when outcomes are evaluated versus targets. Diagnostic use when progress is monitored, measured and reviewed and deviations are corrected in-between target setting cycles.
Performance evaluation: <i>How is performance evaluation used?</i>	Subjective performance evaluation and informal situational feedback implies interactive use for the larger part, but provides choices in use of performance information. Objective, formulaic performance evaluation results in diagnostic use.
Reward systems: <i>How do rewards and penalties support intended use?</i>	Financial rewards as well as formal and informal penalties support diagnostic use. Non-financial rewards and especially non-financial group rewards support interactive use.

Tab. 43: Summary for performance management system use (chapter 4.1.10)

11 Performance management system change. Ferreira & Otley's (2009, p. 267) 12-questions performance management systems framework asks: "How have the performance management systems altered in the light of the change dynamics of the organization and its environment? Have the changes in performance management systems design or use been made in a proactive or reactive manner?" As summarized in table 44, the analysis in chapter 4.1.11 finds consistent patterns for antecedents, outcomes, and proactiveness of change as well as change in use.

Antecedents: <i>What are the antecedents of change?</i>	The most significant antecedent is the growth vision. All change is induced by the objective to grow. Further relevant antecedents include: growth strategy, organizational growth, middle management, growth supporting functions and founders' management experience. Middle management and growth supporting functions are both antecedents and outcomes of change.
Outcomes: <i>What are the outcomes of change?</i>	Outcomes of change relate to all performance management practices. Only organizational culture and key success factors are stable and are not significantly adapted. All other practices of the performance management system are proactively changed, i.e. either newly adopted or re-designed.
Proactive vs. reactive change: <i>Are changes made in a proactive or reactive manner?</i>	The performance management system is changed proactively and overall systematically. Reasons for proactiveness include: growth objective, diversity and experience of founder team, operations founder, founders' access to management knowledge, specialized middle managers, professionalization of growth supporting functions.
Change in use: <i>How does performance management system use evolve?</i>	The use of performance management practices evolves from opportunity seeking / interactive use to selectively introducing more attention focus / diagnostic use. Change in use aims at a balance of opportunity seeking and attention focus / interactive use and diagnostic use. Change in intended use results in change in performance management system design.

Tab. 44: Summary for performance management system change (chapter 4.1.11)

12 Strength and coherence. Ferreira & Otley's (2009, p. 267) 12-questions performance management systems framework asks: "How strong and coherent are the links between the components of performance management systems and the ways in which they are used (as denoted by the above 11 questions)?" The analysis in chapter 4.1.12 finds consistent patterns for Chenhall's (2003, p. 136) six criteria, for Ferreira & Otley's (200) theoretically developed interdependencies between performance management practices as well as for case studies' design of performance management systems instead of packages. Findings are summarized in table 45.

Chenhall's criteria: <i>Which of Chenhall's criteria for strength and coherence are met?</i>	For strength and coherence of the performance management system it is essential: to consider the perspectives of multiple stakeholders; to measure efficiency, effectiveness and equity; to capture financial and non-financial performance outcomes; to establish vertical links between strategy and operations; and to establish horizontal links across the value chain. Explicit practices for the provision of information on the external environment are not observed.
Interdependencies: <i>What links are considered? Are interdependencies designed as complements or substitutes?</i>	Interdependencies are highly relevant for the strength and coherence of the performance management system. Ferreira & Otley's (2009) 18 key links as well as the interdependencies between performance management system components and information flows, systems and networks are designed as complements. Substitutes are avoided. Information systems and information networks are developed along the adoption and re-design of performance management practices.
System vs. package: <i>Is a system designed or a package?</i>	Performance management systems deliver better outcomes than packages. Systems are created by taking interdependencies into account and by designing practices as complements. Internal consistency is achieved due to emphasis on the learning culture as primary control mode. All practices are oriented towards the learning culture and contradictions are avoided by design. Further reasons for system design are founders' experience, the concept of scaling units as well as the sequential adoption and simultaneous designing of performance management practices.

Tab. 45: Summary for strength and coherence (chapter 4.1.12)

Conclusion. Tables 31 to 45 provide a summary of this study's findings. More details are provided in the individual sections of chapter 4.1 as well as respective appendices B1 to B12. Overall, the patterns across AlphaCo, BetaCo and DeltaCo are remarkably consistent. Case studies significantly differ with respect to their industries, business models, venture capital firms and founder teams' backgrounds. For this reason, the similarities in case studies' problems of managing performance in the growth stage as well as the consistency in solutions by specific performance management systems design and use were not expected. The evidence for such consistency might be explainable with case studies' intend to optimize for organizational learning.

4.3.3. Performance management systems and organizational learning

Theoretical proposition. This study's theoretical proposition is: Entrepreneurial growth companies design and use their performance management systems to facilitate organizational learning processes and to balance single loop and double loop learning. As per this study's analytic strategy (Yin, 2014, pp. 132-142), the cross case analysis relies on following this theoretical proposition through the empirical evidence. The analyses and results in chapter 4.2

support the theoretical proposition. AlphaCo, BetaCo and DeltaCo design and use their performance management systems to facilitate organizational learning processes, to introduce single loop learning, and to balance single loop learning and double loop learning.

Organizational learning processes. AlphaCo, BetaCo and DeltaCo choose performance management system designs that facilitate organizational learning processes as per Huber's (1991, pp. 89-90) criteria. Case studies design performance management practices in order to facilitate the acquisition of useful knowledge and information by a broad range of organizational functions; to optimize for the distribution of relevant knowledge and information across the organization; to create more and more varied interpretations of information as well as promote the development of common interpretations of information; and to support their organizations' memory. Generally, case studies design practices in order to broaden the four organizational learning processes. Yet in their scaling units AlphaCo and DeltaCo design practices specifically to focus and narrow organizational learning processes.

Organizational learning modes and stages of knowledge. Organizational learning modes, stages of knowledge and early life cycle stages correspond to each other. When case studies were in their startup stages, double loop learning was required to recognize and advance a "good prototype" (stage 1, Garvin, 1993, p. 84), and to identify sound value propositions to customers. This necessity of double loop learning (Argyris & Schön, 1978, p. 29) corresponds to Penrose's (1959, pp. 34-35) "entrepreneurial competence" and "exploration" in March's (1991) organizational learning theory.

As entrepreneurial growth companies, case studies are more advanced in their stages of knowledge, at least for some parts of their organizations. Some key attributes of their value creation become measurable, and processes become "repeatable" and "mechanized" (stages 4, 5 and 6, Garvin, 1993, p. 84). Introducing and increasing single loop learning is necessary to reliably deliver products and value propositions to paying customers. This necessity of single loop learning (Argyris & Schön, 1978, p. 29) reflects Penrose's (1959, pp. 34-35) "managerial competence" and "exploitation" in March's (1991) organizational learning theory.

Yet entrepreneurial growth companies still grow. Despite the need to introduce single loop learning, they still need to maintain their ability for double loop learning. Known value propositions need to be transferred to new situations and circumstances. Known value propositions need to be improved and extended. New and unknown value propositions for new customer groups need to be developed and tested. As elaborated throughout chapter 4.2, entrepreneurial growth companies' performance management systems need to manage different stages of knowledge within the same organization. This necessity of balancing single loop and double loop learning (Argyris & Schön, 1978, p. 29) reflects Penrose's (1959, pp. 7, 34-35; 1960, p. 1) proposition that growth requires both entrepreneurial and managerial competences.

This necessary balance also reflects the balance between exploration and exploitation proposed by March (1991).

Conclusion. This chapter provides an overview of results in chapter 4.2 and addresses the interaction between the second and the third component of the growth stage contingency model (see chapters 2.6.2 and 2.6.3). The evidence supports the theoretical proposition. Entrepreneurial growth companies design and use their performance management systems to facilitate organizational learning processes, to introduce more single loop learning, and to balance single loop and double loop learning in order to achieve their growth objectives. This central interaction between performance management system design and use, organizational learning processes, organizational learning modes and stages of knowledge is further discussed in chapters 5.2 to 5.7.

4.3.4. Organizational learning and growth

Assumed relationship based on literature. The fourth component of the growth stage contingency model is revenue growth as the most relevant parameter of organizational effectiveness in a growth context. This study does not aim at finding evidence for the relationship between organizational learning and growth. As outlined in chapter 2.6.3, this relationship is theoretically assumed and refers to established theories provided by Penrose (1959, 1960), Wernerfelt (1984), March (1991), and organizational ambidexterity research (Gibson & Birkinshaw, 2004; Raisch & Birkinshaw, 2008; Raisch, 2008). In addition, Macpherson & Holt's (2007) extensive literature review provides systematic evidence that new venture growth is essentially driven by organizational learning.

Learning and growth at case studies. AlphaCo, BetaCo and DeltaCo organize their performance management systems in line with these theories. Case studies' founders and middle managers clearly hold the assumption of a positive relationship between organizational learning and growth. Founders and middle managers understand they cannot manage growth *directly*. Yet they can manage organizational learning by the purposeful design and use of their performance management systems and thereby manage growth *indirectly*. Case studies organize for learning in order to create growth. With this principle in mind case studies are able to design performance management systems in contrast to packages. Corresponding to previous studies (see discussion in chapter 2.2.7), findings suggest that performance management *systems* support organizational learning – and therefore growth – more effectively than *packages*. Case studies design systems by explicitly establishing learning cultures as their primary mode of control (Sandelin, 2008, p. 338). Secondary modes of control should be aligned with and must not contradict that primary mode of control. Case studies supreme objective is growth. Growth is driven by learning. Therefore, case studies design and use their performance management systems to facilitate organizational learning in order to achieve growth.

Evidence for the theoretical model. Chapter 2.6 and figure 9 outline the growth stage contingency model corresponding to Otley's (1980) minimum necessary contingency framework. The growth objective impacts performance management system design and use, which in turn impacts growth through organizational learning. In conducting in-depth investigations into three entrepreneurial growth companies, this study finds positive evidence for the growth stage contingency model.

Case studies' key objective to grow in business and organization, which is evident in several performance management practices, is the starting point for performance management system design and use as well its evolution and proactive change (chapter 4.3.1). Due to growth as their key objective, case studies' dominant control problem is organizational learning. Organizational learning is the intervening variable of the growth stage contingency model. Case studies choose a specific performance management system design and use over other possible control configurations in order to facilitate organizational learning processes and balance organizational learning modes (chapters 4.3.2 and 4.3.3). The design of performance management practices to facilitate organizational learning processes and modes correspond to case studies' stages of knowledge in different areas of their businesses.

Analytical generalization. This study puts effort into ensuring its external validity, as elaborated in chapter 3.5. The study uses a multiple case studies approach and investigates three case studies. These case firms are theoretically sampled (see chapter 3.4.2) according to the definition of entrepreneurial growth companies outlined in chapter 2.4.3. The empirical evidence consistently supports the theoretical proposition and the growth stage contingency model. It is, therefore, suggested that this study's results can be analytically generalized to the domain of entrepreneurial growth companies.

5. Discussion

5.1. Rival theoretical explanations

High quality case study research should address its most important rival explanations (Yin, 2014, p. 168). This chapter examines whether agency theory, decision-making, contingency theory and life cycle theory might be rival theoretical explanations to organizational learning in explaining performance management system design and use in the growth stage.

Selection of rival explanations. In the literature review (chapter 2.7.2, table 10), the theories are listed that are used by studies on management control in the growth stage. It is reasonable to assume that these theories used might qualify as the best rival theoretical explanations. The most relevant theories in these papers are agency theory (Baiman, 1990; Eisenhardt, 1989b; Jensen & Meckling, 1976), contingency theory (Chenhall, 2003; Otley, 1980), and life cycle theory (Churchill & Lewis, 1983; Greiner, 1972; Kazanjian & Drazin, 1990; Miller & Friesen 1983, 1984). In addition to these three theories, several papers refer to information processing for decision-making purposes as a theoretical reason for management control system adoption in the growth stage (Dávila, Foster & Jia, 2015, pp. 207-209; Dávila, Foster & Jia, 2010, p. 82; Dávila & Foster, 2005, p. 1043). Hence the purpose of decision-making (Malmi & Brown, 2008, pp. 290-291; Zimmerman, 2001) is considered as a possible rival explanation as well.

Contingency theory. Contingency theory itself provides no explanations. Rather, empirical research builds theoretical explanations of contingent variables and their implications for management control. In the literature review, only two studies, Dávila (2005) and Sandino (2007), examine contingent variables in the context of growth companies. Both papers highlight relevant contingent variables for management control system adoption, but do not provide theoretical explanations for performance management system design and use. Overall, contingency theory has not accumulated enough findings to explain performance management system design and use in the growth stage.

Agency theory. Agency theory and its core assumptions of self-interested and risk-averse agents, conflicts of interests, information asymmetry, and moral hazard (Eisenhardt, 1989b, p. 59) have strong explanatory power. Agency theory can explain several of case studies' design choices. However, three relevant design choices are not explained by agency theory.

First, agency theory does not provide an explanation for the design of organizational processes and their categorization into strategic-singular, strategic-recurring and operational processes. Organizational processes' design does not mitigate conflicts of interests, does not decrease information asymmetries and does not avoid moral hazard. Second, strategic management processes and operational target setting processes might be explained by the intention to decrease information asymmetries. However, none of agency theory's assumptions explains

why employees and especially middle managers are so involved and have so much influence on procedures, contents and results of these two processes. Conflicts of interests and moral hazard might be rather exacerbated due to involvement. Agency theory might rather predict top-down target setting from founders (principles) to middle managers and employees (agents). Third, agency theory provides conflicting explanations for case studies' consistent emphasis on non-financial group rewards and the non-use of variable financial rewards in most organizational functions except of scaling units. On the one hand, such incentive structures could be explained by low task programmability and low outcome measurability in these organizational functions. On the other hand, agency theory might suggest free-riding due to such team incentives as well as moral hazard due to the absence of individual variable financial incentives, which could align company interest with agents' interests.

Decision-making. Although 'decision-making' is a concept hard to pin down, several of case studies performance management practices designs can be explained by the intention to support information processing for decision-making of founders, middle managers and employees. However, decision-making might not be able to explain three relevant design choices.

First, values might be used to guide and improve the many individual, often unmonitored, sometimes hidden, small and large decisions organizational participants make on behalf of their organizations. Decision-making can thus explain the adoption of values systems. However, decision-making cannot explain case studies' four categories of organizational values. Also, the substance of organizational values themselves hardly links back to decision-making processes: Values such as AlphaCo's "peak performance", BetaCo's "we burn for team success", or DeltaCo's "we value uniqueness and contribution" are unrelated to decision-making purposes. Second, operational processes and essential parts of scaling units can be characterized by the factual absence of decision-making by employees. Third, on a conceptual level most management control practices assist in decision-making and have a control aspect; there are hardly practices for the purpose of decision-making only (Malmi & Brown, 2008, pp. 290-291). For this reason, it is difficult to disentangle pure decision-making from other purposes. Decision-making is an explanation for the design of practices; however, it is typically not the only explanation. All papers on management control in the growth stage, which provide decision-making as an explanation, also refer to further theoretical explanations such as agency theory (Dávila & Foster, 2007, p. 909) and life cycle theory (Dávila, Foster & Jia, 2015, p. 208; Dávila, Foster & Jia, 2010, p. 80).

Life cycle theory. Several papers (e.g. Moores & Yuen, 2001; Su, Baird & Schoch, 2015) as well as this study use life cycle theory to define the objects of investigation – to distinguish entrepreneurial growth companies from startups and mature companies. Papers on life cycle theory make useful predictions on the design of performance management practices. However,

especially four of case studies' design choices are not predicted by life cycle theory (see table 5 in chapter 2.4.2).

First, life cycle theory does not make any predictions on organizational cultures and can thus not explain case studies' emphasis on growth visions and organizational values systems. Second, life cycle theory does not investigate organizational processes specifically. Third, statements on performance evaluation processes cannot be found in life cycle theory papers. Finally, while the use of incentives is a relevant matter in life cycle theory, the specific designs of non-financial group rewards is neither predicted nor explained.

Life cycle theory approaches life cycle stages qualitatively with rich descriptions (Churchill & Lewis, 1983; Greiner, 1972) and quantitatively (Kazanjian & Drazin, 1990; Miller & Friesen, 1983, 1984). From these analyses life cycle theory derives predictions on the design of a diverse set of managerial practices. However, these papers fall short, at least to some extent, in providing theoretical explanations for the design of management practices. It seems that papers about life cycle theory tend to make predictions with insufficient theoretical explanations. It might be for this reason that Dávila (2005, p. 225) names them "experience-based models".

	Agency theory	Decision-making	Life cycle theory
Emphasis on growth vision	Yes	Yes	No
Design of org. values system	Yes	No	No
Participative strategic mgmt. process	No	Yes	Yes
Design of organizational processes	No	No	No
Design and use of scaling units	Yes	No	Yes
Participative target setting process	No	Yes	Yes
Objective & subjective perf. evaluation	Yes	Yes	No
Emphasis of non-financial group rewards	No	Yes	No
No use of bonuses except in scaling units	No	Yes	No

Tab. 46: Rival theoretical explanations for performance management system design

Conclusion. Overall, the analysis of rival explanations suggests that organizational learning theory might have more explanatory than agency theory and life cycle theory. Table 46 lists performance management design and use that rival theories cannot explain well. In the context of contingency theory, more knowledge needs to be accumulated for the 'growth objective' as a contingent variable. Decision-making and organizational learning might not be rival explanations necessarily. Decision-making could be integrated into a theory of Growth Performance Management. Entrepreneurial growth companies' performance management systems could be understood as being designed and used so that organizational members learn how to make good decisions about their actions.

5.2. Organizational learning and performance management

Recursive relationship. In her study about organizational learning and management control, Kloot (1997, p. 54) contemplates: “There remains a question as to whether management control systems determine organizational learning or whether the relationship between them is recursive: management control systems both affect and are affected by organizational learning.” Several theoretical models assume and find that management control system configurations determine organizational learning (e.g. Batac & Carassus, 2009, p. 103; Henri, 2006a, p. 534; Widener, 2007, p. 758).

In line with their results, this study proposes the growth stage contingency model (chapter 2.6) and finds evidence for its robustness (chapter 4.3). However, the cross case analysis also finds that organizational learning determines performance management system design and use in entrepreneurial growth companies. In other words, in a growth context organizational learning and performance management show a recursive relationship. Figure 47 includes this study’s most relevant concepts and illustrates their relationships.

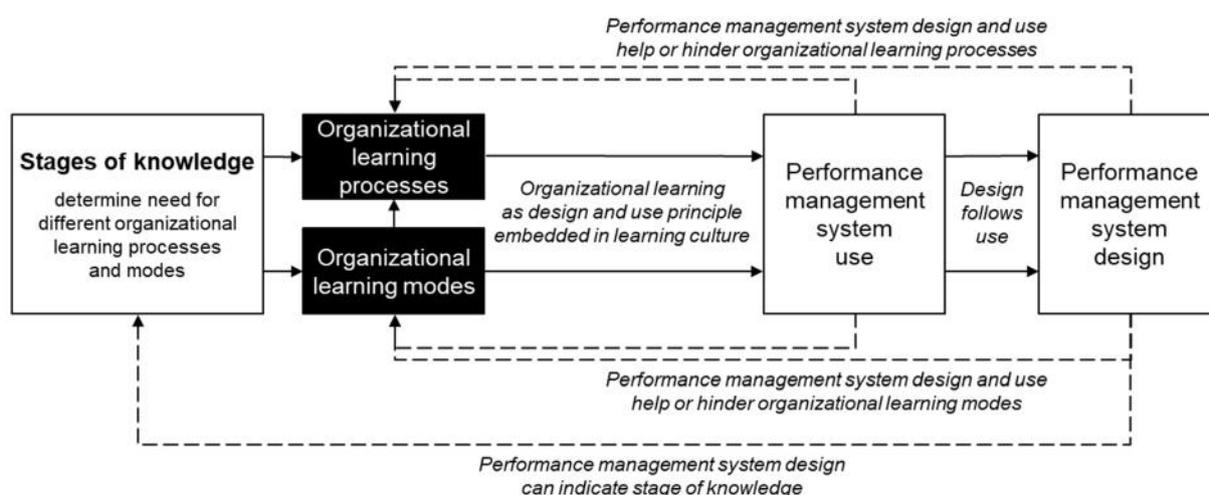


Fig. 47: Recursive relationship between organizational learning and performance management

Performance management determines organizational learning. The growth stage contingency model holds that performance management system design and use help (or hinder) organizational learning processes and modes, which in turn facilitate (or inhibit) growth. The empirical data provides support for the growth stage contingency model (chapter 4.3). Therefore, performance management system design and use determine an organization’s capabilities for organizational learning. This insight is important, because organizational learning and growth cannot be managed directly, but are – positively or negatively – influenced by the design and use of performance management systems.

Organizational learning determines performance management. The pervasiveness and intensity of learning as a core idea and management philosophy at AlphaCo, BetaCo and DeltaCo is remarkable. The strongest evidence are their learning cultures, which case studies establish early on and which are particularly stable (chapters 4.1.1 and 4.2.1). Case studies' learning cultures are their primary mode of control (Sandelin, 2008, p. 338). All other performance management practices, the secondary modes of control, are aligned to learning cultures (chapters 4.2 and 4.3.3). This observation leads to this study's theory that the principle of facilitating organizational learning determines the design of case studies' performance management systems. These results are further discussed in chapters 5.5 and 5.6.

Stages of knowledge and organizational learning. The stages of knowledge determine the need for organizational learning (chapter 4.2). More precisely, different stages of knowledge require different organizational learning processes and different organizational learning modes. Early stages of knowledge, where startups are typically situated, require broad organizational learning processes as well as double loop learning. Advanced stages of knowledge, where entrepreneurial growth companies are located, require more focused but still rather broad organizational learning processes, the introduction of more single loop learning as well as a balance of single loop and double loop learning. Later stages of knowledge, where mature companies are typically located, enable and partly require narrow organizational learning processes as well as a focus on single loop learning.

Organizational learning processes and organizational learning modes. Organizational learning processes and organizational learning modes relate to each other. Processes and modes should conform. Double loop learning requires broad and general knowledge acquisition, information distribution, information interpretation and organizational memory. Single loop learning requires narrow and focused knowledge acquisition, information distribution, information interpretation and organizational memory. The understanding of what organizational learning mode is required is therefore essential to understanding what organizational learning processes are required. Organizational learning processes follow organizational learning mode.

Organizational learning and performance management system use. The organizational learning mode and, to a lesser extent, organizational learning processes required determine the intended use of performance management practices. When double loop learning is required, performance management practices are to be used to expand opportunity seeking and performance measurement and feedback practices are to be used interactively. When single loop learning is required, performance management practices are to be used to focus attention and performance measurement and feedback practices are to be used diagnostically. When both double loop *and* single loop learning is required, then performance management practices need to allow to be used for both expanding opportunity seeking and focusing attention, and performance measurement and feedback practices are to be used both interactively and diagnostically.

Design and use. Performance management systems are designed to facilitate organizational learning. Performance management systems are designed according to the use intended for performance management practices. When practices are intended to be used to expand opportunity seeking and are to be used interactively, then practices are designed accordingly. When practices are intended to be used to focus attention and are to be used diagnostically, then practices are designed accordingly as well. These findings are further discussed in chapter 5.4.

Conclusion. These elaborations are similar to but not the same as Simons (1995). Simons (1995, p. 106) states: “Diagnostic control systems facilitate single loop learning; interactive control systems facilitate double loop learning.” As per the analysis above, the statement could be phrased slightly differently: ‘When single loop learning is required, then diagnostic control systems need to be designed; when double loop learning is required, then interactive control systems need to be designed.’ The analysis corresponds to Kloot’s (1997, p. 69) conclusion: “The relationship between organizational learning and management control systems is both recursive, and two-way with the two concepts inextricably interwoven.” On the one side, the specific performance management system design and use determine an organization’s capabilities for organizational learning. On the other side, organizational learning as design principle determines performance management system design and use. This interaction between organizational learning and performance management has its starting point in a clear understanding of stages of knowledge.

5.3. Stages of knowledge and performance management

Performance management indicates stages of knowledge. This study identifies a relationship between stages of knowledge, organizational learning modes and performance management system design and use. Stages of knowledge determine the nature of organizational learning processes and organizational learning modes. Organizational learning modes determine intended performance management system use. Intended use determines performance management system design.

Stages of knowledge and organizational learning are difficult to observe or measure. In contrast, the design of performance management practices can be observed and evaluated well, as this study demonstrates itself. March (1991, p. 71) states that the explicit and implicit choices between exploration and exploitation are found in strategy, investment decisions, organization structure, rules and procedures, target setting process and incentive systems. Ditillo (2004) suggests a relationship between knowledge complexity and design variations of management control systems. This line of thinking leads to the question: Can performance management practices indicate stages of knowledge? More precisely: Can an organization’s ability and willingness to design and use performance management practices in a certain way indicate its stages of knowledge?

This question is relevant. Chapters 4.2.5, 4.2.6 and 4.2.9 elaborate on the evolution of performance measurement, target setting and meeting schedules across stages of knowledge. The association between stages of knowledge and performance management practices could help to evaluate an organization's ability to adopt advanced formal performance management practices and evolve clusters of interdependent practices to the next formality level. Such analysis could help avoid the exploration and exploitation traps, as discussed below in this chapter. As performance management practices are observable, their analysis can also help to assess an organization's stages of knowledge. For instance, if an investor needs to understand how much a venture already knows about its business, the investor could analyze the venture's performance management system and roughly infer its stages of knowledge (see chapter 6.7).

Key performance measures. Performance measurement can particularly indicate stages of knowledge. Neely, Gregory & Platts (1995, p. 80) suggest this relationship when quoting Lord Kelvin, who stated: "When you can measure what you are speaking about, and express it in numbers, you know something about it." Garvin's (1993, p. 84) knowledge stage 4 elaborates specifically on "some key attributes are measured [and] measures may be qualitative and relative". Garvin's (1993, p. 84) stage 4 can be conceived as a threshold or turning point, after which single loop learning is to be introduced (chapter 2.3.4, figure 7). Relatedly, my colleagues and I have suggested to understand key performance measures as "measurable hypotheses about the scalability of a new business model" (Engelhardt, Gassmann & Möller, 2019, p. 20). There are three main links between stages and knowledge and performance measurement.

First, a venture's ability to drive particularly relevant KPIs deliberately and systematically indicates stages of knowledge. This is especially true for business specific non-financial KPIs. When AlphaCo's utilization rate is consistently better than the average utilization rate of its industry, then it can be assumed that their business model focused on process efficiency in diagnostic imaging is sound. When BetaCo's conversion rate improves, then it indicates that BetaCo's team knows how to sell fitness and nutrition products online. When DeltaCo starts to drive non-financial KPIs such as number of app installs instead of revenue, then this indicates that they have learnt how to drive revenue instead of just emphasizing the fact that making revenue is important.

Second, performance measurement evolves along stages of knowledge. Figure 43 in chapter 4.2.5 puts the evolution of performance measurement design and use in relation to stages of knowledge as well as organizational learning modes. An early stage startup typically begins with broad financial KPIs as well as high-level non-financial KPIs from its business plan. As the venture learns, it starts focusing on certain financial KPIs that are more relevant for its business model compared to others; also, the venture starts to use more specific non-financial KPIs to outline its vision, key success factors and strategy. Next, roughly from knowledge stage 4 onwards, financial and non-financial KPIs evolve into even more specific KPIs, which this

study terms growth and ops KPIs, and growth and ops KPIs are deliberately separated from strategic KPIs.

In later stages of knowledge, the growing venture is able to translate its business model, growth strategy and organizational design into an integrated strategic performance measurement system. A key feature of strategic performance measurement systems is the assumption of linkages between KPIs, which requires a certain level of knowledge (Chenhall, 2005, p. 396). The specificity – or fit – of financial and non-financial KPIs to business model, growth strategy and organizational design, the existence of integrated strategic performance measurement systems and the development of linkages between KPIs can thus be indications for a venture's position in the stages of knowledge framework.

Third and related, the use of key performance measures indicates stages of knowledge. In its early days, a startup uses KPIs interactively to facilitate double loop learning about its product, prototype, value proposition and business model as well as the industry it operates in. In the growth stage, the venture needs to introduce more single loop learning in order to deliver to paying customers on a reliable basis. Due to advanced stages of knowledge as well as increased organizational size, growing ventures can start making distinctions between operational processes and strategic-recurring processes. In operational processes KPIs are used diagnostically in order to facilitate single loop learning. In strategic-recurring processes KPIs are used both interactively and diagnostically in order to balance single loop and double loop learning. Interactive and diagnostic use of key performance measures is supported by performance evaluation processes and reward systems. Therefore, these practices' design and use can reveal stages of knowledge as well.

Target setting and meeting schedules. The design of the operational target setting process can also indicate stages of knowledge. Chapter 4.2.6 elaborates on the relationship between the evolution of target setting, organizational learning and stages of knowledge. An early stage startup typically conflates the three steps of the target setting process into multi-purpose meetings. Single loop and double loop learning take place in the same meetings, which typically take place in short frequencies and include a larger group of participants.

A growing venture, however, which progressed through several stages of knowledge, at some point introduces a formal target setting system. OKRs are one example for a formal target setting system, which was introduced at BetaCo and DeltaCo. The three stages of the target setting process are separated into determining targets (interactive use), reviewing progress towards targets (diagnostic use), and evaluating performance outcomes versus targets (interactive use). Accordingly, single loop and double loop learning are separated in dedicated meetings: while meetings for setting targets and evaluating performance versus targets involve face-to-face debate, meetings for reviewing progress can be short or even by exception.

A formal target setting process typically involves longer frequencies and specific groups of accountable members of the organization. Setting operational targets for a quarter requires more knowledge about the business than setting targets for just four weeks. Clarity in accountability also requires more knowledge about the business than simply stating priorities for the whole organization and then follow a management by personality approach. Hence longer target setting cycles can be an indication for later stages of knowledge.

The design of the target setting process is particularly interlinked with the design of meeting schedules. A startup tends to use multi-purpose meetings; a formalized target setting process requires dedicated meetings. Meeting schedules are well observable for external parties as well. For this reason, the analysis of meeting schedules can provide some indication about stages of knowledge.

The design and use of the operational target setting process and associated meeting schedules is a weaker indication for stages of knowledge compared to performance measurement. The ability of setting the right key performance indicators reveals true knowledge. It is difficult to 'fake'. In contrast, founders have full authority about the design of their target setting process. Therefore, the nature, content and reasoning of operational targets themselves should be considered as well when relating target setting to stages of knowledge.

Exploration trap and exploitation trap. The alignment between stages of knowledge and performance management might also help avoid two situations that are particularly harmful to venture growth. With reference to March's (1991) organizational learning theory as well as Levitt & March's (1988, pp. 322-323) discussion of "competency traps", these two situations shall be termed the 'exploration trap' and the 'exploitation trap'.

The exploration trap describes the following situation: A venture is advanced in its stages of knowledge, would hence be able to exploit its knowledge, yet continues to focus on double loop learning, and as a consequence does not achieve *sufficient growth*. Founders want to preserve the situation of the startup stage, when the team feels like a family and it was all about creativity, building great products and not committing to a certain growth path (cf. Kolvereid, 1992). Founders design and use performance management systems to expand opportunity seeking and emphasize interactive use of performance measurement and feedback practices.

The exploitation trap describes the following situation: A venture is in its early stages of knowledge, should hence continue to learn about its business, yet introduces single loop learning and associated performance management practices too early, and as a consequence cannot achieve *sustainable growth* (cf. Kollmann, Kuckertz & Stöckmann, 2009). Founders want too much too early on and try to scale an immature business. Accordingly, founders design and use performance management systems to focus search and attention and to emphasize diagnostic use of performance measurement and feedback practices.

Exploration and exploitation traps are equally harmful to the success of growing ventures. Although March (1991, p. 71) refers to mature companies, his thoughts are adaptable to entrepreneurial growth companies: “Adaptive systems that engage in exploration to the exclusion of exploitation are likely to find that they suffer the costs of experimentation without gaining many of its benefits. They exhibit too many undeveloped new ideas and too little distinctive competence. Conversely, systems that engage in exploitation to the exclusion of exploration are likely to find themselves trapped in suboptimal stable equilibria.” Stages of knowledge, organizational learning and performance management system design and use should correspond to each other in order to avoid exploration and exploitation traps and increase the likelihood of successful growth.

5.4. Design follows use

This study enables and requires a discussion of the interaction between the design and the use of performance management systems. As illustrated in figure 48, this study proposes the following: On the one side, purposeful design follows intended use; on the other side, actual design determines possible use.

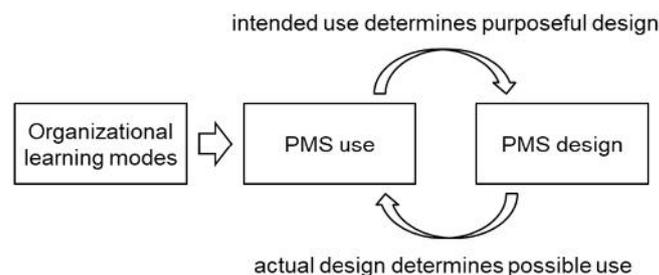


Fig. 48: Interaction between design and use

Target setting as example. Target setting shall be used as an example. AlphaCo, BetaCo and DeltaCo balance organizational learning modes in target setting. For this reason, case studies intend to use the target setting process both interactively and diagnostically. First, this intended use determines design. For the target setting process to be used interactively, the process steps of setting targets and evaluating outcomes require face-to-face debate. Meetings are designed so that there is time for discussion and employees can participate intensely. For the target setting process to be used diagnostically, actions in-between these two process steps need to be reviewed and deviations corrected. Short meetings are designed to manage by exception and preserve attention. Second, actual design determines possible use. Let’s assume there were no meetings or only short meetings designed for setting targets and evaluating outcomes, or if target setting process design did not involve employees. This choice of design would inhibit interactive use and restrict use of target setting mostly to diagnostic use. This is true, even if

managers intended to use target setting interactively. It can be concluded that for strong and coherent target setting, design needs to follow intended use.

Design-use relationship in Simons (1995). In his theory Simons (1995, pp. 71-85, 108-121, 124, 156, 177-181) provides “design considerations” (p. vi) for how to design control systems in order to use them diagnostically and interactively. Simons (1995, pp. 4-5, italics added) introduces his theory by stating: “This book presents a comprehensive theory illustrating how managers control strategy using four basic levers: beliefs systems, boundary systems, diagnostic control systems, and interactive control systems. The solution to balancing the above tensions lies not only in the technical *design* of these systems but, more important, in an understanding of how effective managers *use* these systems.” Simons’ (1995) theory is largely about the use of management control systems and he does provide “design considerations”. However, it seems that he only implicitly outlines that use might determine design. Research based on Simons’ (1995) levers of control theory makes the same implicit assumption (e.g. Bedford, Malmi & Sandelin, 2016; Tuomela, 2005).

Design-use relationship in Ferreira & Otley (2009). Ferreira & Otley (2009, p. 266) do hold that “the association of specific uses to particular control mechanisms enables a better understanding of the design of the management control systems”. Further, Ferreira & Otley (2009, p. 274) state: “Case study evidence suggests that the use of control information can be more significant than the formal design of the control system.” In other words, use can, to some degree, be independent of design. When discussing performance management system change, Ferreira & Otley (2009, p. 275) propose: “The idea of change in the performance management system applies to both the design infrastructure that underpins the performance management system [...] and also to the way performance management information is used [...]” Put differently, change can have different influences on design and use. When analyzing the strength and coherence of performance management systems, they write (2009, p. 276): “It is also worth considering the interrelationship between the design and use of a performance management system and whether these are mutually supportive.” This implies that it is a sign of strength and coherence when design and use support each other. Overall, Ferreira & Otley (2009) do state that design and use are interrelated and that the understanding of use can help with understanding design. However, they do not analyze the design-use relationship further.

Design-use relationship in Su, Baided & Schoch (2015). Su, Baided & Schoch (2015, p. 41) summarize findings on the relationship between design and use: “In focusing on the manner in which controls are used, Ferreira (2002) suggests that the approach to using controls plays a more significant role in organizational performance than the design of controls. Abernethy et al. (2010) argues that what differentiates one control from another is not their technical characteristics but the way in which management uses the controls. Similarly, Langfield-Smith (1997) reports that it is not sufficient to merely investigate the existence of controls without

examining how they are used.” Su, Baired & Schoch’s (2015) summary demonstrates that the literature appears to discuss ‘design *or* use’ rather than ‘design *and* use’.

Need for more clarity. This study suggests that clarity about use brings clarity about design. Use determines appropriate as well as conflicting designs and designs result in use possibilities. Use follows from organizational learning modes required (see chapter 5.2). Therefore, clarity about organizational learning modes brings clarity on how to use and then design performance management practices. The alignment of organizational learning modes, performance management practices use and their purposeful design leads to strong and coherent systems (cf. Ferreira & Otley, 2009, p. 276). Interdependent performance management practices are complements, when their designs follows intended use and intended use follows organizational learning modes required (see chapter 5.7).

This interaction between design and use surfaces particularly when investigating growing ventures, because they develop from purely interactive use in their startup stages to more diagnostic use in their growth stages. Ultimately, they evolve to a balance in use. In mature companies, this relationship might not be so obvious, since mature companies have a longer history of managing performance in different ways. Understanding requirements of organizational learning, deriving appropriate use of practices from these requirements and designing performance management systems accordingly appears to be essential to the success of entrepreneurial growth companies.

5.5. Learning culture and performance management

Case studies design learning cultures. AlphaCo, BetaCo and DeltaCo use cultural performance management practices – vision, mission, organizational values systems, value propositions – to create what Schein (2008, p. 393) terms “learning cultures”. These findings correspond to Collier’s (2005, p. 336) “technology driven culture” and Sandelin’s (2008, p. 327) “ownership-based entrepreneurial culture” of their case studies in the growth stage.

AlphaCo, BetaCo and DeltaCo themselves describe their cultures as learning cultures. For instance, AlphaCo teach their new employees about their “culture of learning” in their onboarding presentation. BetaCo’s COO emphasizes that “startup spirit is much about learning fast”. DeltaCo values system demands to be “driven by our curiosity and build an environment where we can fully unleash our talent”. As elaborated above, case studies use their organizational cultures and especially their values systems to balance single loop and double loop learning in order to accommodate for different stages of knowledge in their organizations.

Schein (2008, p. 393) states that “organizations and their leaders will have to become perpetual learners” and suggests that organizational cultures should be “learning cultures” in order to adapt to complex and changing environments. Schein (2008, pp. 393-428) devotes an entire

chapter to the topic and develops nine typical characteristics of learning cultures. As illustrated in table 47, all of these nine characteristics are reflected in the design and use of case studies' cultural performance management practices.

	AlphaCo	BetaCo	DeltaCo
Humans are problem solvers and learners	Values	Values	Values
Human nature is basically good	Values, mission	Values, mission	Values, mission
The world can be managed	Values, value prop.	Values, value prop.	Values, value prop.
Orientation towards the future	Vision, mission	Vision, mission	Vision, mission
Commitment to learning to learn	Vision, vision, mission	Vision, vision, mission	Vision, vision, mission
Commitment to truth	Values, value prop.	Values, value prop.	Values, value prop.
Commitment to open communication	Vision, vision, mission	Vision, vision, mission	Vision, vision, mission
Commitment to diversity	Values	Values	Values
Commitment to system thinking	Values, value prop.	Values, value prop.	Values, value prop.

Tab. 47: Schein's (2008, pp. 393-406) nine characteristics of a learning culture

Culture and control. The management accounting and control literature appears to struggle with culture as a form of control. On the one hand, cultural control is (briefly) mentioned in classical textbooks, for instance in Merchant & Van der Stede (2007, p. 85). On the other hand, Berry, Coad, Harris, Otley & Stringer (2009, p. 12) find that “there have been few studies of culture and control”. In their recent study, Heinicke, Guenther & Widener (2016, p. 26) review the literature and agree that “the influence of organizational culture on management control systems, while important, is under-researched”.

Organizational culture is a significant component of AlphaCo, BetaCo and DeltaCo's performance management systems. This analysis thus provides insights into the relationship between culture and control in a growth context. Berry, Coad, Harris, Otley & Stringer (2009, p. 12) structure this discussion along three propositions: “Culture is dominated by control; in this sense managers can choose (design) organizational culture. [...]. Culture is control; for it establishes norms, cognitions etc., which shape everything and control also reconstitutes culture. [...]. Culture dominates control; norms cognitions and modes of order shape control structures and procedures.” Based on the analysis of AlphaCo, BetaCo and DeltaCo, this study suggests the following three perspectives for the relationship between culture and control.

Culture is control. Cultural performance management practices are used to create patterns in behavior. Often, these patterns are enforced by mutual monitoring on a peer-to-peer basis with respect to collective goals and norms such as vision, mission, values and value proposition (Merchant & Van der Stede, 2007, p. 85). This is particularly relevant for rapidly growing companies. Previous studies take a similar perspective (Akroyd & Kober, 2019; Collier, 2005; Sandelin, 2008; also see Sullivan, 2016, p. 49).

Culture shapes control. Formal practices for organizational culture form the primary mode of control, which dominates secondary modes of control (Sandelin, 2008, p. 338). Cultural practices embody a fixed point for the design and use of other practices. The emergent themes

in the cross case analysis highlight this relationship (chapters 4.1.5, 4.1.6 and 4.1.8). This is how case studies create internal consistency in their systems; this is also, by implication, how case studies try to avoid packages of loosely coupled practices. For example, when the formalized organizational values system demands values such as ownership and empowerment, then it follows that the operational target setting process should be participative. Several studies reach similar conclusions (Akroyd & Kober, 2019; Collier, 2005; Heinicke, Guenther & Widener, 2016; Henri, 2006b; Jazayeri & Scapens, 2008; Sandelin, 2008).

Control dominates culture. In the event of internal *inconsistency* between cultural and other performance management practices, the non-cultural practices are likely stronger. To continue the above example: An imposed and strictly top-down target setting process contradicts the values of ownership and empowerment, even if they are truly existent and lived. In the long-run, operational target setting is the ‘hard power’, and is likely to eventually alter the culture, especially due to the mechanisms of selection and socialization of organizational members. Interestingly, while the first two perspectives on culture and control are reflected in previous research, there appear to be no studies examining the perspective that control is stronger than culture in case of internal inconsistencies.

Culture and customer. AlphaCo, BetaCo and DeltaCo build their learning cultures around their customers. More specifically, case studies build their learning cultures around the question of what current customers value and what potential customers could wish for. This observation makes the value proposition statement a cultural performance management practice. The value proposition is one of the earliest formalized practices of a venture’s performance management approach (chapter 4.1.1). Vision, mission and to some degree also organizational values systems are influenced by the cultural implications of value propositions to customers.

This idea of ‘culture and customer’ can integrate organizational culture, strategic management and management control, thus addressing the misalignment and isolation between disciplines outlined in chapter 2.1.2. Cultural performance management practices can be used to build organizational culture around (existent and potential) customers as well as (existent and potential) value propositions to them. In other words, cultural practices can be used to facilitate single loop learning about the reliable delivery of existent value propositions as well as facilitate double loop learning about the development of new ones.

This idea evolves management control to performance management – that is from a one-sided focus on strategy implementation in management control to both strategy implementation and strategy formulation in performance management (Otley, 2008, p. 238). At a deeper analytical level, performance management is about the integration of organizational learning: The integration of single loop learning, which is associated with strategy implementation, and

double loop learning, which is associated with strategy formulation, by the means of a the deliberate design of a balanced organizational learning culture.

Culture as part of performance management. These thoughts provide a chance for the emerging discipline of performance management. This study proposes that cultural performance management practices, including the practice of value proposition statements, and their interrelationship with other practices can be one of the core advancements of performance management compared to management accounting and control. Performance management aims at designing internally consistent systems, as systems lead to superior performance (Gong & Ferreira, 2014). Along with Gibson & Birkinshaw (2004), this study proposes that the superiority of performance management systems is a result of their general orientation towards organizational learning as well as of their balanced approach to organizational learning modes – embedded in organizational learning cultures.

5.6. Organizational learning as design principle

State of the literature. The relationship between organizational learning and management control is not much researched (Batac & Carassus, 2009, p. 102; chapter 2.6.2). This is despite the fact that several authors have conceived this relationship as essential. Argyris (1977, p. 122) stated early: “The attempts to produce a more effective management information system would not only be of value to the practitioners but they could provide the basis for resting theories on organizational learning such as utilized in this paper.” Influenced by Argyris and Schön (1978), Simons’ (1995, p. 106) levers of control framework made a critical step towards a management control theory resting on organizational learning: “Diagnostic control systems facilitate single loop learning; interactive control systems facilitate double loop learning.” Kloot’s (1997, p. 58) case study paper is the most advanced in suggesting an early version of this study’s proposed design principle: “Organizations can be designed in such a manner that the opportunities for both adaptive and generative learning [single loop and double loop learning] are maximized.”

The principle. Inspired by this literature, this study proposes that organizational learning can be used as a principle for the purposeful and internally consistent design and use of performance management systems. This design principle might be true for many types of organizations. However, the study generalizes organizational learning as design principle only to the specific context of entrepreneurial growth companies (Yin, 2014, p. 20).

Organizational learning as a design principle is an analytical generalization of this study’s initial theoretical proposition: Entrepreneurial growth companies design and use their performance management systems to facilitate organizational learning processes and to balance organizational learning modes. This study found empirical evidence that supports this theoretical proposition (chapters 4.1 and 4.2). This allows to derive the following general and specific versions of the design principle. This study proposes that organizational learning as

design principle can not only *predict and explain but also prescribe* how to design and use a performance management system in a growth context.

Organizational learning as design principle

General: Performance management systems should be designed and used so that it helps and not hinders organizational learning.

Specific: Performance management systems should be designed and used so that they facilitate organizational learning processes and so that their design supports intended use, with use being dependent on organizational learning mode(s) required by stages of knowledge.

Learning culture and design principle. AlphaCo, BetaCo and DeltaCo design their cultures as learning cultures, as elaborated in chapter 5.5. Organizational learning as design principle is introduced and enforced by formalized practices of organizational culture, most notably by vision statement, mission statement, organizational values system and value proposition statement. These cultural performance management practices form the primary modes of control (Sandelin, 2008, p. 338). Learning cultures and organizational learning as design principle also explain several emergent themes, most notably ‘performance measurement and organizational culture’ in chapter 4.1.5, ‘target setting and organizational culture’ in chapter 4.1.6, and ‘incentives and organizational culture’ in chapter 4.1.8.

Example. The design principle shall be illustrated with short-term financial bonuses paid on the individual level as an example. Rewards should be understandable, i.e. bonus receivers must understand how exactly rewards can be earned (cf. Merchant & Van der Stede, 2007, p. 403; Simons, 1995; Simons, 1995, pp. 78-81). Bonuses facilitate organizational learning processes, when it is clear to bonus receivers what knowledge is essential to be acquired, what information is needed to be distributed, how information is to be interpreted and what knowledge and information is relevant to be stored. For organizational learning processes to be narrow and focused, performance dimensions must be clear. Precise, sound, often measurable performance dimensions require advanced stages of knowledge. As performance dimensions are clear, bonus receivers are foremost expected to optimize their activities, behavior and methods so that they earn their bonuses. In other words, bonus receivers are expected to engage in single loop learning only. Corresponding to organizational learning processes and modes, short-term financial bonuses support diagnostic use of performance management practices. As design follows use, bonuses can be designed as described above.

This simple example fits to the empirical evidence of the cross case analysis. The design principle explains findings on the design of bonuses at AlphaCo and DeltaCo. Both case studies do not use or abandon the use of bonuses in their headquarters. Yet both case studies maintain bonuses in their scaling units. BetaCo, in contrast, does not have a structurally separate scaling

unit. In addition, BetaCo's business model and growth strategy are in comparably early stages of knowledge. In order to help rather broad organizational learning processes and to not hurt double loop learning, BetaCo does not use bonus schemes despite strong pressure for growth.

Theoretical relevance. Organizational learning as design principle advances our theoretical and practical understanding of performance management systems. Eisenhardt (1989a, p. 548) states that "good theory is parsimonious, testable, and logically coherent". Organizational learning as a design principle is a parsimonious theory, as it is able to explain performance management system design and use with a focus on organizational learning concepts (Argyris & Schön, 1978; Garvin, 1993; Huber, 1991; March, 1991). The theory is testable, as it is able to predict specific performance management system design and use and fits to case study data. The theory is logically coherent, as outlined in the growth stage contingency model. Overall, the theory is able to *describe, explain and predict* performance management system design and use in a growth context. Description, explanation and prediction are the cornerstones of scientific theory (Deutsch, 2000, pp. 59-74). The design principle might also be able to assist in the design of integrated performance management systems, in contrast to loosely coupled packages.

Practical implications. The principle is able to *prescribe* specific design and use. Hence organizational learning as principle for designing integrated performance management systems has practical implications. Management practitioners can apply the design principle and ask: Does this performance management practice design help and not hinder learning? Does this performance management practice design facilitate the right knowledge acquisition, information distribution, information interpretation and organizational memory? Does this performance management practice design support the right organizational learning modes as implicated by current stages of knowledge?

From the investigation this study estimates that entrepreneurial growth companies need to adjust their performance management systems roughly every six months in order to adapt to their often rapid growth in business and organization. As anticipated by Grabner & Moers' (2013, p. 410) thoughts on a "trial-and-error approach to design", entrepreneurial growth companies frequently adopt new practices and re-design existing ones. The design principle can make this adaptation process more efficient and can help to ensure that the outcome of adoptions and re-designs results in the creation of effective performance management systems.

5.7. Performance management as system and not package

State of the literature. The discussion on management control as system or package dates back to Otley's (1980, p. 422) seminal paper on contingency theory, where he notes: "It is often impossible to separate the effect of an accounting information system from other controls; they act as a package and must be assessed jointly." Such joint assessment of controls is found to

enhance firm performance (Bedford, Malmi & Sandelin, 2016; Chenhall & Langfield-Smith, 1998; Drazin & Van de Ven, 1985; Gong & Ferreira, 2014; Khandwalla 1973; Sandelin, 2008).

Despite the relevance of this discussion, research on management control as system or package is still rare. Stringer (2007, p. 97) finds just nine comprehensive field studies in her literature review. Bedford & Malmi (2015, p. 2) assess that “there remains little empirical analysis of how control mechanisms combine”. Using Ferreira & Otley’s (2009) holistic performance management framework, this study investigates all aspects of AlphaCo, BetaCo and DeltaCo’s performance management approaches. The study finds that case studies design systems of complement performance management practices. These findings can thus contribute to the debate on performance management as system or package.

Grabner & Moers’ (2013) definitions. Grabner & Moers (2013) propose definitions for systems, packages, interdependencies, complements and substitutes. Grabner & Moers (2013, p. 408, italics added) define: “Management control practices form a *system* if the management control practices are interdependent and the design choices take these interdependencies into account. In contrast, management control as a *package* represents the complete set of control practices in place, regardless of whether the management control practices are interdependent and/or the design choices take interdependencies into account.” And: “*Interdependence* implies that the *value* of one management control practice depends on the use of another management control practice, and vice versa.”

Grabner & Moers (2013, p. 412, italics added) further define interdependence: “Management control practices are *complements* when the benefits of one management control practice increase with the use of (some) other management control practice (and vice versa). Management control practices are *substitutes* when the benefits of one management control practice decrease with the use of (some) other management control practice (and vice versa).” Management control practices can address related or unrelated control problems. The control problem provides context to the interdependencies of practices and influence whether or not practices act as complements or substitutes (Grabner & Moers, 2013, pp. 408, 410, 414).

What exactly are “value” and “benefits”? Grabner & Moers (2013, p. 415) recognize this as their “most fundamental question” and state: “If research explicitly aims at investigating management control interdependencies, a crucial aspect is to clearly present a theory as to why and how the benefits of using one management control practice are related to the use of another, and vice versa.”

Application to growth context. Entrepreneurial growth companies’ dominant control problem is defined by the theoretical model. Derived from the objective to grow, their control problem is growth in revenues and headcount. Yet since growth in revenues and headcount cannot be controlled directly, the growth stage contingency model proposes that entrepreneurial growth

companies manage organizational learning as the intervening variable instead. Entrepreneurial growth companies' dominant control problem is organizational learning. This study proposes the following theory: In the specific context of entrepreneurial growth companies, value and benefits and thus interdependencies can be defined more precisely by using organizational learning in the definition.

Interdependence in the growth stage

Interdependence implies that organizational learning processes and organizational learning mode(s) required by the design and use of one performance management practice depends on the organizational learning processes and organizational learning mode(s) required by the design and use of other performance management practices, and vice versa.

Only the terms "value" and "benefits" and thus interdependence in the concrete context of the control problem of entrepreneurial growth companies are specified. Grabner & Moers' (2013, p. 408) definition for system and package is valid also in the growth stage: entrepreneurial growth companies' design choices take interdependencies explicitly into account. This theory fits to the empirical evidence of the cross case analysis. The relevant role of organizational learning as design principle at AlphaCo, BetaCo and DeltaCo, which is enforced by case studies' learning cultures, becomes evident. Organizational learning as design principle and learning cultures as primary modes of control allow to create coherent and strong performance management systems, which are needed for the particular conditions of the growth stage.

It should be noted that Grabner & Moers' (2013, pp. 408, 412) definitions might be slightly imprecise for two reasons. First, they write of "depends on the use", "increase with the use" and "decrease with the use" of other practices. They might mean not only "use" but 'design and use'. Second, Grabner & Moers' (2013, pp. 408, 412) refer to "another management control practice", i.e. a singular other practice. However, as elaborated above, it is not only one other practice that a given practice is interdependent with, it is most likely several other practices.

Example. In order to illustrate these thoughts, the example of short-term, individual financial rewards from chapter 5.6 shall be continued and extended with the performance management practices of target setting and performance evaluation. According to Ferreira & Otley (2009, pp. 267, 271), target setting and performance evaluation are interdependent to reward systems. The allocation of bonuses is the outcome of performance evaluation processes. Performance evaluation processes typically compare actual performance outcomes to pre-defined performance dimensions. The target setting process determines performance levels for these performance dimensions. These three components do not form an entire performance management system, but this cluster of interdependencies illustrates the idea.

As explained in chapter 4.2.8, short-term, individual bonuses require rather narrow and focused organizational learning processes, likely facilitate single loop learning only, and are mostly applicable to advanced stages of knowledge (cf. Merchant & Van der Stede, 2007, p. 403; Simons, 1995; Simons, 1995, pp. 78-81). Accordingly, bonuses typically come with objective, formulaic performance evaluation. Objective performance evaluation processes define performance dimensions and their weightings explicitly in order to focus organizational learning processes exactly on the tasks at hand. Such precisely defined performance dimensions are stable only in later stages of knowledge. As performance dimensions are stable, only single loop learning is expected from bonus receivers. Bonus receivers only learn about these activities, behavior and methods required to deliver on defined performance dimensions, reach performance levels and earn their bonuses.

As performance dimensions are stable only in later stages of knowledge, the target setting process just determines performance levels and does not search for performance dimensions themselves. Organizational learning processes can thus be narrow and focused on the course of the target setting process. Correspondingly, such a design of a target setting process involves rather single loop learning about the methods of how to determine performance levels, and not so much double loop learning about performance dimensions. It should be noted though that of course target setting almost always involves double loop learning to some degree.

This extended example fits to the empirical evidence of the cross case analysis. In their scaling AlphaCo and DeltaCo combine financial rewards with objective, formulaic performance evaluation processes, stable performance dimensions in the form of key performance measures as well as a pre-dominantly diagnostic use of target setting. In AlphaCo's diagnostic centers, employees can earn "extra payments" (and salary increases) according to their performance in the calculated "Index Score", whose performance level is determined and which is evaluated in the "Performance Management Process" using the Excel-based "Performance Evaluation Tool". In DeltaCo's international sales offices, sales representatives can earn financial bonuses based on formulaic evaluations of actual revenue versus revenue targets.

Interestingly, AlphaCo's and DeltaCo's design of target setting, performance evaluation and reward system is complement to their design of scaling units' key performance measures, i.e. "Index Score" and revenue, and the organizational design, which separates scaling units' functions, i.e. diagnostic centers and international sales offices, from functions in the headquarters. AlphaCo's and DeltaCo's functional organizational design is itself complement to key success factors and founders' roles (chapter 4.1.3). Both case studies, therefore, create performance management systems rather than packages – and as per this study's theoretical elaborations they do so with explicit reference to organizational learning.

Trial-and-error approach to design. Grabner & Moers (2013, p. 410) point out that performance management as system or as package can alternate: “It is possible that a set of interdependent management control practices are designed taking these interdependencies into account, and thus form a management control system, but that at a later stage management control practices are added without taking any interdependencies into account. The management control system then gets embedded within a broader set of management control practices that are a management control package. If the latter practices get re-designed to ‘connect’ with the former, the broader set of management control practices move back into a system configuration. This trial-and-error approach to design is likely to occur in practice.”

A consciously designed performance management system can evolve over time into a package – until the pressure for internal consistency prompts managers to re-designing the whole package back into an integrated performance management system. This dynamic accelerates in a period of rapid growth and thus provides a substantial challenge to the performance management of entrepreneurial growth companies. The number of transactions increases. The organization quickly grows larger in size. New middle managers are added to the top management team and adopt ‘best practices’ that might not be integrated with each other. The result might be a package of unrelated practices, which is likely to be inferior to an integrated performance management system. Organizational learning as design principle, which is enforced by learning cultures, can assist in this trial-and-error approach to performance management design and use in order to design systems, and not packages.

5.8. Clusters of multi-directional interdependencies

Critique of bilateral and uni-directional interdependencies. Ferreira & Otley (2009, pp. 267, 268, 269, 270, 271, 276; chapter 4.1.12) theoretically develop 18 “key links” between components of their performance management system framework. In addition to these 18 key links, Ferreira & Otley (2009, p. 273) assume that information flows, systems and networks are interdependent to all other components. Ferreira & Otley (2009) focus mostly on bilateral and uni-directional interdependencies. Bilateral interdependence assumes a relationship of just two performance management practices. Uni-directional interdependence refers to the assumption of “sequential control choices” (Grabner & Moers, 2013, p. 408), i.e. a practice is dependent on another practice, but not vice versa.

Grabner & Moers (2013, p. 418) point out: “While the reductionist approach can be criticized for not being ambitious enough, the systems approach struggles with being too ambitious.” Although the analysis of bilateral interdependencies is more than the reductionist approach, analyzing the interdependencies just bilaterally might be not enough. On the other hand, the systems approach is indeed ambitious, as I experienced myself in the analyses of case studies’ performance management systems.

Idea of clusters of multi-directional interdependencies. A way forward might be what could be termed ‘clusters of multi-directional interdependencies’. This approach goes beyond the reductionist approach and beyond just bilateral interdependencies and can mitigate the complex investigations of the systems approach. The core idea of clusters of key interdependencies is to identify at least three performance management practices, whose operations and effectiveness depend on one another in multi-directional ways and that thus should be designed as complements in order to positively affect organizational performance.

In the tradition of contingency theory, it can be assumed that such clusters are likely dependent on organizations’ contexts and specific situations. In contrast to Ferreira & Otley (2009), this study assumes that there are no uni-directional relationships between performance management practices. Complementarity theory (Grabner & Moers, 2013) as well as organizational learning as design principle imply that relationships are always either bi-directional or multi-directional. Organizational culture as the primary mode of control is no exception. Culture shapes control, yet control can dominate culture. As elaborated in chapter 4.1.12, their interdependencies are multi-directional (cf. Sandelin, 2008, p. 338).

Example. Chapter 5.7 provides an example of how target setting, performance evaluation and reward systems work as a cluster of multi-directional interdependencies. This cluster is designed and used differently in studies’ scaling units versus their headquarters. In AlphaCo’s diagnostic centers and DeltaCo’s international sales offices founders combine target setting for stable performance dimensions and ambitious yet achievable performance levels with objective, formulaic performance evaluation and an emphasis on financial rewards. In their scaling units, AlphaCo and DeltaCo use these practices diagnostically. In contrast, in AlphaCo’s and DeltaCo’s headquarters, founders combine target setting for shifting performance dimensions and ambitious performance levels with subjective evaluation and an emphasis on non-financial rewards. In their headquarters, AlphaCo and DeltaCo use these practices interactively. In both instances, for scaling units as well as for headquarters, target setting, performance evaluation and reward systems form a cluster of multi-directional interdependencies.

Clusters in this study. Next to bilateral interdependencies, this study elaborates on five of these clusters of multi-directional interdependencies in the context of the growth stage. Chapter 4.1.1 and figure 14 identify vision, mission, value proposition and organizational values as a cluster. Chapter 4.1.3 and figure 19 identify key success factors, organizational design and founders’ roles as a cluster; middle management is added to this cluster as outlined in figure 21. Chapter 4.1.4 and figure 27 identify the sequence of organizational objectives as a cluster: mission, vision, value proposition, key success factors, strategic objectives and operational target setting. Chapter 4.1.5 and figure 32 identify strategy (business model logic), strategic performance measurement system and organizational design as a cluster. The “BetaCo Strategic KPI System” as well as the “DeltaCo Growth Cycle” and their interactions with business model and

organizational design are illustrations of this cluster (figures 33 and 35). Figures 39 and 40 in chapter 4.1.7 identify performance evaluation and performance management practices that are used as performance dimensions in the evaluation process as well as reward systems as a cluster.

Grounded in the analyses of AlphaCo, BetaCo and DeltaCo's performance management approaches, the following four clusters are proposed. First, the *culture cluster*: mission, vision, values, value propositions. Second, the *goals cluster*: mission, vision, key success factors, value propositions, strategic objectives, operational targets. Third, the *strategy-structure cluster*: key success factors, strategy (business model logic), organizational design, performance measurement. Finally, the *management control cluster*: performance measurement, target setting, performance evaluation and reward systems. These four clusters are supported by this study's findings, yet still these are just propositions.

State of the literature. This idea of clusters of interdependencies is not necessarily new. Grabner & Moers (2013, p. 411) themselves elaborate on "clusters of management control practices". Simons (1995, pp. 71-85, 108-121, 124, 156, 177-181) design considerations assume a similar logic. Chenhall & Langfield-Smith (1998, p. 243) examine "how combinations of management techniques and management accounting practices enhance the performance of organizations, under particular strategic priorities". In the tradition of contingency research, Gerdin (2005) and Moores & Yuen (2001) investigate configurations of complement management accounting systems across life cycle stages. However, the explicit search for clusters dependent on specific contexts, contingent variables and control problems could be intensified.

Theoretical and practical implications. Thinking in clusters of multi-directional interdependencies has theoretical and practical advantages. Clusters go beyond the reductionist approach and can mitigate the challenges of the systems approach. Clusters are easier to analyze and still contribute to building theory on performance management as system. Clusters and their specific designs and uses, which are identified to be sound given certain contingencies such as the growth stage, might assist managers in designing their performance management systems. A comprehensive theory on this matter is not elaborated in this study. This chapter is meant to be a first discussion including some findings from the investigations into case studies. Surely, clusters of key interdependencies are an interesting avenue for future research.

5.9. Sequential adoption and simultaneous evolution

Patterns. The cross case analysis identifies patterns of sequential adoption as well as patterns of simultaneous evolution of performance management practices. AlphaCo, BetaCo and DeltaCo do not adopt and formalize all performance management practices at the same time. Instead they introduce new practices sequentially. Case studies also tend to evolve interdependent performance management practices roughly at the same time. Often this simultaneous design and/or re-design of practices is initiated by the adoption of new practice.

This study proposes that sequential adoption and simultaneous evolution of practices contribute to the design of performance management systems, in contrast to packages.

Practices	≤ 10 employees	≤ 50 employees	≥ 50 employees
1 Vision and mission			
Vision statement		X	X
Mission statement			X
Organizational values system	X	X	X
Cultural education process			X
Visibility of organizational culture			X
Value proposition as part of culture	X	X	X
2 Key success factors		X	X
3 Organization structure			
Organizational design		X	X
Founders roles and responsibilities	X	X	X
Middle managers roles and responsibilities		X	X
Rules, procedures and policies		X	X
Human resources function			X
Finance and business intelligence function			X
Business specific growth supporting functions			X
Office design			X
4 Strategies and plans			
Growth strategy		X	X
Strategic business plan		X	X
Financial business plan	X	X	X
Strategic management process			X
Strategic-singular processes	X	X	X
Strategic-recurring processes		X	X
Operational processes			X
Strategic objectives		X	X
Value proposition statements as part of strategy	X	X	X
Scaling unit			X
5 Key performance measures			
Strategic KPIs	X	X	X
Growth KPIs		X	X
Ops KPIs			X
Strategic performance measurement system			X
6 Target setting			
Operational targets	X	X	X
Target setting process		X	X
7 Performance evaluation			
Subjective performance evaluation process		X	X
Objective performance evaluation process			X
Informal situational feedback	X	X	X
8 Reward systems			
Financial rewards	X	X	X
Non-financial (individual) rewards		X	X
Non-financial group rewards	X	X	X
Formal penalties		X	X
Informal penalties	X	X	X
9 Information flows, systems and networks			
Information systems		X	X
Meeting schedule	X	X	X
Informal yet designed communication			X

Tab. 48: Sequence of adoption of practices in relation to number of employees

Sequential adoption. Sequential adoption refers to the observation that case studies adopt formal performance management practices in a sequence, in contrast to adopting all essential practices at the same time. For instance, case studies formalize their value proposition statements before they formalize vision, mission and values system. This observation corresponds to life cycle thinking (Churchill & Lewis, 1983; Greiner, 1972; Kazanjian & Drazin, 1990; Miller & Friesen, 1984) and to research on the adoption of management control systems in the startup and growth stages (Dávila & Foster, 2005, 2007; Dávila, Foster & Jia, 2010; Dávila, Foster & Li, 2009; Moores & Yuen, 2001).

Previous management accounting and control studies relate size (number of employees) and age (in years) to the adoption of management control practices (Dávila & Foster, 2005, pp. 1052, 1055, 1061, 1062; Dávila & Foster, 2007, pp. 914-920; Dávila, Foster & Jia, 2010, pp. 84, 89; Dávila, Foster & Li, 2009, p. 334). Dickinson (2011, p. 1975) criticizes age as an indicator for life cycle stages, as “firms of the same age can learn at different rates because of imperfections in their feedback mechanisms”. Dávila (2005, p. 226) refers to number of employees and the number of exponentially increasing one-to-one interactions that “drive coordination and control costs”. Chenhall (2003) names organizational size, but not age, as one out of six most significant contingent variables. It can be concluded that size – number of employees – is the most appropriate proxy to understand sequential adoption.

Table 48 illustrates the adoption of performance management practices as a function of size. More specifically, the adoption of performance management practices is related to the sizes of below ten employees, between ten and 50 employees, and above 50 employees. This association is not a statistical one. Table 48 makes prescriptive statements grounded in this studies investigations into performance management systems in entrepreneurial growth companies.

Simultaneous evolution. Simultaneous evolution refers to the observation that some interdependent performance management practices evolve together. When one practice is re-designed and/or a new practice is adopted, other practices are re-designed as well. For instance, case studies introduce formal strategic performance measurement systems and formal operational target setting processes simultaneously. Another example is that case studies formalize their strategic management process when a middle management level is established. Cardinal, Sitkin & Long (2004), Collier (2005) and Sandelin (2008) make similar observations in their longitudinal case studies.

Culture cluster as example. These patterns of sequential adoption and simultaneous evolution of performance management practices contribute to the idea of clusters of multi-directional interdependencies. Clusters of practices do not have to be adopted at the same time. However, when practices of an interdependent cluster are adopted, then their design should correspond to the design of the other practices. The culture cluster of mission, vision, values and value

propositions is a good example. These analyses are provided in chapter 4.1.1 and figure 14 for AlphaCo, BetaCo and DeltaCo. Startups adopt value proposition statement early on. Value propositions are formalized in order to test them on customers. Value propositions are tested and adapted until startups find a sound value proposition – that is value propositions that attract more paying customers. At some point, sound value propositions require the formalization of a vision statement in order to make strategic boundary clear, establish a shared overarching objective and expand opportunity seeking for further value propositions and new customer groups. Later on, value propositions and vision require an organization with patterns in behavior that support both opportunity seeking and focus of attention. These patterns in behavior are created by the adoption of an organizational values system. As the organization grows, employees need to understand their contribution to society, which motivates for further opportunity seeking; at this point in time value propositions, vision and values are aggregated into a formal mission statement.

In this example, the sequential adoption of practices is as follows: value proposition statement – vision statement – organizational values systems – mission statement. These practices are sequentially adopted. Yet their designs and uses are interdependent. A re-design of the value proposition statement must fit to vision, mission and values. However, a growing venture can face the challenge that value propositions do not hold anymore, there are less and less paying customers and the venture needs to change its course. First of all, such a pivot results in a re-design of the value proposition statement (cf. Ries, 2011, pp. 172-176). If the pivot leads the venture into a different industry and to a different overarching purpose, then vision and mission and likely also the values system must be re-designed as well so that they are internally consistent to each other. The culture cluster of mission, vision, values and value propositions evolved simultaneously.

Another example is the strategy-structure cluster of key success factors, strategy (business model), organizational design and performance measurement. The evolution of this cluster is analyzed in depth in chapter 4.1.5 on the “BetaCo Strategic KPI System” and the “DeltaCo Growth Cycle”. The analysis demonstrates how the performance practices of the strategy-structure cluster are adopted sequentially and evolve simultaneously.

Theoretical and practical implications. The adoption of practices in the right sequence is efficient, as not all performance management practices are necessary in earlier stages of the organizational life cycle. Founders can focus on the practices they really need. It is, therefore, essential to understand what practices are missing given a certain organizational size. The evolution of clusters of interdependent practices likely support the internal consistency within a performance management system.

5.10. Simons' management control systems over life cycle stages

Simons' assumptions. In his theory, Simons (1995, pp. 127-129) provides “a simplified overview of how control systems are implemented over the life cycle of the firm” (p. 127). Simons' (1995, pp. 127-129) life cycle analysis demonstrates the relevance of the growth stage to management control system design, since he theorizes that three out of four levers of control are introduced in the growth stage. Some of his assumptions are confirmed by findings, while other assumptions are not consistent with this study's empirical evidence.

For the startup stage, Simons (1995, p. 127) defines: “In the startup phase, there is little demand for formal control systems. Because employees are in constant face-to-face communication with each other, it is possible to control key aspects of the business without formal reporting structures. Internal accounting controls to ensure that assets are secure and accounting information is reliable are the only formal control systems needed.”

For the growth stage, Simons (1995, pp. 127-128) defines: “In the growth stage, however, increasing size requires that more decision-making authority be delegated to lower levels. As a result, formal, measurable goals and the monitoring of participants' activities become increasingly important. Diagnostic control systems are implemented for the first time to meet the information and control needs of senior managers. Performance incentives are tied to the achievement of diagnostic targets. By the end of the growth phase, the company operates in multiple markets with a variety of locations. At this stage, a formal beliefs system is implemented. Mission and vision statements are created and communicated to motivate, empower, and supply direction. At the same time, managers learn that certain types of activities should be declared off-limits. Bad investments and failed projects result in new strategic boundaries that delimit opportunity space.”

For the maturity stage, Simons (1995, p. 128) defines: “In mature firms, senior managers learn to rely on the opportunity seeking behavior of subordinates for innovation and new strategic initiatives. At this stage, they begin to use selected control systems interactively. Beliefs systems, strategic boundaries, diagnostic control systems, and interactive control systems now work together to control the formation and implementation of strategy. Finally, business conduct boundaries are imposed any time that a crisis demonstrates the costs of errant employee actions.”

Figure 49 compares Simons' (1995, p. 128) assumptions with the findings from the cross case analysis. The solid line with the smaller spot illustrates Simons' assumptions. The dotted line with the larger spot illustrate this study's findings.

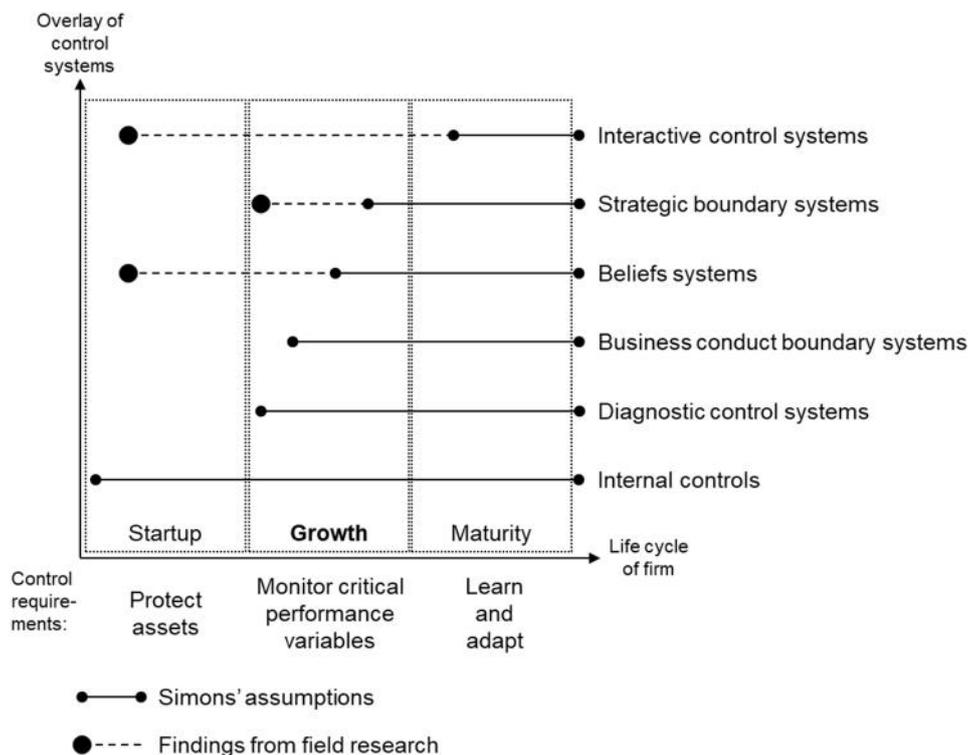


Fig. 49: Evolution of management control over life cycle (adapted from Simons, 1995, p. 128)

Confirmations. Three of Simons' (1998, pp. 127-129) six assumptions are confirmed by this study. Simons assumes that internal controls are being used early on and this study can confirm this assumption. Simons assumes that diagnostic control systems are introduced early in the growth stage. Findings confirm this assumption. The introduction of diagnostic control in order to support single loop learning is one of the most significant evolutionary steps from being a startup to becoming an entrepreneurial growth company. Simons further assumes that business conduct boundary systems are adopted early in the growth stage. Findings for rules, procedures and policies confirm this assumption to some extent.

Contradictions. This study's findings contradict three of Simons' (1998, pp. 127-129) assumptions. First, evidence shows that beliefs systems are designed in the startup stage. Case studies create learning cultures early on. Vision, organizational values systems as well as value propositions and customer focus are stable practices in the beginning of the growth stage. Second, strategic boundary systems are adopted early in the growth stage. Case studies identify their markets in their startup stages already. Case studies can enter the growth stage, when venture capital firms invest in their growth. This growth capital infusion is a bet on a certain product-market fit within which case studies hope to grow. Third, interactive control is used by case studies from their early startup days onwards. Interactive control is not just introduced in the maturity stage. Potentially interactive use is re-introduced. Startups need opportunity seeking and double loop learning in order to find and develop value propositions that customers

might pay for. Hence startups adopt and design performance management practices so that they can be used interactively.

Missing theoretical foundation. Simons (1995, p. 128) also theorizes about “control requirements” to explain the adoption and design of control systems. As illustrated in figure 49, he suggests that startups aim at “protecting assets”, growth companies need to “monitor critical performance variables” and mature companies need to “learn and adapt”. All these might be valid reasons to introduce control systems. However, these reasons are not a comprehensive theory. In contrast, organizational learning theory can explain findings on the adoption and design of performance management practices in the startup stage and the growth stage.

5.11. Reflections on Ferreira & Otley’s framework

Reflection based on this study. Otley’s (1999) and Ferreira & Otley’s (2005, 2009) performance management frameworks have been used by other studies to structure their case study research (e.g. Collier, 2005; Ferreira, 2002; Stringer, 2007; Silva & Ferreira, 2010; Tuomela, 2005; Yap & Ferreira, 2010). These studies demonstrate the usefulness of such frameworks. However, Ferreira & Otley (2009, p. 276) themselves acknowledge that “empirical evidence, especially (but not exclusively) from case study research, is required to assess its robustness and validate its adequacy”. This study uses Ferreira & Otley’s (2009) framework theoretically, methodologically and practically. Thus, this study allows some reflections on the usefulness of Ferreira & Otley’s (2009) framework.

Theoretical usefulness. Ferreira & Otley’s (2009) twelve questions allow to extend a research question and do so in a theoretically informed manner. The framework’s performance management system components create constructs to be used in case study research and outline theoretically developed relationships between these construct measures. The theoretical development to some of the twelve questions provides definitions of constructs and outlines options for the design of performance management practices. Unfortunately, Ferreira & Otley (2009) are not consistent in their paper’s structure and do not provide definitions and design options for all components.

Methodological usefulness. Ferreira & Otley’s (2009) framework helps to organize case study enquiries. This study uses their framework to structure its most central research instruments, i.e. field diary, case study database, data collection protocol as well as chain of evidence. Thereby data collection is linked to theory. Furthermore, this study uses the framework to structure the within case analyses as well as the cross case analysis. The analysis of such a large amount of data would have been clearly more difficult without Ferreira & Otley’s (2009) framework. However, the intense usage of the framework by this study does not confirm Ferreira & Otley’s (2009, p. 276) assumption that it “allows the speedy and comprehensive description of many aspects of performance management system design and use”. If the analysis

is to reach a sufficient depth, then the framework indeed demands a lot of data collection and analytical work from the researcher.

Practical usefulness. Ferreira & Otley's (2009) performance management framework also proved its usefulness in practice. In the context of action research projects at BetaCo and DeltaCo, the framework was used to outline gaps in these organization's performance management systems. At BetaCo the framework was also used in the communication with the founder team. Using the framework revealed that management practitioners, even those with such extensive experience as case studies' founders and middle managers, often do not have a clear overview of the performance management practices they can and should apply.

Inconclusive on organizational culture. Ferreira & Otley (2009) appear to be inconclusive about the role of organizational culture in their framework. Collier (2005, pp. 336, 337) has brought forward similar critique for their 2005 working paper version. On the one hand, they appear to exclude organizational culture from the framework, since they consider "organizational culture" as a "notable contextual variable" and they "have not included these factors within the framework as we view them more as contingent variables" (p. 267). In discussing their framework, they also suggest (p. 277): "The issue of organizational culture and the extent to which it can be managed is controversial; suffice it to say that some aspects of organizational culture may well be open to managerial influence, and culture in this sense might be appropriate for consideration as part of a yet wider framework."

On the other hand, Ferreira & Otley (2009, p. 277, italics added) clearly include performance management practices related to organizational culture: "The framework explicitly considers *vision, mission, key success factors, strategies and plans, and organization structure*. These control structures are expected to be part of or, at the very least, influence *belief systems, boundary systems or both*." In the theoretical development for their question on "vision and mission", Ferreira & Otley (2009, p. 268) also elaborate on organizational values.

Mission statement, vision statement and formalized organizational values systems are important practices that are used to deliberately design organizational culture (Collins & Porras, 1996; Lencioni, 2002; Merchant & Van der Stede, 2007, p. 85; Simons, 1995, p. 57). Ferreira & Otley (2009) do elaborate on these performance management practices. Thus, their other statements about organizational culture and resulting inconclusiveness is surprising. As the findings in chapter 5.5 demonstrate and as Sandelin (2008, p. 338) shows in his study as well, in a growth context cultural performance management practices form the primary mode of control and shape the design and use of all other practices. Therefore, it is suggested that the role of cultural performance management practices is to be clarified in a future version of Ferreira & Otley's (2009) performance management systems framework.

Personnel controls. Ferreira & Otley's (2009) framework appears to miss out three practices that are significant to performance management in a growth context. Ferreira & Otley (2009) do not include practices related to personnel controls and human resources management (cf. Adler, 2011, p. 253). Personnel controls, such as selection, socialization and training, are established in the management accounting and control literature latest since Merchant's (1982, p. 45) "control tool classification framework". As findings in chapters 4.1.3 and 4.1.8 demonstrate, for entrepreneurial growth companies, the selection, the initial socialization, the ongoing socialization, the training and development as well as the process of employees leaving the company are important performance management practices with significant impact on organizational performance.

Non-information-based practices. Ferreira & Otley (2009) do not address non-information-based, physical performance management practices, which are relevant forms of action controls (Merchant, 1982, p. 45). However, this study analyses that such non-information practices are leveraged by entrepreneurial growth companies to make organizational culture tangible, to support organization structure, to provide non-financial group rewards as well as to specifically design information flows (chapters 4.1.1 and 4.1.3).

Meetings. Although Ferreira & Otley (2009, pp. 273-274) elaborate on information flows, systems and networks, they do not address meetings specifically. Yet regular meeting schedules are important routines for knowledge acquisition, information distribution, information interpretation and organizational memory (see chapter 4.2.9). Also, the intense debate in face-to-face meetings is at the core of Simons' (1995, p. 97) theoretical definition of interactive control systems. The nature of meetings distinguishes interactive and diagnostic use of performance management practices. Further, meetings are particularly relevant practices to manage performance in the startup stage and early in the growth stage. Therefore, it is recommended to include meetings and formal meeting schedules in the analysis of question 9 on information flows, systems and networks.

Potential improvements. There are four areas for potential improvements. First, some components are well-defined and developed from theory; design options for performance management practices are explained in detail. Unfortunately, some components are not defined or miss out theoretical development. For example, question 12 on strength and coherence could be defined in more detail. What exactly is strength? What is coherence? What is a link between practices? When do performance management practices form a system and when do they form a package? The framework could gain from more structure and stringency in its theoretical development of each component.

Second and related, the structure to each of the twelve components could be more consistent. Such a consistent structure would facilitate the framework's purpose as a research tool. Sections

could start by providing a clear definition of the respective performance management practice from the literature. Sections could then elaborate on possible design options for the respective practice to be investigated.

Third, the part of question 9 on feedback and feed-forward information flows and question 10 on performance management system use appear to be somewhat redundant. It could be wrong and Ferreira & Otley (2009) have reasons to elaborate on the topic of performance management system use in both questions. Yet when using the framework these reasons are not quite clear.

Fourth, Ferreira & Otley (2009) elaborate on 18 key links. However, there might be more key links to be considered. For instance, as this study demonstrates, there are key links between the component of vision and mission (i.e. formal practices of organizational culture) and the components of target setting, performance evaluation and reward systems. As another example, this study identifies a key link between strategy and plans, or strategic objectives, respectively, and target setting (chapter 4.1.4). Ferreira & Otley (2009) elaborate on these key links across their entire paper. Since the discussion around system or package is increasingly relevant (Bedford & Malmi, 2015, p. 2), the theoretical development of key links could be conducted in its own section. Also, the framework could include clusters of interdependent practices (see chapter 5.8) instead of bilateral and bi-directional interdependencies only.

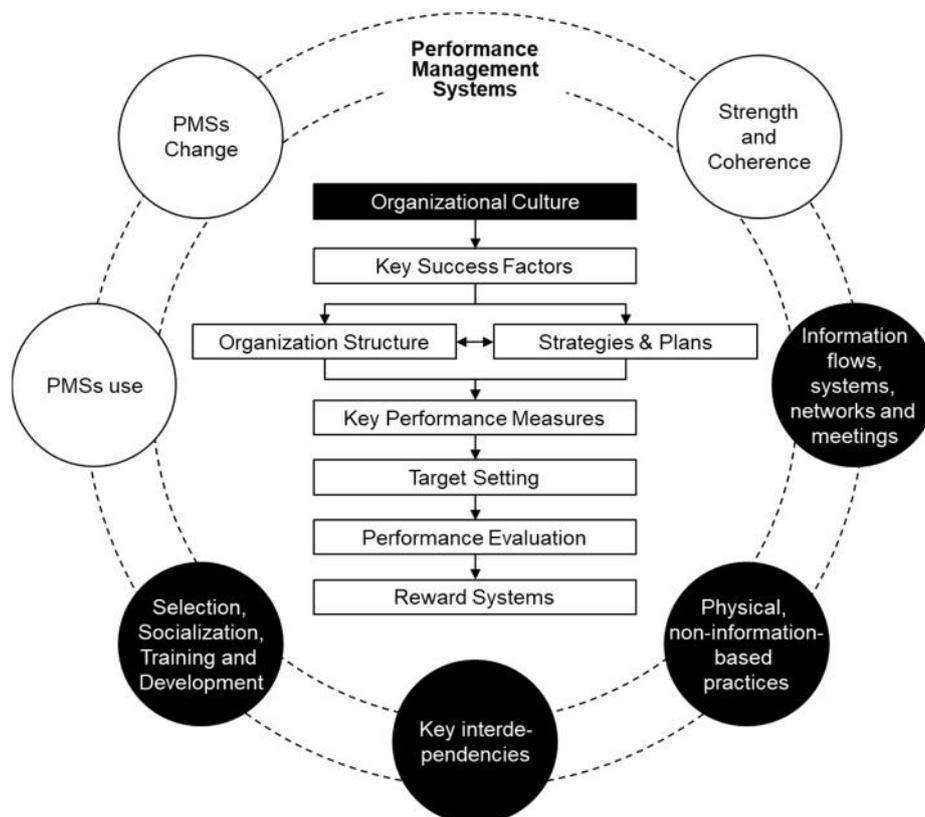


Fig. 50: Extensions to Ferreira & Otley's (2009) performance management framework

Extension of the framework. Ferreira & Otley (2009, p. 277) explicitly state that their framework “it is open to extension”. Based on several years of user experience, the performance management systems framework could be extended as illustrated in figure 50. Such an extended framework could support in closing the practice-research gap by enabling even more holistic research into performance management systems (cf. Malmi & Granlund, 2009, pp. 597-598; Malmi, 2016, p. 32; Otley, 2008, p. 238; chapter 2.1.2). Such an extended framework could also work against the silo mentality and misalignment between managerial disciplines by integrating concepts relevant to managing performance, especially from cultural management and human resources management (cf. Berry, Coad, Harris, Otley & Stringer, 2009, p. 13; Nixon & Burns, 2005, p. 262). The Growth Management Canvas, which is outlined in chapters 6.5 and 6.6, integrates these possibilities for extension.

5.12. From management control to performance management

Learning from ventures. Entrepreneurial growth companies operate under extraordinary conditions (Hambrick & Crozier, 1985). Entrepreneurial growth companies bear liability of smallness and liability of newness (Gilbert, McDougall, Audretsch, 2006, p. 927). Entrepreneurial growth companies deal with the high uncertainty implicated by innovative business models. Their organizations double and triple quickly in size and as a consequence entrepreneurial growth companies have extraordinary resource needs. Growth is the expectation of all stakeholders and therefore the pressure to perform is high.

Entrepreneurial growth companies face all of the challenges that Melnyk, Bititci, Platts, Tobias & Andersen (2014, p. 174) diagnose for the new dynamics in today’s business environment in a concentrated manner. The Formula 1 can teach car manufacturers about motor engineering. Similarly, this study suggests that extreme organizations such as AlphaCo, BetaCo and DeltaCo can teach us a lot about managing performance and, therefore, about performance management as an emerging academic discipline.

Overcoming gaps. In recent years, the researchers and practitioners identified several factors that lead to discontent about the ‘performance’ of management accounting and control theory. In chapter 2.1.2, this study refers to three frequently mentioned gaps: the “practice-research gap” (Bromwich & Scapens, 2016, p. 1), the “misalignment” between academic disciplines in management (Nixon & Burns, 2005, p. 261), and the “reductionist approach” in contrast to a presumably more effective “system approach” (Grabner & Moers, 2013, p. 407). In fact, these three gaps are interrelated (Malmi & Granlund, 2009, p. 598).

Key aspects	Management accounting	Management control (Merchant & Van der Stede, 2007)	Levers of control (Simons, 1995)	Performance management (Ferreira & Otley, 2009)	Performance management in this study
Key question	<i>How can formal financial information be used to steer an organization?</i> (cf. Dávila & Foster, 2005, S. 1040)	<i>How can financial and non-financial information be used to control the achievement of organizational objectives?</i> (cf. Merchant & Van der Stede, 2007, p. 5)	<i>How can information-based routines and procedures be used to maintain or alter patterns in organizational activities?</i> (cf. Simons, 1995, p. 5) And: "How do managers balance innovation and control?" (p. ix)	<i>How can formal and informal practices be used to convey objectives, to assist strategic process and management, and to facilitate organizational learning and change?</i> (cf. Ferreira & Otley, 2009, p. 264)	<i>How can information-based and non-information-based practices be used to influence stakeholders' behavior to achieve pre-defined objectives and learn about performance standards required in the future?</i>
Strategy	Intended strategies	Intended strategies	Intended and emergent strategies	Intended and emergent strategies	Intended and emergent strategies
Type of practice	Formal	Formal	Formal	Formal and informal	Formal and informal
Type of information	Financial	Financial and non-financial	Financial and non-financial	Financial and non-financial	Financial and non-financial
Anthony's (1965) control levels	Management control	Management control	Strategic planning and management control	Strategic planning, management and operational control	Strategic planning, management and operational control
Organizational culture	Not included	Included as practice	Included as practice	Inconclusive statements (see chapter 5.11)	Culture as primary practice
Selection and socialization	Not included	Mentioned	Mentioned	Not included	Explicitly included
Non-information-based, physical practices	Not included	No relevant role	Not included	Not mentioned	Explicit role
Routinization	Routinized practices only	Routinized practices only	Routinized practices only	Focus on routinized practices	Routinized and non-routine practices
System vs. package	Not included	Not included	Focus on system approach	System or package	Clearly system approach

Tab. 49: From management accounting and control to performance management

As an emerging discipline performance management should take the practitioners' perspective in order to overcome these gaps. Otley (2008, p. 238) emphasizes: "practice leads theory". Management practitioners' key question is: What practices can help to manage organizational performance? For practitioners the ultimate test of useful theory is its power to describe, explain and predict (prescribe) how to design and use performance management practices (practice-research gap). Practitioners do not recognize academic boundaries; they are concentrated on the effectiveness of individual and interdependent practices (misalignment gap). And practitioners

cannot make isolated design decisions – they have to make decisions about all of the performance management practices that they can deliberately and systematically design and use (gap due to reductionist approach). Along these lines, the evolution from management accounting and management control to performance management can be described and performance management as a new discipline can be understood.

Differences and similarities. Chapter 2.2.1 compares and discusses the definitions provided by Dávila & Foster's (2005, S. 1040) for management accounting, Merchant & Van der Stede (2007, p. 5) and Simons (1995, p. 5) for management control, and Ferreira & Otley (2009, p. 264) for performance management. In table 49, ten aspects are suggested that outline differences and similarities between classical management accounting, management control as elaborated in the classical textbook by Merchant & Van der Stede (2007), management control as developed in Simons' (1995) levers of control theory, performance management as proposed by Ferreira & Otley (2009) as well as performance management as developed in this study. The eight most interesting aspects are discussed below.

Strategy. Management control and performance management address different overarching questions. Management control asks: How can managers maintain control over the achievement of organizational objectives, which are determined by intended strategies. However, in a growth context and in dynamic business environments control can become a limitation (cf. Nixon & Burns, 2005, p. 261). Strategy formulation and innovation are not just a top management responsibilities. Performance management thus asks a different question: How can organizational members manage multi-dimensional performance today and in the future? In this respect, performance management supports emergent strategies.

This evolution from intended strategies to both intended and emergent strategies becomes evident in the observation that performance management understands performance evaluation as a distinguished performance management practices. This study elaborates that a key difference between types of use is that diagnostic use, which is associated with intended strategies, avoids performance evaluation, while interactive use, which is associated with emergent strategies, emphasizes performance evaluation. In contrast, classical management control appears to have the tendency to conflate performance evaluation with target setting and/or performance measurement (e.g. Merchant & Van der Stede, 2007, pp. 29-30; Malmi & Brown, 2008, p. 293; chapter 4.1.7).

Formal and informal practices. Management control focuses on formal control practices. Simons (1995, p. 5) management control systems definition explicitly excludes informal practices. In contrast, performance management emphasizes the role of informal performance management practices (Ferreira & Otley, 2009, p. 264). This study analyzes that formal practices influence informal practices. At the same time, informal practices make formal

practices effective in the first place. A suitable example is the interaction between formal performance evaluation processes and informal situational feedback (chapter 4.1.7).

Anthony's control levels. Performance management integrates – or rather re-integrates – all three of Anthony's (1965) control levels, i.e. strategic planning, management control and operational control. In Otley's (2008, p. 238) words: "The move towards performance management systems is involved with putting Anthony's categories back together again, as they need to operate much more seamlessly in practice." The analysis of organizational processes and the relevance of strategic-recurring processes in contrast to operational processes provides evidence for the necessity of this re-integration (chapter 4.1.3).

Culture. Performance management should emphasize the role of organizational culture in creating a learning organization (see chapter 5.5). Although the management control literature recognizes the relevance of cultural practices (Merchant & Van der Stede, 2007, p. 85), this study goes beyond this analysis and suggests organizational culture as the primary practice, which influences the design and use of all other secondary practices (cf. Sandelin, 2008). In this respect, this study goes beyond Ferreira & Otley's (2009) assumptions, who appear to be inconclusive about the role of cultural performance management practices (see chapter 5.11).

Selection and socialization. In mature companies the performance management practices of selection and socialization might be less obvious, because mature companies usually do not grow rapidly in headcount. In a growth context, however, the selection, socialization as well as training and development of organizational members are highly relevant performance management practices (Barringer, Jones & Neubaum, 2005, pp. 680-681). Further, these practices are interdependent with other practices. For instance, selection, socialization and organizational culture are strongly interdependent practices. Management control does address these practices (Merchant & Van der Stede, 2007, p. 83; also, Malmi & Brown, 2008, p. 295). Surprisingly, Ferreira & Otley's (2009) omit these practices. The investigations into AlphaCo, BetaCo and DeltaCo emphasizes the significance of selection, socialization as well as training and development as performance management practices. It might, therefore, be necessary to include them into a comprehensive performance management framework.

Non-information-based practices. The role of non-information-based, physical performance management practices should be reviewed. Simons (1995, p. 5) excludes them in his definition of management control systems. Merchant & Van der Stede (2007, pp. 76, 394) mention physical practices as behavioral constraints. Ferreira & Otley (2009) do not explicitly exclude non-information-based practices, but they also do not mention them. In contrast, this study finds that AlphaCo, BetaCo and DeltaCo use every possibility to positively influence behavior. They use non-information-based practices to reinforce information-based practices. The most relevant example is the office design (see chapters 4.1.1 and 4.1.3). It can be concluded that

non-information-based, physical practices are an interesting addition to the set of relevant performance management practices.

Non-routinized practices. Management control and performance management concentrate on routinized performance management practices. Routines are a significant part of organizational learning (Levitt & March, 1988). Simons (1995, p. 5) limits his levers of control explicitly on “routines and procedures”. Ferreira & Otley’s (2009, p. 264) definition implies routinized practices. In line with this literature, this study also focuses on practices that are used on a regular basis to manage performance. However, since they are still evolving organizations, AlphaCo, BetaCo and DeltaCo use several relevant practices, for instance strategic-singular processes or the design of the work environment, which are rather non-routine performance management practices. Therefore, performance management theory could consider the integration of non-routinized practices.

Systems, not packages. Performance management emphasizes the interdependencies between practices. In contrast, Merchant & Van der Stede’s (2007) understanding of management control appears to focus on individual controls. Ferreira & Otley (2009, p. 276) assume packages rather than systems. Simons (1995) clearly develops his levers of control framework as an integrated system. Several studies conclude that performance management systems are more effective than packages (Bedford, Malmi & Sandelin, 2016; Chenhall & Langfield-Smith, 1998; Drazin & Van de Ven, 1985; Gong & Ferreira, 2014; Khandwalla 1973; Sandelin, 2008). Findings at AlphaCo, BetaCo and DeltaCo support that entrepreneurial growth companies aim at designing performance management systems and avoid packages of loosely coupled practices. This study proposes that performance management research should be directed towards designing systems and overcoming packages. Chapters 5.5, 5.6, 5.7, 5.8, 5.9 and 5.11 contribute to this discussion.

This chapter elaborates on the path that the management accounting and control literature could go towards a comprehensive performance management theory. Grounded in the insights from AlphaCo, BetaCo and DeltaCo as organizations in extraordinary situations, this study contributes to the further development of performance management as an emerging discipline. Performance management intends to overcome the practice-research gap, to integrate managerial disciplines and to manage performance holistically. These insights lead to the concept of Growth Performance Management.

6. Growth Performance Management

6.1. Managing the entrepreneurial spirit

Relevance. After years of researching growing ventures, Dávila (2009, p. 25) reaches a clear conclusion: “Management does not destroy the entrepreneurial spirit as it is so often argued. On the contrary, management enables the entrepreneurial company to grow. Therefore, contrary to popular belief, lack of growth isn’t due to a lack of ideas (or a market), but rather due to a lack of management know-how.” This study’s investigation into AlphaCo, BetaCo and DeltaCo as well as my consulting work with startups and growth companies echo Dávila’s conclusion.

Often, startups fail not because there is no market opportunity for their business idea. Startups often do not survive, because they neglect performance management altogether, do not design their performance management system purposefully, or do not adapt performance management on a regular basis (cf. statistics by World Economic Forum, 2011, p. 37). These are the main ways how founders incur “management debt” (Horowitz, 2014, pp. 134-138) in the growth stage. Management debt is the result of careless and inconsistent management decisions that have expensive consequences in the long run. As companies scale, they necessarily incur some management debt. Yet growth managers must account for it, manage it systematically– and not risk management bankruptcy.

Growth Performance Management can be learnt. And it pays off. More intense use of performance management practices allows founders to grow revenues and organizations faster. It has a significantly positive impact on startup valuation. And it leads to less likely replacement of the founder CEO (Dávila, Foster & Jia, 2015, p. 239; Dávila & Foster, 2005, p. 1061; Dávila & Foster, 2007, pp. 925, 931-933).

Foundations of chapter 6. This chapter on Growth Performance Management is based on management accounting and control theory, organizational learning theory, life cycle theory as well as the entrepreneurship literature as outlined in chapter 2. Furthermore, this chapter particularly benefits from this study’s action research approach, as elaborated in chapter 3. It is the outcome of the analyses of AlphaCo, BetaCo and DeltaCo in chapter 4 as well as well as the theoretical discussions and elaborations in chapters 4 and 5. In addition, this chapter is inspired and informed by my consulting work on Growth Performance Management over the last years and my previous professional experience as a finance executive at the hyper growth company Groupon Inc. (see chapter 3.4.1). Finally, it is noteworthy that my colleagues and I have already published two papers on topics in the area of Growth Performance Management (Engelhardt & Möller, 2017; Engelhardt, Gassmann & Möller, 2019).

6.2. Scaleups are no startups

The founder of a Swiss ‘unicorn’ – a growth company valued at more than USD 1 billion – pinned the cartoon illustrated in figure 51 at his company’s notice board. He pinned it there as a warning to his team. *Startups cannot stay startups*. I often start presentations and workshops on Growth Performance Management with this cartoon to emphasize that scaleups are no startups. Testing a business idea and founding a startup require fundamentally different characteristics and skills compared to growing an organization that delivers to customers reliably and searches for further market opportunities at the same time. The ‘scaling skeletons’ in the beginning of the growth stage likely lie there because they did not manage well.



Fig. 51: Startup summit and ‘scaling skeletons’ (source: www.goinglongblog.com)

Scaleups vs. startups in words. A startup is a small organization working on a single performance dimension: to test an idea in order to create a new product or service. In contrast, a growth company is an organization, which grows in size and must address an increasing number of relevant performance dimensions. A startup has few stakeholders only, most notably the founders. In contrast, a growth company has to satisfy many different stakeholders. A startup is strongly dependent on the entrepreneurs’ personalities: creativity, drive, passion, risk tolerance, ‘uncomfort zone’ and the like. In contrast, growth companies require management skills: leadership qualities, organizational talent, professional competence, results orientation, dependability and decision-making. Startups search and explore. Growth companies must balance search and execution, single loop learning and double loop learning, exploration and exploitation, opportunity seeking and focus of attention. Startups can – and should – be managed by personality. In contrast, growth companies must be managed by increasingly formal performance management practices.

Scaleups vs. startups in numbers. The difference between startups and scaleups can also be understood as a matter of mathematics. The formula for potential one-to-one interactions I for N employees is $I = N*(N-1)/2$. A startup of five members has just ten possible one-to-one interactions. A startup of ten members has already 45. One-to-one interactions grow exponentially. At five or ten members, founders can still talk to all other members. Members can communicate directly to each other. All can sit in the same room. A growing venture of 30 members has 435 potential one-to-one interactions and a founder has already 29 other colleagues to talk to. If that founder talks to all 29 other members for just 10 minutes, she/he would need almost five hours to talk to everyone. In the words of BetaCo's CEO: "I'm drowning in meetings."

Span of control is another way of understanding growth mathematically. The span of control is defined as the number of subordinates that a manager can effectively lead. Assume a span of control of seven, i.e. one manager can effectively lead seven employees. In this case a three-person founder team can lead a startup of up to 21 employees; this results in a 24 member organization with a two-layer hierarchy. As a consequence, founders need to start introducing middle managers and a three-layer hierarchy already from 24 employees onwards. A three-person founder team with a middle management can manage an overall 171-person organization (3 founders plus $3*7=21$ middle managers plus $21*7=147$ employees).

The transition from a two-layer hierarchy to a three-layer hierarchy is characteristic of growth companies. For growing ventures, the core question is how long the two-layer hierarchy can hold. The span of control is thus a further reason why three-person founder teams might be optimal: the two-layer hierarchy can hold longer. It is noteworthy that even at larger spans of control the two-layer hierarchy does not hold for long. For instance, a span of control of twelve holds until an organizational size of just 39. From this size onwards, founders need middle managers and team leaders. The distance between founders and operations increases and they need to introduce formal performance management practices. Although these are rather generic mathematical perspectives on growth, nonetheless, such calculations illustrate how early founders are required to become growth managers.

Scaleups require different practices. As the paragraphs on one-to-one interactions and span of control demonstrate, the growth stage begins earlier than many founders might expect. The phases of customer discovery and customer validation are fundamentally different from customer creation and company building (Blank, 2013, p. 68). Often, all four phases, from customer discovery to company building, are conflated under the headline 'startup'. Consequentially, practices for startups are used for growth companies as well. However, startup practices as well as associated mindsets cannot be used for company building. The conflation of phases results in dysfunctional use of practices in the growth stage. Performance management practices for mature firms such as annual budgets are not helpful for startups, and

startup practices such as the lean startup approach (Ries, 2011) are not helpful for growth companies. Company building requires a deliberate approach to Growth Performance Management.

6.3. Growth is learning

What is growth. During the first full year of my research, I tried to find theories answering the question: What is growth? When the goal is to investigate organizations, whose main characteristic is that they grow rapidly, and when the goal is to develop a concept for managing growth, then it is relevant to understand what growth exactly needs to be managed. Is it revenue? Customers? Products? Employees? What makes a company grow? Chapter 2.7.1 provides a literature review on growth factors such as industry context, access to resources, entrepreneur and management team characteristics, strategy and organizational structure and systems. The entrepreneurship literature is much focused on these growth factors. Yet do growth factors explain what growth is and how a startup can grow?

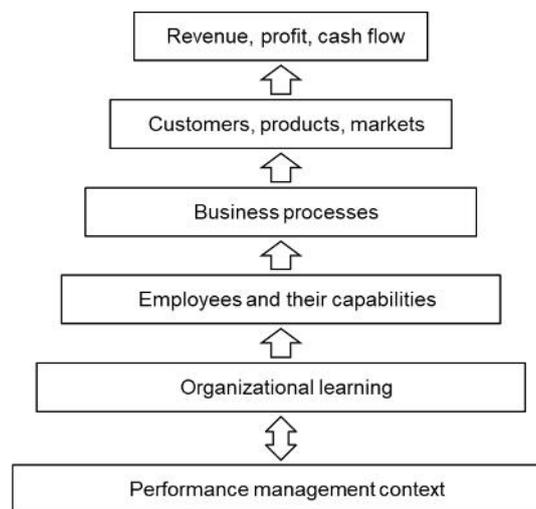


Fig. 52: The links of the growth chain

The growth chain. When I ask this question during Growth Performance Management workshops, workshop participants usually answer: revenue growth. Yet what drives revenue growth? Typically, the answer is: selling more products to more customers and add more markets. Yet what drives more products, customers and/or markets? This is where answers start to come slower. Usually answers include business processes and employees with their actions and capabilities. Yet what drives business processes as well as employees' actions and capabilities? I hardly hear answers to this question. My answer, based on the growth stage contingency model and associated theories is: Business processes as well as employees' actions and capabilities are driven by the interaction between organizational learning and performance management context (cf. Kaplan & Norton, 2001; Raisch, 2008; Von Krogh & Cusumano, 2001; chapters 4.2, 4.3, 5.2, 5.3, 5.5 and 5.6; see figure 52).

Growth is fueled and driven by learning. This insight is significant, because learning can be the object of systematic management. Performance management practices are instruments to direct, to motivate, to guide, to time, and to make organizational members accountable for learning processes. This study suggests that learning represents the dominant control problem of growth companies. Growth is learning. Learning can be managed. And learning *must* be managed.

The learning principle. The fundamental principle of Growth Performance Management is simple: Design performance management practices that help and not hinder learning. Design performance management practices that facilitate organizational learning processes, i.e. knowledge acquisition, information distribution, information interpretation and organizational memory. Design performance management practices that balance organizational learning modes, i.e. practices that balance search and execution, single loop learning and double loop learning, exploration and exploitation, opportunity seeking and attention focus.

Learning culture. Learning as design principle should be anchored in explicit and stable organizational cultures. Organizational cultures need to be “learning cultures” and growth managers need to be “perpetual learners” (Schein, 2008, p. 393). Especially the organizational values system, supported by non-information-based, physical performance management practices, is a practice to create a learning culture. The design of organizational values systems should facilitate all organizational learning processes and manage the tensions between organizational learning modes. The design of all other practices of a performance management system should at least not contradict and at best reinforce organizational values.

6.4. Defining Growth Performance Management

Definition growth company. A growth company is a young, rather small organization that grows significantly in headcount. Members of a growth company can be fully employed or part-time, employees or freelancers, receive salaries or not. The number of heads and hands being active for an organization is relevant to the definition. It is the performance of heads and hands that needs to be managed.

This means that a growth company can be a non-profit organization or a for-profit firm. A growth company does not have to make revenue. However, typically a growth company is a for-profit firm that has validated an innovative business model, serves an increasing number of paying customer groups, and continues to search for new value propositions and new customers. Typically, a growth company has the objective to test the scaling hypothesis that its business model can attract paying customers and be profitable at some future point in time.

Definition growth managers. Growth managers are those members of a growth company, who design or influence the context of how other organizational members work. Growth managers influence the formal and informal design of the performance management system of a growth

company. This definition is inclusive. Growth managers are typically founders and middle managers, especially middle managers of growth supporting functions. Yet early employees (veterans) and key employees, venture capitalists, angel investors, directors of the board, members of the advisory board, mentors, consultants, staff of a company builder and others can also be growth managers.

Definition Growth Performance Management. Growth Performance Management is an approach and a method that assists growth managers in designing individual performance management practices as well as holistic performance management systems for growth companies. Growth Performance Management consists of five parts. First, the concept emphasizes the role of learning to the growth of organizations. Growth Performance Management proposes learning as the central principle for the design of performance management systems (chapter 6.3). Second, Growth Performance Management proposes a framework – the Growth Management Canvas – that supports the analysis, evaluation and design of performance management systems for growth companies (chapter 6.5). Third, the Growth Management Canvas outlines further frameworks, useful instruments and recommendations for designing performance management (chapter 6.6). Fourth, the Growth Management Canvas can be applied for several purposes and particularly for Growth Performance Management workshops (chapters 6.7). Finally, Growth Performance Management comes with seven pervading principles (chapter 6.9).

6.5. The Growth Management Canvas

6.5.1. Knowing the tools in the toolbox

The tools. Growth Performance Management workshops are conducted with experienced growth managers. Their business is already running. They have paying customers, attracted a number of talented employees, hired experienced middle managers, and usually received significant amounts of venture capital from investors. In many cases founders are serial entrepreneurs. In the beginning of workshops, I often ask the question: What management instruments (performance management practices) do you or can you use to make sure everyone in your growth company does the right things right?

This simple question reveals two interesting findings. First, practitioners cannot identify all performance management practices that are available to them. In fact, many growth managers cannot list even half of the practices from the top of their heads. Second, practitioners often confuse performance management practices with each other. For example, they confuse OKRs with KPIs, cultural values with operating principles, or the organizational structure with core business processes. Yet how to design a performance management system in a dynamic, fast changing organization, if even experienced growth managers do not have an overview of the

practices available to them? How difficult must Growth Performance Management be especially for young founders or founders educated in technology and not in business?

Toolbox analogy. For this reason, this study offers the Growth Management Canvas as a framework for managing growth. The Growth Management Canvas is like a toolbox. A toolbox contains the most relevant tools: a hammer, a saw, a pliers, a screwdriver. These tools are used for different purposes and they are applied in combination in order to build a house. Like a toolbox, the Growth Management Canvas shows the complete set of performance management practices available to growth managers in one framework. The Growth Management Canvas defines practices clearly, distinguishes them from each other and helps to understand how they can be combined in order to manage the growth of an organization successfully.

Users. The Growth Management Canvas is a framework for everyone interested in analyzing and understanding a growth company's specific Growth Performance Management approach. Typically, growth managers are the main users of the Growth Management Canvas; the most relevant growth managers are founders, middle managers and investors. Further potential users include mentors, advisors, consultants, key employees, customers and corporate partners as well as managers of accelerator programs, incubators and company builders. Similarly, to Ferreira & Otley's (2009, p. 276) performance management framework, the questions of the Growth Management Canvas can also support lecturers and guide researchers.

The Growth Management Canvas can be used for all types of growing organizations. Whenever a group of people is growing rather rapidly, the questions of the Growth Management Canvas need to be answered at some point in time. Although the framework has been developed by researching and consulting for-profit companies, it might also be applied to non-profit organizations, social organizations, governmental organizations and projects growing in size.

6.5.2. A canvas, not a template nor a model

It is a canvas. The Growth Management Canvas is termed a "canvas" to highlight four central thoughts. First, typical frameworks and templates tend to over-simplify due to committing to specific relationships, sequences and hierarchies between constructs, which are represented by boxes and arrows. On the contrary, a canvas embodies the simultaneousness and interdependencies of the questions to be addressed. Second and related, a canvas is deliberately less specific than a model or a system. A model or a system assume certain cause-effect relationships as universal, while a canvas does not. Third, a canvas is not a template or blueprint that is adjusted just a little to a specific context. In contrast, a canvas symbolizes the effort and creativity that needs to go into working it – somewhat similar to a painter transforming oil and canvas into art. Finally, a canvas allows to develop a mutual understanding, common definition and shared language of a complex matter, which facilitates discussions and motivates to create.

Four role models. Growth Performance Management and the Growth Management Canvas have four role models. First, the Growth Management Canvas' list of relevant performance management practices is theoretically grounded in Ferreira & Otley's (2009) 12-questions performance management systems framework and extended based on this study's findings for the specific context of growth companies (chapter 5.11). Second, the list of relevant performance management practices, the use of practices as well as the fundamental learning philosophy is inspired by Simons' (1995) levers of control framework.

Third, Osterwalder & Pigneur's (2010) business model canvas is a role model. As a parallel to my path, Osterwalder (2004) also did a doctorate to develop "a generic business model ontology" (p. 3) before writing the book. The business model canvas was developed as "a shared language for describing, visualizing, assessing, and changing business models" (Osterwalder & Pigneur, 2010, p. 12). The Growth Management Canvas aims to serve a similar purpose for Growth Performance Management.

Fourth, Ries' (2011) lean startup approach is a role model. As a parallel to my path, Ries developed his ideas through actual startup and growth company experience. Ries (2011, p. 38, italics added) states that "if the fundamental goal of entrepreneurship is to engage in organization building under conditions of extreme uncertainty, its most vital function is *learning*". Ries' (2011) lean startup method is created for learning about a new product or service in the startup stage. In his spirit of learning as a vital entrepreneurial function, Growth Performance Management is created for learning in the growth stage.

6.5.3. Configuration logic of the Canvas

Seven components. The Growth Management Canvas consists of seven components (figure 53): (1) Culture & Customer, (2) Strategy & Execution, (3) Organization, (4) People, (5) Goals & Feedback, (6) Key Metrics, and (7) Incentives. All seven components, or boxes, define different yet interrelated performance management practices. The Culture & Customer box defines the formal practices of a growth company's customer-centric organizational culture. The Strategy & Execution box defines the formal practices of strategic management as well as how a growth company executes on its growth strategy. The Organization box defines the key agents and functions of the growth company as well as how they work together and what information systems they use. The People box defines who is to be selected as a member of the growth company and defines the key processes of the employee cycle. The Goals & Feedback box defines how operational goals are set and how different forms of performance feedback are derived and provided. The Key Metrics box defines the most essential key performance measures in relation to organizational culture, business model, growth strategy, financial performance as well as organization structure. The Incentives box defines purposeful rewards and appropriate penalties and outlines respective decision and communication processes.



Fig. 53: The Growth Management Canvas

Configuration logic. The configuration of the boxes in the overall framework follows a logic. First, the left side of the Canvas, which is headed by Culture & Customer, is associated with rather soft management forces and exploration, while the right side, which is headed by Strategy & Execution, is associated with rather hard management forces and exploitation. The segmentation is somewhat like the left and the right side of the human brain. These are no clear-cut categories, of course, as both modes of organizational learning are present in almost all performance management practices. Nonetheless there is a tendency. This segmentation of the Growth Management Canvas in left and right can also help to determine imbalances in a Growth Performance Management approach, and thereby avoid exploration and exploitation traps (see chapter 5.3).

Second, the Culture & Customer box is at the top left to symbolize its primacy over the other performance management practices. A growth company’s performance management system should be designed to facilitate learning, and the focus on learning is enforced by learning culture. The Culture & Customer box also combines cultural practices with elements of the business model logic to emphasize that the organizational culture should be about the customer and about the question what customers value currently and what customers might value in the future.

Third, the People box on the left and the Organization box on the right embody the pillars and boundaries of the growth company. Companies can grow only as much as people and organization allow. The People box carries the Culture & Customer box, thus emphasizing the tight interdependence between cultural practices and practices related to selection, socialization

and exit of organizational participants. The Organization box supports the Strategy & Execution box, thus emphasizing the interdependence between strategy and structure.

Fourth, the Goals & Feedback box is right at the center of the Growth Management Canvas. Operational goals and feedback on performance outcomes form the learning engine of the growth company. This is one reason why the OKR goal setting approach is so popular among scaleups. Goals and feedback represent the learning loop: setting goals, activity, methods and behavior to achieve goals, and getting performance feedback on success and failure. Goals and feedback have strong elements of both single loop learning and double loop learning; for this reason, the Goals & Feedback box spans over the left and the right side of the Canvas. In addition, operational goals and feedback interact with all other boxes of the Growth Management Canvas.

Fifth, the Incentives box and the Key Metrics box are at the center-bottom of the Growth Management Canvas. This is to symbolize that practices from these two components are particularly strong. Incentives and Key Metrics are foundations. Also, Incentives and Key Metrics can easily overpower other practices and hence should be designed with great care. Also, while Incentives interact particularly with practices of the People and the Culture & Customer boxes, Key Metrics interact especially with the Organization and the Strategy & Execution boxes.

Finally, the boxes of Goals & Feedback, Key Metrics and Incentives are at the bottom-center of the Canvas. Target setting, performance evaluation (feedback), performance measurement as well as rewards and penalties are the typical practices of management control systems. These practices build the classical management control loop.

6.5.4. A questioning framework

Working with questions. Purposeful frameworks should work with questions (e.g. Ferreira & Otley, 2009; Osterwalder & Pigneur, 2010). It is not enough to just provide headlines to the boxes of a framework. Questions can be formulated more precisely. Questions trigger creativity and action. Questions provide criteria for answers that fit to questions in contrast to answers that do not fit. Questions guide the way to answers. The questions to performance management – the performance management practices themselves – are always the same ones. Yet the answers – the design options and the actual designs – are different and depend on the context.

The components of the Growth Management Canvas are operationalized with five questions in each box and thus 35 questions in total. The Canvas works with what, how, when and who questions. What-questions indicate lists and relate to the direction and purpose of learning. What-questions typically include the why of learning; for instance, the question ‘what is our mission statement’ also includes why organizational participants should be motivated to learn about the company’s mission. How-questions indicate processes and relate to the means and

approaches of learning. When-questions indicate that the timing of a process is particularly relevant; when-questions relate to the timing of learning. Who-questions indicate a list of names or profiles and relate to the accountability for learning.

Use of the Canvas. Presentations about the Growth Management Canvas typically ask growth managers three overarching questions with respect to their Growth Performance Management approach: Can you answer all questions? Do you have good answers? Do all of you agree? In my experience, hardly ever do growth managers answer yes to all three questions or are satisfied with their answers. Based on these three types of questions, chapter 6.7 elaborates on several applications of the Growth Management Canvas.

The first question – can you answer all questions? – reviews whether a growth company has performance management practices in place. If yes, then great. If no, there can be good reasons or the practice should be adopted. The structure of the Canvas helps with prioritizing adoption and formalization efforts. The second question – do you have good answers? – reviews whether the answers, i.e. the practices’ designs, are functional, purposeful, work well with the most relevant interdependent practices, and foremost do help and not hinder learning. If the answers are good, then ok. If the answers are not satisfying, then the Growth Management Canvas can support in prioritizing the adoption, design or re-design of practices. The third question – do all of you agree? – reviews whether a growth company’s most relevant growth managers agree in their answers. In my experience, inconsistent answers can relate even to very essential performance management practices such as value propositions, organizational values or financial KPIs. Inconsistent answers can do serious damage to Growth Performance Management. The management team seems to not have a mutual understanding of priorities, lacks a shared definition about their business’ most essential performance dimensions, and gives conflicting signals to their organization. If the team is aligned, then it is great. If not, the Growth Management Canvas can help in developing a shared language, internal consistency and overall alignment.

Growth managers must find answers. Interestingly, most questions of the Growth Management Canvas are always answered somehow. All groups of people have some sort of culture and symbols for it, have something like a strategy and organization, think about selection and socialization, set goals and give feedback, measure results, and provide some kinds of incentive to be an active member of the group. In fact, most likely groups of people *cannot not* answer these questions. It is more of a gradual matter of activeness, deliberateness and systematization versus passiveness, unconsciousness and randomness. Are answers undirected, informal and just happened? Or are they managed, formal and designed deliberately? It is similar to Schmidt, Rosenberg & Eagle’s (2014, pp. 29-30) statement about organizational culture: “Most companies’ culture just happens. No one plans it. That can work. But it means leaving a critical component of your success to change. The smart approach is to ponder and define what sort of

culture you want at the outset of your company’s life.” The Growth Management Canvas is a framework to deliberately design Growth Performance Management.

6.6. The seven boxes of the Growth Management Canvas

6.6.1. Culture & Customer

What is our mission statement?

Definition. The mission statement defines the organization’s overarching purpose. It describes the larger human problem the organization is working on to solve. This fundamental problem inspires opportunity seeking. The mission can never be fully achieved, yet progress towards the mission can be made. The mission statement outlines the shared sense of meaning and communicates to all internal and external stakeholder why they should contribute to the organization.

Design considerations. The mission statement should be short and easy to remember. Its wording should be simple and engaging. The mission should be credible given founders’ history and the organization’s products and services. The mission should be controversial in the sense that it provides clear points of reference for discussions and decision-making. The mission should be attractive to all stakeholder groups and be present in the organization.

Hoffman (2018) states that “in order to scale, you have to tap into a fundamental human need”. Maslow’s (1943) well-known “hierarchy of needs” framework can thus help to develop high-quality mission statements. A good mission statement should relate to at least one out of Maslow’s (1943) fundamental human needs, as illustrated in table 50.

Examples for mission statements	Physical needs	Safety needs	Social belonging	Self-esteem	Self-actualization
Roche: "Doing now what patients need next."	✓	✓			
Walmart (2008): "To save people money so they can live better."	✓	✓			
H&M: "We want to make sustainable fashion choices available, attractive and affordable to as many people as possible."	✓		✓	✓	
LinkedIn: "To create economic opportunity for every member of the global workforce."		✓	✓		✓
Facebook: "To give people the power to build community and bring the world closer together."			✓	✓	
Netflix: "We connect people with stories."			✓		
Nike: "Bring inspiration and innovation to every athlete in the world. (If you have a body, you are an athlete)."	✓				✓

Source: company websites as of November 2019.

Tab. 50: Mission statements related to the hierarchy of human needs

Example. Google's mission statement is an exemplary one: "Our mission is to organize the world's information and make it universally accessible and useful." The organization of information is a relevant purpose and an old, large, lasting, never fully solvable human problem. It relates to several fundamental human needs. It motivates stakeholders to contribute to Google and inspired many Google products next to Google's search engine, such as Google Mail, Google Maps or the Android operating system. It is short, easy to remember and uses common language. Contrast Google's mission statement with the one from Nestlé: "Enhancing quality of life and contributing to a healthier future." This statement could be the mission of almost any organization. It is not controversial; it is trivial and always true. This statement is not driven by a clear human problem. Contributions to this mission cannot be clearly defined.

What is our vision statement?

Definition. The vision statement defines the organization's desired future state, the big aspiration, the shared dream and direction. In contrast to the mission, the vision can be realized. The achievement of the vision can be validated. The vision statement primes internal stakeholders for growth towards a vibrant, inspiring future.

Design considerations. The vision statement should be short and easy to remember. Its wording should be simple, engaging and compelling. The vision has a clear finish line; in the context of growth companies the timeframe is about 4 to 10 years. Vision statements should both inspire new value propositions and delineate the strategic boundaries of new ideas. The vision statement is effective rather inside the organization and should thus be appealing mainly to internal stakeholders. The vision should be particularly attractive to potential employees. Progress towards the vision can be measured.

Table 51 suggests a framework of eight categories of vision statements. Most visions relate to one of these categories. These categories are not mutually exclusive. Vision statements should relate to a key performance indicator, which could be termed the 'vision KPI'.

Statement category	Vision statement	KPI
Customer vision	Netflix: "A hundred million members is a good start, but we want to entertain everyone."	Nr. of users
Market penetration vision	Microsoft (1970s): "A personal computer in every home."	Nr. of PCs
Market disruption	Tesla: "To create the most compelling car company of the 21st century by driving the world's transition to electric vehicles."	Nr. of electric cars; market share
Role-model vision	Stanford (1940s): "Become the Harvard of the West."	University rankings
Market leader vision	Nice (1960s): "Crush Adidas!"	Market share
Size vision	Walmart (1990): "To become a USD 125bn company by the year 2000."	Revenue
Brand vision	American Express: "We work hard every day to make use the world's most respected service brand."	Brand rankings
Impact vision	TED: "Ideas worth spreading."	Nr. of TED talks
The huge achievement	SpaceX: "To revolutionize space technology, with the ultimate goal of enabling people to live on other planets."	Achieved: yes or no

Source: company websites as of October 2019.

Tab. 51: Nine categories of vision statements and vision KPI

Some companies have only mission statements, while other companies have only vision statements. For example, Google uses a mission only. This can work. However, to support growth it might be essential to communicate to stakeholders both the organization's ongoing contribution to society and the future they can be part of.

What are our core values and behavioral standards?

Core values vs. behavioral standards. Core values systems are a positive, prescriptive practice. Core values outline the beliefs about right, the dos, the desired mindset and behavior. Behavioral standards, in contrast, are a negative practice. Behavioral standards outline the beliefs about wrong, the don'ts, the risks, the boundaries of action. Core values and behavioral standards depend on each other and should hence be thought together.

Definition core values. Core values are an organization's essential and enduring principles. Core values have intrinsic value to members of the organization. Core values guide individual action and create organizational patterns of behavior. Core values are rooted in founders' values as well as a company's business, history and traditions. Values can be core values, aspirational values or accidental values.

Design of values systems. Core values should be about three to ten, short, compelling, easy to remember statements. Core values should be controversial – it should be possible to disagree with them. Core values should be actionable and decisive – it should be determinable when actions and decisions conform to or contradict values. Values systems should highlight the relevance of performance measurement. Core values should correspond to an organization's mission, vision and general line of business. Core values should be formalized early on. Core values systems should be structured in a way that they create a learning culture. More specifically, core values systems should be designed to facilitate knowledge acquisition, information distribution, information interpretation and organizational memory; and core values systems should balance exploration and exploitation.

Example	What is true performance	How to work together	How to work individually
Airbnb	Champion the mission	Be a host	Be a 'cereal' entrepreneur
Amazon	Customer obsession	Have backbone; disagree and commit	Learn and be curious
Facebook	Build social value	Be open	Move fast
Google	Focus on the user and all else will follow	Don't be evil	You can be serious without a suit
LinkedIn	Members first	Be open, honest and constructive	Act like an owner

Source: company websites as of November 2019; selection of values, not entire values systems.

Tab. 52: Three categories of core values with company examples

The practical core values framework suggests three categories (two categories of the analysis in chapter 4.1.1 are conflated here). First, what is true performance: Values in this category relate to decision criteria about who or what decides about the performance that the organization

is to deliver. Second, how to work together: Values in this category relate to the expected behavior of organizational members towards each other, the way they interact with each other, how they share information and how decisions are made. Third, how to work individually: Values in this category relate to the mindset employees bring to the office, their personal work ethics, and the way organizational members act when no one is controlling them.

Core values systems should include at least one value in each of these three categories, as illustrated in table 52. In many cases, core values relate to several of these three categories. Ideally all three categories cover values that relate to both exploration and exploitation.

Definition behavioral standards. Behavioral standards are codified rules and norms that intend to prevent or mitigate key risks to the company's success and survival. Behavioral standards establish limits to behavior. Their purpose is to define the acceptable domain of activity of the organization. The establishment of boundaries is a prerequisite for the delegation of decision-making, for allowing flexibility, and for the courage to be entrepreneurial and creative. Simons (1995, p. 41) uses an analogy that fits well to growth companies: "Ask yourself why there are brakes in a car. Is their function to slow the car down or to allow it to go fast? Boundary systems are like brakes on a car: without them, cars (or organizations) cannot operate at high speeds."

Design considerations. Behavioral standards should exist for the whole organization. Often, they are customized for functions, teams and organizational roles. In order to be effective, growth companies should specify only a few behavioral standards that address the most significant ethical, safety, quality, compliance, social and business risks. In order to be credible, behavioral standards should be formally linked to a range of possible penalties. Behavioral standards should cover the main categories and can relate to the potential sources outlined in table 53. Behavioral standards are often codified in codes of conduct.

Main categories	Potential sources
Sustainability of the business model	Key business risks
Quality standards	Laws
Compliance with laws and regulations	Regulations
Work environment and safety	Corporate social responsibility
Financial integrity and responsibility	Social norms
Use of company assets	National culture
Confidentiality and data security	Organizational culture
Fraud, bribery and corruption	Professional associations
Standards of ethical conduct	Institute of Business Ethics

Tab. 53: Main categories and potential sources of behavioral standards

Evolution. Core values and behavioral standards should evolve over time. They develop from implicit values and standards, which are held by founders and leaders, to explicit statements, and from explicit statements into systems and codes. Core values should be stable, yet should be reviewed if the organization's mission and/or business changes significantly. For instance,

Mark Zuckerberg tried to change Facebook's famous core value "move fast and break things" into "move fast with stable infrastructure", because Facebook evolved from users' internet profiles to a technology platform with an infrastructure open to external programmers (Baer, 2014). However, the early core value was so deeply ingrained into Facebook's culture that employees resisted the new version. Facebook changed the formulation into "move fast" eventually. Likewise, growth companies should start with a few behavioral standards, outlined in employee and leadership handbooks as well as onboarding presentations, before developing behavioral standards into an official code of conduct.

What are our value propositions to our customer groups?

Definition. The value proposition statement as a performance management practice refers to the dynamic question of what customers value and expect from a growth company's offering. Each value proposition consists of a selected bundle of products and/or services that caters to the requirements of a specific customer group.

Different customer groups often require different value propositions. Customer groups can be differentiated by their specific problem or need, the types of customer relationships, the types of distribution channels as well as their potential profitability and willingness to pay for different value propositions. In many businesses not only customers who buy products require value propositions, but also other stakeholders such as suppliers, employees or a community.

Design considerations. The value proposition statement should be short, catchy, easy to understand and can be explained with a simple example. Value propositions should be targeted to clearly defined customer groups. Value propositions should be consistent with or at least not contradict mission and vision. Towards customers, value proposition statements should be communicated as slogans. Towards employees, value propositions should be communicated as goals, so that activity towards these different goals can be defined clearly and feedback on customer value propositions is measurable. In other words, value propositions should be testable and enable learning. Ideally a value proposition statement relates to a performance measure that captures this specific customer group's perceived value.

Table 54 outlines three basic ways of thinking about value propositions (extended from Osterwalder & Pigneur; 2010, pp. 23-25; Osterwalder, Pigneur, Bernarda & Smith, 2014, p. 12). This list is not exhaustive and categories are not mutually exclusive. Yet mostly value propositions relate to these types. Financial value propositions are often particularly strong. In fact, most of the fast scaling companies of recent years, such as Uber, Airbnb or Groupon, offer strong financial value propositions for both sides of their platform.

Qualitative value propositions	Quantitative value propositions	Customer jobs
Product or service quality	Pricing strategies	Functional jobs
User experience	Revenue generation	Task-related jobs
Convenience and usability	Savings or cost reduction	Social jobs
Accessibility	Risk reduction	Personal / emotional jobs
Design	Time	Security jobs
Brand	Speed	Support jobs: buyer of value
Customization	Volume	Support jobs: co-creator of value
Newness		Support jobs: transfer of value

Tab. 54: Basic types of value propositions

Customer-centric culture. Founders initiate their startup with a general idea of a value proposition to customers as well as a rough prototype to deliver it. Ries (2011) writes of “value hypothesis” (p. 61) and “minimum viable product” (pp. 93-94). A learning culture describes the ability to learn about solving problems in order to satisfy customer needs. Founders should build their organizational cultures around customers and value propositions to them.

What practices do we use to make our culture visible and tangible?

Definition. Growth managers can deliberately use office design, rituals and events, stories and symbols as performance management practices. These practices make other, mostly information-based practices visible, tangible, observable, and in some cases even sensible. These practices symbolize, enforce and reinforce information-based practices and support learning processes about them. For the larger part, such performance management practices relate to organizational culture. Often, these practices are rewards, which demonstrates the strong link between culture and incentives.

Categories	Example practices
Places	Location of the office, office design, workplace decorations, home office, dogs in the office, physical constraints, restricted areas, ...
Benefits	Food and beverage, tickets for public transport, company cars, sports and fitness offerings, laundry service, language courses, ...
Rituals	Regular meetings, all-Hands meetings, celebrating birthdays, promotion ceremonies, welcoming new employees, lottery lunch, ...
Events	Parties, team events, team activities, company vacation, sport groups, cooking together, pub nights...
Language	Official company language, naming employees, naming meeting rooms, swearing, public praise, manners of address, ...
Stories	Founding stories, firm history, war stories of the early days, myths about the founders, magazine articles, customer success stories, ...
Symbols	Logos, dress code, clean-desk-policy, Apple computers, wall papers, PowerPoint designs, role models, branded giveaways, ...
Images	Values on the wall, team video, team photos, books, social media, employee pics and story wall, ...

Tab. 55: Practices for cultural visibility and tangibility (extended from Schein, 2008, pp. 25-27)

Design considerations. There are eight categories of this type of performance management practices for visibility and tangibility (table 55): places, benefits, rituals, events, language, stories, symbols and images. These categories are not exclusive, often mutually dependent and work in combinations with each other. Organizations typically use all these practices in some way or the other. These practices have profound effects on employees’ mindsets and wellbeing,

creativity and productivity, communication and information flows and learning processes. For this reason, these practices should be designed deliberately and with consistent reference to underlying practices.

Comments. Four comments shall be added to the design and use of these performance management practices. First, practices related to places and work environment are often also constraints to action and behavior of employees. Although these practices do not relate to organizational culture, they are important and need deliberate designing as well. Second, practices such as places, benefits, rituals, events and symbols cost money, time and attention. Growth companies have a tendency of using too many of these practices. Therefore, these practices require trade-offs and a clear concept for design and use. Third, practices related language, stories, symbols and images need to be used frequently, especially by leaders, in order to effectively influence behavior. Fourth, places, benefits, rituals, events, language, stories, symbols and images can be systematically designed and formally deployed. However, in order to be accepted by employees, these practices should not appear as formal practices, but rather as ‘natural’ products of the organization as a cultural community.

6.6.2. Strategy & Execution

What are our strategic objectives and strategies?

Definition. Strategic objectives define a growth company’s measurable ambitions in its business’ most essential performance areas. Strategic objectives are set on the company level. Strategy is defined as an integrated concept of specific initiatives of how a growth company intends to achieve its strategic objectives.

Design considerations. Strategic objective and strategy must express growth managers’ ambition to grow. Strategic objectives should be derived from a company’s mission, vision and set of proven value propositions. Strategic objective should be simple statements for all relevant performance areas. Performance areas can refer to: financials, customers, users, partners, suppliers, products, services, systems, processes, employees, the organization, leadership, investors, competitors, regulators, etc. Growth managers should identify the most relevant five to seven performance areas for the period they set strategic objectives for.

Growth managers should put effort into precise wording. Strategic objectives should be measurable or at least clearly verifiable; put differently, strategic objectives should include KPIs. In the context of growth companies, strategic objectives are to be achieved over a timeframe of twelve months and maximal two years. Strategies should outline the general path and specific initiatives to achieving each strategic objective. Growth managers should focus on strategic objectives and less on strategies, as strategies can be adapted on the way. Strategic objectives should be the main focus of strategic management processes.

On a high level, strategic objectives and strategy should be able to be summarized on one page. Each statement for each performance area is short, like a tweet on Twitter. These statements can be used as the headlines of slides in the business plan, which then provides more details such as detailed initiatives, accountabilities, deadlines or sequence of moves.

Strategic thinking. Growth and growth strategy are paramount and pervasive to growth companies. Strategic thinking is present in many performance management practices, not only in strategic objectives and strategy. Mission and vision provide strategic perspectives. Organizational values, behavioral standards, rules and operating principles create strategic patterns of organizational behavior. Vision, value propositions, customer groups and scaling unit concept determine strategic positions. Business plans, organizational design and performance measurement system outline plans for strategy execution. This creates complexity. Growth managers must ensure that performance management practices do not contradict each other on strategic matters.

What are our core processes to deliver our value propositions to our customers?

Definition. A process is a pre-defined sequence of activities that must be repeated reliably over time in order to accomplish tasks and to achieve respective goals. ‘Core’ are those processes that are implied by a company’s business model and associated value chain, that significantly contribute to growth, and/or that consume significant resources. In the context of growth companies, knowledge, learning, innovation, strategic direction and competitive advantage are bound in and developed through core processes. Core processes are typically structured by information systems.

	Strategic processes	Operational processes
Management approach	Leadership team attention and learning	Management by exception
Performance management practices	Founders' and middle managers' roles Strategic rules and principles Strategic performance management system Operational target setting process Subjective performance evaluation Non-financial rewards and informal penalties	Clearly defined roles and responsibilities Procedures and policies Operational performance measurement system, with almost always only non-financial KPIs objective, formulaic performance evaluation Financial rewards and formal penalties
Examples	Sales and marketing Product development Recruiting	Customer service Logistics Accounting

Tab. 56: Core processes analysis

Design considerations. Growth works through repeatable processes. Growth managers should categorize their core processes in either strategic processes or operational processes (table 56). Strategic processes are essential for a growth company’s business model and work towards the achievement of strategic objectives. Strategic processes require attention and learning by the leadership team. In contrast, operational processes can be highly standardized, can be measured well, and process knowledge is advanced. Operational processes can be managed by exception.

This categorization of core processes can help to prioritize the use of leaders' attention, to coordinate employees and to increase efficiency. This categorization should also result in different approaches to performance management.

Transitions. Core processes can and should switch between these two categories. The strategic management process should analyze potential transitions. Typically, strategic processes transition to operational processes. This transition reflects learning and demonstrates a growth company's focus on execution. This transition typically involves the increased use of information systems. In some cases, operational processes can switch back to become strategic processes, for instance when it turns out that more process knowledge needs to be generated or when the business model is changed significantly. Some processes, such as sales and product development, are always strategic for growth companies.

What is our scaling unit?

Definition. Simply put, more of the scaling unit results in more growth. The scaling unit involves those functions and processes that first sell and then deliver the value proposition to customers. Associated process knowledge is already quite standardized. Process execution is measurable. Processes are documented, explicit and can be transferred to further situations.

Design considerations. The analysis of a growth company's scaling unit begins with organizational functions and core business processes. Growth managers should understand which functions sell and which functions deliver value propositions to customer groups. Growth managers then should analyze the horizontal core processes that perform the necessary activities. Typically, decentral organizational functions and operational processes are predominant in scaling units, yet centralized functions and strategic processes contribute. Operational processes are measurable and can already be partly automated. In scaling units, performance management practices are largely standardized and focus on execution.

Examples. Chapter 4.1.3 elaborates in depth on diagnostic centers as AlphaCo's scaling unit. AlphaCo grows by opening more diagnostic centers. In diagnostic centers, organizational functions and associated roles and responsibilities as well as operational processes are very explicit. Process know-how is standardized and documented in procedures and guidelines. This process knowledge can be transferred to future diagnostic centers. Four headquarters functions and their strategic processes are established to learn about operational processes in diagnostic centers. At BetaCo, the scaling unit is likely at the intersection of selling more products with a fitting marketing mix. DeltaCo's scaling unit are the international sales offices. For platform business models such as Groupon, Uber or Airbnb, cities are the scaling unit.

What is our business plan?

Definition. The business plan is a comprehensive document that outlines key qualitative and quantitative aspects of the growth company. It covers significant past achievements, the current situation as well as future aspirations.

Design considerations. The business plan should cover the ten key aspects outlined in table 57. Growth managers can use the business plan for analysis and communication purposes in order to reflect, document and communicate key learnings about business. The strategic management process should use the business plan as an analytical framework. However, the structure and content of the business plan needs to evolve with every iteration. Financial plans need to be updated monthly.

Business plan aspect	Descriptions
Organizational culture	Mission, vision, organizational values system.
Business model	Customers groups, value propositions, product portfolio, pricing strategy.
Market analysis	Market size, go-to-market strategy, analysis of customers groups.
Core processes	Technology and processes to deliver value propositions.
Growth strategy	Strategic objectives and strategies, strategic rules, core business processes.
Competitor analysis	Analysis of competing companies, substitute products, threat of new entries.
Partners	Analysis of risks and opportunities for strategic partners and suppliers.
Financials	Financial results and financial planning, including non-financial KPIs.
Organization	Leadership team, board of directors, advisory board, organization chart.
Company history	Company history, stories, key successes and milestones.

Tab. 57: Ten business plan aspects

Financial planning. Financial plans are a particularly relevant part of the business plan. The financial planning should define the minimum necessary and the maximum possible financial performance. It should translate financial resources into time that a growth company has to achieve certain strategic objectives. The financial planning should use non-financial KPIs to calculate financial KPIs. Such analysis of non-financial drivers contributes to the development of strategic performance measurement systems.

How and when do we review and formulate our strategy (strategic management process)?

Definition. The strategic management process formulates a growth company's strategic objectives and strategies. The process also reviews several central performance management practices. The process has four steps: preparation, review, formulation and communication.

Design considerations. Strategy workshops are only as good as their preparation. Preparation includes that workshop participants evaluate their performance versus current strategic objectives and develop ideas for adapting existent or setting new strategic objectives. Founders should develop a clear idea of future strategic objectives as well as prepare a thorough financial planning.

Review and formulation are typically part of the same strategy workshop. Strategy workshops should take place outside the office (strategy offsite). Review includes that actual performance versus previous strategic objectives is evaluated. Strategy formulation includes that strategic objectives and strategies are developed. Focus should be on strategic objectives. Strategy formulation should also include to adapt performance management practices, especially business plan, organization structure, core processes, performance measurement system, strategic rules, policies and procedures, and meeting schedules. The Growth Management Canvas total analysis, quick check and internal consistency analysis can help in analyzing the need for adaptation (see chapters 6.7.1, 6.7.2 and 6.7.3).

Communication prepares strategy implementation. Communication includes that strategic objectives and strategies are conveyed to the organization. Communication can take place through meetings, presentations and workshops with employees as well as through re-designing the performance management practices outlined above.

The strategic management process needs to find a balance between participation and direction. The strategic management process should include all growth managers in order to leverage their professional knowledge and function-specific information, motivate them, and prepare communication and implementation. Founders need to lead the process, especially by formulating strategic objectives. Middle managers from growth supporting functions assist.

The strategic management process should be well planned and organized. Strategy workshops should take place at least every six months. Smaller growth companies, which still adjust their business, should do strategy workshops more often, i.e. every three or four months. Alternatively, smaller growth companies can conflate strategy formulation with operational target setting. Strategy workshops and especially strategy offsites should be accompanied by social events and measures for team building.

Strategy implementation. Strategies are not implemented just because they are formulated. Often, there is a significant gap between founders' strategic thinking and employees' state of information. Strategy implementation is only as good as the strategies the organization executes on. Strategy formulation takes time and requires both contemplation and intense discussions. The strategic management process is designed to alternate between strategy formulation and strategy implementation. The process makes a difference between searching for strategic direction and execution. The process provides a (learning) rhythm to the organization – a rhythm between action and reflection.

6.6.3. Organization

Who belongs to our leadership team?

Definition. A growth company's leadership team consists of the founders and the middle managers. Investors, key employees and other stakeholders, who have both an operational and strategic role, should also be considered as part of the leadership.

Founder team composition. The optimal founder team has three founders. The 'single founder risk' should be avoided. Four or more founders can result in coordination problems. Founders should contribute different professional competences and personalities. Roughly, competences should cover marketing and sales ('sales founder'), product development and technology ('product founder') as well as operations and administration ('operations founder'). Some specific business can involve additional competences. If the founder team does not cover these three areas of competence, one of the early hires to the middle management likely relates to the missing competence. Personalities should be diverse: risk taking as well as risk averse, extravert as well as dependable, creative as well as structured. Professional backgrounds and personalities should result in constructive conflict. Founders should be able to quickly switch between exploration and exploitation.

Design middle management. The introduction of a middle management is a critical change. This change comes earlier than founders might expect, as outlined in chapter 6.2. Middle managers are specialists who lead one or more organizational functions. Middle managers have a profile challenging to find: experienced and still ambitious; executioners and strategic thinkers; specialists in their fields and generalists enough to take on unfamiliar roles; leaders and loyal to founders. Above all, middle managers must fit to organizational culture. The first hires to the middle management should depend on weaknesses and gaps in the founder team's set of competences. Often, early hires are for growth supporting functions or business specific functions. Founders should find the right balance between external hiring and internal promotion to the middle management. Founders' capability to hire middle management is a crucial sign for success.

Performance management. The introduction of a middle management changes Growth Performance Management profoundly. The growth company develops from a two-layer to a three-layer hierarchy. The growth company increasingly collaborates and coordinates horizontally, in contrast to vertically. Founders need to change their management approach from management by communication to management by context. Founders have to design performance management practices that balance the tension between founders' control and middle managers' participation. Managing this tension is most essential for the strategic management process, core business processes, the organization's functions, information flows and systems, the target setting process, performance evaluation and the recruiting process.

What is our organization structure?

Definition. The organization structure specifies accountabilities, roles and responsibilities, decision rights and tasks for organizational members. Organization relates to six design choices: layers of hierarchy, organizational functions, decision-making authority, core processes and scaling unit as well as meeting schedules. Core business processes and scaling unit are discussed in Strategy & Execution. Meeting schedules are discussed below.

Layers of hierarchy. Layers of hierarchy should be clearly defined. Typically, a growth company transitions from a two-layer hierarchy to a three-layer hierarchy. A three-layer hierarchy means that employees report to middle managers and middle managers report to founders. If the founder team's required competences are not complete, then employed leaders should be installed on the same hierarchical level as the founders.

Organizational functions. Growth companies typically design functional organizations. Other organizations, such as a matrix or a project-based structure, should be used only with good reason. Functions are further defined by roles to be assumed, responsibilities to be fulfilled and tasks to be accomplished. In larger organizations functions can be further divided into teams. Functions and teams should have definite and unambiguous names and dedicated managers. Organizational functions should be derived from the business model, core processes and scaling unit. As the organization grows, the larger part of functions should be headed by middle managers.

Most growth companies establish the following generic functions to deliver their value propositions (primary value chain): sales and marketing, product development and management, operations, customer service. Operations should be further defined by the business model. Most growth companies design the following functions to support the delivery of value propositions (growth supporting functions): finance and accounting, business intelligence, human resources. Some business models and associated growth strategies require the design of business specific growth supporting functions.

Most functions are centralized. Some companies' businesses also require decentralized functions. Typically, these decentralized functions are the scaling unit or are a significant part of scaling units. Growth managers should take care that the organization structure considers the interfaces between those functions that comprise a growth company's scaling unit.

HR council. A particularly relevant organizational institution is the HR council. The HR council should take systematic and transparent decisions on the selection of new employees as well as the allocation of rewards and the application of penalties. The HR council can also conduct formal performance evaluations.

Decision-making authority. Decisions should be made fast and by those who possess specific information. Decisions also need to be consistent with the growth strategy. Thus, decision-making authority should be decentralized as much as possible, yet according to centralized standards derived from the strategy. The transition from two-layer hierarchies to three-layer hierarchies involves that founders develop from making decisions directly and centralized to designing the context for decentralized decision-making.

Performance management practices create the context for fast and consistent decentral decisions. The most relevant practices include: mission and vision statements, organizational values system and behavioral standards, value proposition statement, strategic objectives and strategies, core business processes and standardized tasks, organizational functions, strategic rules, procedures and policies, and key performance measures.

Organization and KPIs. Every business model involves the management of certain specific, typically non-financial KPIs. KPIs provide high-level ‘job descriptions’ for each organizational function. A business model’s most essential key performance measures are thus a strong indication for the design of organization structure. KPIs and organization need to be in line.

Target organizational chart. Startups tend to structure their organization around their leaders. This approach works well for testing a business idea and acquiring the first customers. In contrast, growth companies should not build their organization on individuals. Growth companies should structure their organization in line with its business model, and respective core business processes and scaling unit. A ‘target organizational chart’ should be crafted to provide clarity and specificity about what functions are required, what roles need to be filled, and who has what decision-making authority.

What are our rules, procedures and policies?

Definition. Rules prescribe and coordinate employees’ activities. A procedure is a list of rules and key actions. Procedures typically administrate recurring processes. Policies are formal practices that communicate rules and procedures. Rules, procedures and policies are strategic, when they administrate core processes, relate to key aspects of the business model, relate to key aspects of the growth strategy, or address severe business risks. Rules, procedures and policies are typically enforced by penalties.

Design considerations. Rules, procedures and policies should be designed as short, specific, and simple statements, so that employees follow them and so that they can be adapted easily. They should enable decentralized decision-making. Rules, procedures and policies should be crafted and adapted in a centralized, transparent process and approved by formal, regular meetings. Support functions are often responsible for communicating and enforcing rules, procedures and policies.

Strategic rules. Contrary to expectation, rules are a particularly effective performance management practice for growth companies. Strategic rules capture growth company's key learnings about business model and growth strategy. Strategic rules should be designed so that they balance clear strategic direction with flexibility in execution. They should be simple, limited in number, and tailored to a specific activity and user group. A strategic rule should be associated with a strategic objective and a core business process. As illustrated in table 58, there are four types of strategic rules: selection, priority, process and timing rules.

Strategic rule type	Core question
Selection rules	Which business opportunities should we pursue? And which not?
Priority rules	Which of the selected business opportunities are most important for us?
Process rules	In what unique way do we execute on a business opportunity? And how do we not work?
Timing rules	When should an activity take place? When should an activity stop?

Tab. 58: Four types of strategic rules (adapted from Sull & Eisenhardt, 2015)

Expense policy. An important type of policy administrates the use of and decision rights over financial resources. 'Expense policies' or 'spending and transaction policies' should be short, simple, easy to remember and signal some trust to employees. Expense policies should be introduced early to avoid two extremes: employees spend too much of the company's money and employees are afraid to invest money at all.

Evolution. Situations, business environments and performance areas can be stable and predictable or unstable and unpredictable. Stability and predictability imply the use of more detailed rules, procedures and policies in order to increase efficiency. Instability or unpredictability imply fewer rules and less detailed procedures and policies in order to increase flexibility and adaptability. Rules, procedures and policies should be reviewed and adapted on a regular basis in order to allow further learning.

What are our regular meetings?

Definition. The meeting schedule arranges regular communication between employees. Regular meetings establish deadlines and introduce a work rhythm. Meeting frequencies create performance pressure. The pre-defined list of participants to certain meetings underscores organization structure.

Design considerations. Growth managers tend to over-use and under-estimate meetings as a performance management practice. Too many regular meetings should be avoided so that the schedule creates meaningful and effective rhythms and credible deadlines. Regular meetings should have clear, catchy, unambiguous names. Agendas and presentations should be consistent. The most relevant parameters of a meeting schedule are meeting purposes, meeting frequencies and meeting participants.

Type of meeting	Purpose and participants	Suggested frequency
Founders	Regular information sharing, coordination and decision making by founders	Weekly or bi-weekly
Leadership team meeting	Regular information sharing, coordination and decision making by founders and middle managers	Bi-weekly or monthly
Leaders' one-on-ones	Regular information sharing, coordination, decision making between founders and direct reports	Weekly or bi-weekly
Team meeting	Regular information sharing and coordination of teams internally	Weekly
Cross team meeting	Regular information sharing and coordination between teams	Weekly or bi-weekly
Board meeting	Information and decision making by board of directors and founders	Quarterly
Strategy workshop	Strategy formulation and strategic decision making by founders and middle managers	Quarterly or bi-annually
Target setting	Meetings to set targets, mostly on functional and employee levels	monthly, bi-monthly or quarterly
Performance reviews	Meetings to measure and evaluate performance on company, functional and employee level	Quarterly or bi-annually
HR council	Decision making about hiring, exits, salary increases and other personnel-related decisions	Weekly
All hands meeting	Information sharing and discussion with all employees	Monthly

Tab. 59: Eleven essential types of meetings

Meeting rules. Meetings require rules to be effective. Meetings should have a clear purpose. Meetings should not be canceled on short notice. Agendas should be phrased in the form of questions. Meetings should have a meeting owner. Meetings should be prepared. Meetings should start and end in time. Discussions should be constructive and fair. Decision-making should be transparent. Meeting participants should focus on the meeting. Meeting protocol should be used only where necessary, but if protocols are used then they should be used strictly.

Evolution. Meeting schedules should evolve together with the organization. A startup does not require all meetings outlined in table 59, yet a large part of performance management is achieved through meetings. In contrast, a growth company of more than 50 employees might need all of these meetings and at the same time manages performance mostly through other formal practices. Meeting frequencies and participants evolve as well. Startups should use short frequencies and invite rather more than less participants. Growth companies should lengthen meeting frequencies and focus on contributing participants.

What information systems do we use?

Definition. Growth Performance Management relies strongly on information systems. Information systems are used as a mean to codify and diffuse information as well as to structure processes and respective flow of information.

Design considerations. Information systems are used in three areas: core processes, collaboration and support functions (table 60). First, information systems should be used to structure, digitize and partly automate core business processes. Typically, information systems for a growth company's business processes represent its core innovation and intellectual property. Second, information systems should be used to digitally organize the collaboration

between employees as well as the productivity of each individual employee. Third, information systems should be used in support functions to facilitate the supply of critical financial and non-financial information.

IS for core business processes	IS for collaboration	IS for support functions
Customer relationship management	File hosting	Recruiting software
Marketing software	Microsoft office (or similar)	HR management
Purchasing software	Project management	Shifts planning
Operations software	Messenger and communication	Accounting system
Logistics software	Ticketing system	Financial planning
Customer service software	Wiki	Travel expenses
Full enterprise resource planning	Knowledge management	Business intelligence software
...

Tab. 60: Types of information systems (IS)

Adoption. Information systems support performance management by the diffusion of relevant information. Information systems can also hinder performance management practices, as codifications of information can be quite persistent. Generally, information systems benefit growth companies, yet in most cases fewer systems are better than many.

Information systems for collaboration and support functions should be adopted early to reduce friction, create standards and professionalize the organization. Information systems for core business processes should be used with care: They should be adopted and/or developed not too early to allow for further learning, and not too late to avoid inefficiencies as well as competitive disadvantages.

6.6.4. People

Who do we select?

Definition. Growth companies often need to recruit many employees in a short period of time. The selection of employees should consider three attributes of fit between company and candidate: cultural fit, competence fit, and leadership fit (table 61). Performance management practices provide criteria and standards for determining these attributes of fit. The systematic selection of motivated and capable colleagues is one of the strongest non-financial rewards for high-performers.

Design considerations. Cultural fit requires that candidates are convinced of and willing to contribute to mission, vision, organizational values, and value propositions. Values systems are a particularly dominant practice when selecting employees. Competence fit requires that candidates' education and professional experience correspond to respective strategic objectives, strategic business plan, responsibilities in business processes, role in the organization as well as KPIs to be managed. Leadership fit requires that candidates are comfortable with the way the growth company sets strategic objectives and operational goals, evaluates performance, provides informal feedback, selects new employees, and decides about rewards and penalties.

Attributes of fit	Performance management practices
Cultural fit	Mission statement, vision statement, organizational values system, value propositions.
Competence fit	Strategic objectives and strategies, strategic business plan, responsibilities in core processes, role in the organization, key performance measures.
Leadership fit	Strategic management process, approach to employee selection, operational goal setting process, performance evaluation processes, informal feedback, decisions about rewards and penalties.

Tab. 61: Three attributes of fit and performance management practices

These three attributes might be weighted differently for leaders on founders' level, middle managers and employees. Trade-offs between attributes of fit are necessary dependent on the growth company's strategic situation. Yet cultural fit should never be compromised. Competence fit can be compensated by fast learning, a growth mindset and willingness to put effort into one's work. Especially middle managers should be 'learning animals'. Most middle managers should be able think strategically and execute well in daily operations. Future potential is more important than past performance.

Job descriptions should detail the reasons why a candidate should apply with the growth company. These reasons typically refer to mission, vision, values, value propositions as well as visible parts of culture such as office design. In addition, job descriptions define roles and responsibilities as well as qualifications expected from candidates. Growth companies should open the recruiting funnel in the way that they describe roles rather generally, go relatively low on qualifications and then test candidates intensely in the recruiting process.

From generalists to specialists. With respect to competence fit, selection evolves from generalists to specialists. Startups should hire generalists – managers and employees that can take over several roles. Growth companies should increasingly hire specialists. Especially middle managers should bring in professional knowledge and experience.

Selection and other practices. When reflecting about Google's performance management approach, Schmidt, Rosenberg & Eagle (2014, p. 95) conclude: "Hiring is the most important thing [managers] do." Indeed, the selection of employees is a highly relevant performance management practice. Selection also influences the operation and effectiveness of all other practices. At the same time, almost all other practices provide criteria and standards for selection. Selection cannot compensate for other formal practices (what Schmidt, Rosenberg & Eagle seem to imply), and practices cannot compensate for adverse selection. Selection and the other practices of a holistic Growth Performance Management approach are mutually dependent.

How do we hire (recruiting process)?

Definition. The recruiting process outlines steps to gather data and form opinions in order to systematically decide about potential employees. The recruiting process typically includes the following six steps: hiring plan and job description, call, formal assessment, reference checks, hiring decision, and job offer.

Design considerations. First, the hiring plan outlines what roles need are to be filled. The hiring plan should be informed by growth strategy, strategic business plan, core processes, roles in the organization structure as well as KPIs to be managed. Target organization charts, impact on financials as well as detailed job descriptions are good means to determine and review hiring plans.

Second, the process should start with a phone or video call by the recruiter or the hiring manager. The call should induce candidates' curiosity, review salary expectations and availability, ask for references as well as conduct a superficial review of cultural fit.

Third, the formal assessment systematically reviews cultural fit, competence fit and leadership fit. There are many ways to evaluate attributes of fit: interviews, cognitive tests, role plays, case studies, presentation tasks, trial days etc. All these ways should link back to performance management practices. The formal assessment should take place in person and at the office, as the office design reflects organizational culture and is a relevant non-financial group reward.

Interviews are a classical instrument for assessments. Interviewing is a skill that needs dedicated training. Candidates should be interviewed by founders, managers, colleagues on the same organizational levels and their potential subordinates. The human resources function should prepare these interviewers with structured questions and determine who focuses on what attribute of fit. Questions should determine candidates' potential future performance. Questions should not relate to topics that can be evaluated by other information such as CVs, certificates or references. Questions should go both ways.

Fourth, reference checks should be done before the formal assessment. Candidates' willingness to provide references signals true interest in the job. Candidates' ability to provide references indicates performance on previous jobs. Informal channels should be used.

Fifth, the hiring decision is made based on a formal assessment. The hiring decision should be made by a hiring committee or the HR council. The hiring manager should have a veto right. These decision-making meetings should have three or five members from different backgrounds. Hiring decisions should be made by consensus. Founders should review every offer. Candidates should know how the hiring decision is taken.

Sixth, in case of a positive hiring decision, the job offer should be made fast. The offer call should provide detailed feedback about the formal assessment and determine a start date.

Importantly, the offer call should advertise job and company. The offer letter should suggest a compensation package.

Relevance. Recruiting must have founders' and managers' full attention. Especially the recruitment of middle managers can hardly be delegated. Founders and managers can multiply their effectiveness with capable employees. Talented employees can choose their jobs and leaders need to provide reasons why they should join their growth company. Founders and hiring managers should lead the recruiting process. The human resources function mostly administrates. Structure and speed matter. The recruiting process contributes particularly to organizational culture, presents the company to the outside and is part of the onboarding process. Therefore, the candidate experience needs to be designed and shaped deliberately.

How do we educate new employees (onboarding process)?

Definition. The onboarding process educates new employees systematically about the growth company and their respective roles and responsibilities. The goal is to teach new employees about all practices of the Growth Management Canvas.

Design considerations. The onboarding process should have a general part and a role-specific part. The general part should be administrated by the human resources function and convey general knowledge about the company: culture, customer, strategy, core business processes, leadership team, organization structure, general rules and policies, meeting schedules, general information systems, operational goal setting process, strategic performance measurement systems, rewards and penalties. Topics such as culture and strategy should be delivered by senior managers. The role-specific part should be conducted by the hiring manager and convey knowledge about the new employee's role and team: sub-culture, team strategy, processes, members of the team, rules, procedures and policies, meeting schedules, team specific use of information systems, definitions of KPIs to be managed as well as rewards and penalties.

Elements of a good onboarding process include: a warm welcome, meeting the founders, meeting the team, easy access to knowledge and information systems, a comprehensive and meaningful employee handbook, the possibility of quick successes in the new job, clear expectations of the first 10, 30, 90 and 180 days, early and honest feedback as well as formal performance reviews. New employees should also get to know the customer, irrespective of what role they have.

Relevance. New employees' first impressions are lasting and difficult to revert. After the recruiting process, the onboarding process is the main practice of socialization. Both processes significantly shape motivation. The faster the company grows, the more important is the design of the onboarding process.

How do we train our employees?

Definition. Trainings dedicate time and financial resources to enhance employees' competences, soft skills and leadership skills. Competences relate to role-specific professional knowledge. Soft skills relate to communicative abilities and self-management. Leadership skills relate either to the supervision of employees or to the technical leadership of projects.

Design considerations. Training plans can be designed in many ways, yet most trainings are designed along the categories outlined above. Competence programs are typically financed by the company, yet employees usually contribute free time. Soft skills trainings should be scheduled on a regular basis. Founders, managers and employees should take part in leadership trainings regularly. Growth companies should invest particularly into young managers' leadership abilities.

Trainings can be delivered by external consultants or internal experts. A mix of both is recommended. Trainings by external consultants extend the organization's amount of knowledge and are more likely to ensure a certain level of quality. Trainings by internal trainers enhance trainers' own capabilities, can provide exposure to young talents and are usually less costly.

Relevance. Trainings have cultural substance. They signal the growth company's willingness to invest in employees. Trainings are a reward and an explicit part of the compensation package. The development of competences and skills 'on the job' supported by dedicated trainings are main reasons why talented employees join a growth company. Trainings extend the knowledge base of the growth company and facilitate information sharing throughout the organization. Sometimes talent cannot be found and needs to be developed from within the company.

How do we decide and communicate about exits?

Definition. Exit means that employees leave the growth company. Exits can be intended or regretted. Intended exit is defined as the company's conscious decision to lay off an employee. Regretted exit means that an employee decided to leave the firm. Exits mostly relate to employees, but can also relate to other organizational participants such as investors or advisors. The management of exits includes the decision process as well as communication.

Intended exits. The possibility as well as the actual conduction of intended exits is a particular performance management practice. Being part of a successful, well-managed growth company with capable and interesting colleagues is a strong reward. Being laid off is the ultimate penalty. Formalized performance management practices are points of reference for the decision. Mission, vision, value proposition and especially core values provide criteria to evaluate culture-related lay-offs. Behavioral standards, rules, procedures and policies provide criteria to evaluate lay-offs as a result of misconduct. Strategic objectives, strategies and business plans

assess lay-offs necessary due to re-organizations. Roles, goal setting, performance reviews and key performance measures provide criteria to evaluate performance-related lay-offs.

The decision process for intended exits should be systematic and transparent. Performance management practices objectify performance data. To ensure fairness, the exit decision should be taken by the HR council after reviewing all facts and hearing out all sides. Exit decisions should be made by individual managers alone. All organizational participants should be aware of how exit decisions are processed.

Regretted exits. Regretted exits are expensive due to knowledge attrition, additional workload for remaining employees as well as replacement costs. High employee turnover provides negative feedback on the company's performance management approach. Likewise, a well-designed Growth Performance Management context is the best measure to reduce the rate of regretted exits. Leaving the company should be made easy. Employees who stay just because of financial rewards should be avoided. Growth managers should fight for regrettably leaving employees with all reasonable measures. Yet they should accept leaving decisions and maintain the relationship.

Communication. The exit process – its decision-making process and design of communication – has profound influence on the growth company. Communication is directed to the remaining employees mainly. Communication should be positive and consistent for all leaving employees. The only exception are exits because of clear misconduct.

Exits and culture. Exits in general and intended exits in particular influence organizational culture. Growth managers should not shy away from laying off employees. Probation periods matter a lot. Growth managers should proactively manage decision and communication processes. As performance management practice exits should be managed with utmost care.

6.6.5. Goals & Feedback

What are our operational goals?

Definition. Operational goals define the performance to be delivered in the near future. Operational goals can be used to motivate, coordinate, control, allocate resources and initiate opportunity seeking and learning. Goals are among the most essential performance management practices of growth companies. Goals should be adopted early on and designed with great care.

Design considerations. Operational goals should be limited in number in order to achieve clear focus and direction. The scope of the goals should correspond to urgencies as well as time and manpower available. Wording of goals must be specific and precise. Goal setting is an effective way for developing common language and definitions in a new team. Goals should be measurable or at least verifiable. Operational goals should not contradict mission and vision.

The majority of operational goals should work towards strategic objectives, value propositions and/or KPIs.

In growth companies, founders, middle managers and key employees should own operational goals. Accountabilities for the achievement of goals must be clear. Confusion about goal responsibility must be avoided. Every owner of operational goals should know their goals from the top of their heads at any time.

The level of performance depends on core processes. Goals should be realistic and achievable for operational processes. Goals should be challenging for strategic processes. In general, growth requires ambitious goals.

Goals and roles. Goals and roles can provide alternatives and complements. Goals are more flexible, more motivating and initiate more opportunity seeking. Goals are typically used in strategic processes. Roles are more stable and usually more efficient. Roles are typically used in operational processes. Ideally, roles and goals should reinforce each other. In any case roles and goals must not conflict.

How and when do we set operational goals (operational goal setting process)?

Definition. The operational goal setting process is a routine that materializes function-specific knowledge, decentral information and implicit assumptions into specific, precise, commonly understood, explicit statements. For growth companies, the operational goal setting cycle is the most essential practice for iterative learning.

Design considerations. The operational goal setting process, or cycle, has three steps: setting goals, working towards goals and reviewing progress, and evaluating goal achievement. In the context of growth companies, the three steps of the operational goal setting process should be designed clearly. Step 1 and 3 should be conducted in consecutive meetings.

First, goal setting should be participative and should involve all owners of operational goals. Goal setting should be as objective and data-driven as possible. Participation and objectivity motivate, coordinate, leverage knowledge and information, and support the acceptance of challenging performance levels. Goal setting should be prepared in advance. Setting goals requires time and attention as well as communicative discipline in face-to-face discussions.

Second, progress towards goals should be reviewed on a regular basis. Progress reviews can take place in weekly or bi-weekly team meetings. Progress reviews facilitate motivation, coordination and resource allocation to goals. Progress reviews also allow to adapt activities, methods and behavior to achieve goals.

Third, goal achievement and performance outcomes need to be evaluated. Evaluation and learning from evaluations take time and attention. Evaluations should be directed on both

successful and unsuccessful activities, methods and behavior in relation to goal achievement. The evaluation of past operational goals is the basis for setting future operational goals.

The length of cycles for the goal setting process is important. Cycles determine how fast and with how much pressure goal owners need to work and learn. Cycles can range from four weeks to three months. The more knowledge about business model and growth strategy is available, the more stability and predictability, and/or the larger the organization, the longer the cycles can be. In case of doubt, shorter cycles should be preferred.

Goals are the basis for successful execution. Participative, intense and thorough planning, the anticipation of progress reviews with the potential of adapting activities as well as the right cycle length result in trust in goals. Trust in goals facilitates focus and execution, as goals are not questioned during cycles.

Operational goals link back to culture. Goals and culture are two sides of the same coin. How goals are set, how employees contribute, what performance levels are demanded and how outcomes are evaluated should emphasize and not contradict organizational values.

Evolution. The operational goal setting process should evolve. Startups typically conflate the three steps of the process, are very participative, and have short cycle lengths. Growth companies separate steps, choose participation based on organizational roles, and increase cycle lengths. The design of the process should be reviewed in the strategic management process.

What are the dimensions we use to evaluate performance?

Definition. Performance dimensions are criteria used to evaluate outcomes on different organizational levels. The determination of performance dimensions is both difficult and a key responsibility of growth managers. Performance dimensions are not performance levels. Growth managers need to specify performance levels for performance dimensions.

Design considerations. Several performance management practices can be used as formal performance dimensions (table 62). These practices are different in their stability as performance dimensions over time. First, mission, vision and values should be particularly stable. Second, value propositions, behavioral standards, organizational roles, strategic rules, relevant procedures and key performance indicators should be stable, yet can and should be adapted on a regular basis in light of new knowledge or changing circumstances. Third, strategic objectives and especially operational goals are performance dimensions that are ‘unstable by design’. They are renewed on a regular basis in order to stimulate learning.

The application of performance dimensions must be clear. The preference or avoidance of performance dimensions depends on organizational levels. Clarity about performance dimensions is particularly important when employees are evaluated. Changes of performance dimensions should follow a process and should be communicated well.

	Individual employees	Functions (mid-managers)	Company (founders)
Stable			
Mission	preferred	preferred	preferred
Vision	preferred	preferred	preferred
Values	preferred	preferred	preferred
Stable yet adaptable			
Value propositions	not applicable	preferred	preferred
Behavioral standards	preferred	possible	not applicable
Organizational roles	preferred	possible	not applicable
Rules	preferred	preferred	possible
Procedures	depends	preferred	not applicable
KPIs	depends	preferred	preferred
Adapted regularly			
Strat. objectives	depends	possible	preferred
Operational goals	preferred	preferred	avoid

Tab. 62: Suitable performance dimensions for different organizational levels

Performance dimensions are used for both formal performance evaluations and informal feedback. Objective and formulaic performance evaluations should be based on pre-defined, stable and measurable performance dimensions. Strong incentives, such as financial rewards, should always be based on stable and pre-defined performance dimensions. Subjective evaluations should also ensure some stability in performance dimensions. Informal feedback should refer to formal performance dimensions such as organizational values in most cases.

Balance. The emphasis on performance dimensions from different boxes of the Growth Management Canvas has different effects on performance management. Some growth companies emphasize mission, vision, values and cultural selection of employees (right side of the Growth Management Canvas). Other growth companies emphasize processes, organization and KPIs (left side). As a rule of thumb, growth managers should aim at a balance and neither over-emphasize nor neglect performance dimensions from different boxes of the Canvas.

Evolution. The stability and definitional clarity of performance dimensions is dependent on how much growth managers already know about the performance the growth company business model and growth strategy require. The more knowledge, the clearer the performance dimensions. The clearer performance dimensions, the more options for different approaches to performance evaluation and feedback.

How and when do we formally evaluate performance (performance evaluation processes)?

Definition. Performance evaluation is the formal process of comparing outcomes to pre-defined standards in essential performance dimensions. Performance evaluation are typically conducted for the whole company, functions and individual employees. All formal performance management processes include a dedicated step for performance evaluation.

Performance evaluations can be done subjectively or objectively. Subjective performance evaluations require time and attention in face-to-face discussions. Objective performance evaluations preserve time and attention, as such evaluations can be done by formulaic

comparison of outcomes versus performance levels. Objective evaluations are associated with management by exception and require clear, stable and measurable performance dimensions.

	Individual employees	Functions (managers)	Company (founders)
Strategic management process		Subjective, 3-6 months no links to incentives	Subjective, 3-6 months no links to incentives
Operational goal setting process	Subjective, 1-3 months no links to incentives	Subjective, 1-3 months no links to incentives	
Performance review process	subjective or objective 3-6 months links to incentives		

Tab. 63: Types of formal performance evaluation processes

Design considerations. Table 63 provides an overview of types of formal performance evaluation processes. The strategic management process, which includes meetings of the board of directors, evaluates performance for the whole company as well as for selected functions. Strategic performance measurement systems are essential practices in this process. Performance evaluations should be subjective. The strategic management process should not be linked to incentives directly.

The operational goal setting process typically evaluates performance for functions and their middle managers. Potentially, this process also evaluates individual employees. For operational processes performance evaluations should be objective. For strategic processes performance evaluations should be subjective. For scaling units performance evaluations should be objective, if possible, given the knowledge available. The operational goal setting process should not be linked directly to incentives so that goals are ambitious.

The formal performance review process evaluates performance for individual employees. Performance reviews should be conducted every three to six months. For employees in operational processes performance reviews should be objective. For employees in strategic processes performance reviews should be subjective. Whether subjective or objective, it is essential that employees understand the evaluation and perceive the process as fair. The formal performance review process should be used to decide about incentives.

Forms of formal performance reviews. Performance review processes can be designed in different ways. Performance reviews can emphasize organizational values (e.g. DeltaCo for headquarters employees). Performance reviews can refer to key performance measures and be objective and formulaic (e.g. DeltaCo in scaling units). Organizational roles can be translated into performance dimensions (e.g. AlphaCo in scaling units). Performance reviews can use stack rankings to evaluate employees' performance relative to each other. Evaluators can be direct managers (e.g. BetaCo), a council (e.g. AlphaCo in its headquarters), managers and colleagues on the same level in a 180 degree feedback, or all colleagues in a 360 degree feedback. None of these approaches, however, can replace informal situational feedback, and vice versa.

How do we give informal feedback?

Definition. Informal feedback refers to performance evaluations that are given ad-hoc in a situation or shortly after a situation. Informal feedback can be positive or negative and is typically given verbally and on a personal level.

Design considerations. Despite its informality, feedback should still be consistent and – explicitly or implicitly – linked to formal performance dimensions. Organizational values, behavioral standards, roles and goals are favored points of reference for informal feedback. Informal feedback influences behavior directly in a situation and communicates performance dimensions on a more emotional level. Especially when performance dimensions are not yet clear and stable, informal feedback is an important practice to motivate, direct and control employees. Hence, giving constructive feedback is a key ability for growth managers.

Informal feedback is an important non-financial reward that can be used to motivate employees and direct their efforts. Informal feedback should be given and received often. The organization should be used to feedback. Feedback should be close to the situation. Informal feedback should come across casual as well as constructive. Positive feedback should be preferred but not exaggerated. Negative feedback should not be avoided. Negative feedback should aim at behavior and not at the person. Tone and intention should be respectful, constructive and solution-oriented. For these reasons, the skill of giving and receiving feedback should be part of regular trainings.

Informal and formal. Informal feedback and formal performance evaluation processes are not alternatives but complements to each other. Both close the loop of goals, action and feedback, and potentially link evaluations to rewards and penalties. Formal performance evaluations relate to larger loops over several months as well as to decisions about more formal, long-term incentives. Informal feedback relates to small loops as well as more informal, reversible incentives. Startups typically start with informal feedback. Growth companies should combine informal feedback with more formal performance evaluations.

6.6.6. Key metrics

What are our culture metrics?

Definition. Culture metrics include mission KPIs, vision KPIs, value proposition KPIs, the about-us KPIs as well as further KPIs potentially expressing organizational culture. The measurement of performance has a strong cultural dimension. Culture metrics make cultural performance management practices tangible and progress visible. Culture metrics allow to celebrate successes based on quantitative results. Culture metrics symbolize long-term ambition and purpose on the company level. Their main purposes are direction, motivation and learning.

Design considerations. Growth companies are all about learning. Therefore, performance measurement – numbers, data and quantitative facts – should be part of growth managers’ cultural approach to entrepreneurship. Core values should demand for and frame the relevance of measuring. Culture metrics should be non-financial in most cases, as financial KPIs potentially conflict with cultural matters. Company-wide presentations should start with culture metrics and not with financials. Culture metrics should be used only if the KPI can be influenced. Culture metrics are particularly relevant in the beginning of the growth stage when startups need to provide general direction and demonstrate progress.

Mission KPI. The mission KPI indicates progress towards the mission statement. The social impact startup *Too Good To Go* is a good example. Too Good To Go is an app to reduce food waste by connecting customers with food stores that sell their surplus food at a discount before having to throw it away. Too Good To Go’s mission is “to stop wasting food entirely” (The Economist, 2018, p. 10). Their mission KPI is the number of ‘meals saved’, as this KPI indicates progress towards their mission statement.

Vision KPI. The vision KPI is particularly relevant, as growth companies must demonstrate progress towards their vision statement to their stakeholders. Revenue is a typical vision KPI. However, revenue is not quite imaginative, not business model specific, and as a financial KPI can conflict with cultural matters from employees’ perspectives. Too Good To Go’s vision is “to reduce food waste worldwide” (The Economist, 2018, p. 10). Too Good to Go’s vision KPIs are the number of apps installed by customers as well as the number of food stores (partners), as these two KPIs indicate actual activity on both sides of their platform.

Value proposition KPI. There are several types of value proposition KPIs. Some are more high-level, while others are detailed and specific to certain customer groups. High-level value proposition KPIs, which prove to be stable over time, can also be used as culture metrics. Too Good To Go’s value proposition is to provide “an app called ‘Too Good To Go’ where stores can sell their surplus food” (The Economist, 2018, p. 10). Too Good To Go’s most high-level value proposition is number of meals saved, because this KPI indicates that stores and customers perform actual transactions.

About-us KPIs. Mission KPI, vision KPI and value proposition KPI as well as other KPIs can be aggregated to about-us KPIs. Growth companies often display their about-us KPIs on their websites’ about-us page. About-us KPIs are at the core of what growth companies promise to their stakeholders. About-us KPIs provide identity to the young, growing company. Too Good To Go lists the following KPIs on its website (www.toogoodtogo.com/en) under the title “a little bit about us”: 27,1 million meals saved, 67.703 tons of CO2 avoided, 18,2 million app installs, 14 countries, 490 waste warriors (employees), 36.475 partners (stores).

Further culture metrics. Growth companies can use further culture metrics. For instance, the number of active countries or the number of different nationalities employed in the company can symbolize an international culture. Similarly, the number of employees in certain organizational functions such as engineering can embody the growth company's tech culture. The development of KPIs such as employee satisfaction or employee retention have cultural implications as well. Culture metrics highlight what is important and should thus be customized to the growth company.

What are our business model metrics?

Definition. Business model metrics translate a growth company's business model dimensions into KPIs. Business model metrics represent a quantitative cognitive model of the business model. Business model metrics allow to define a business model quantitatively and thus more precisely. Their main purposes are direction and learning.

Hypotheses. Business model metrics can be considered as hypotheses. Startups' business model metrics should be considered as hypotheses themselves, since startups often do not know what performance is required in the context of their business idea. As companies grow, business model metrics should become clearer and more stable. Growth companies can formulate and test hypotheses about how to drive their business model metrics. As a growth company's business becomes more stable, business model metrics also allow to formulate and test hypotheses about linkages between KPIs.

Design considerations. Business model metrics should provide a framework for learning about the business model. For the larger part, business model metrics should be non-financial KPIs. Financial KPIs are lagging indicators, summarize many activities and typically expand several steps of core processes. In contrast, non-financial KPIs are more specific to essential activities, process steps and organizational functions. Business model metrics should be limited in their number in order to reduce complexity, to increase focus and to facilitate learning. Business model metrics should focus on horizontal links across core processes and focus less on vertical links of the organization structure.

Four business model dimensions. A business model can be structured in four dimensions (Gassmann, Frankenberger & Csik, 2013, p. 6; Gassmann, Frankenberger & Sauer, 2016, p. 21). These four business model dimensions are operationalized through four questions. Business model metrics are preliminary answers – hypotheses – to these business model questions.

The first business model question is: Who are the target customer groups? Business model metrics define precise answers to this question. Customer-related KPIs that are measured drive out KPIs that are not measured. The choice of KPIs has managerial implications for organizational functions such as marketing and sales.

The second business model question is: What is offered to customer groups? KPIs precisely define and measure value propositions. Value proposition KPIs should be well integrated with customer groups. The typical value proposition KPI framework includes four elements for each customer group: value proposition slogan, value proposition explained and argued, simple example and the value proposition KPI. For instance, Uber's value proposition slogan to their customer group of busy city customers is "tap the app, get the ride". The value proposition is to get easy and fast transportation. The example is a business person in New York, who needs to get quickly from 5th avenue to Wall Street. The value proposition KPI is 'time to pick-up'.

The third business model question is: How is the value proposition created? This question concerns performance management in general and performance measurement specifically. Most essentially, this third question relates how KPIs are used to manage core business processes, the scaling unit as well as the growth company's organizational functions.

The fourth question is: How is revenue (and profit) generated? This question integrates several business aspects, such as different revenue streams, pricing strategies, and operational efficiency. KPIs related to this third business model dimension can be distinguished into financial KPIs from the profit & loss statement (revenue and costs) and non-financial KPIs that drive these financial KPIs.

Business model dimensions, KPIs and organization structure. The organization needs to deliver the performance demanded by these four business model dimensions and measured by business model metrics. Business model metrics can be understood as precise, measurable definitions of organizational functions. Therefore, the answers to the four business model questions, the measurement of business model metrics and organizational design need to be aligned.

Growth Management Canvas. The Growth Management Canvas integrates all four business model questions. Questions one and two are included in the Culture & Customer box: What are our value propositions to our customer groups? The third question is included in the following three Growth Management Canvas questions: What are our core processes to deliver our value propositions to our customers? What is our scaling unit? What is our organization structure? Finally, the fourth business model question is included in the following three Growth Management Canvas questions: What is our business plan? What are our key financial metrics? What are our key metrics for each organizational function?

Identifying business model metrics. Business model metrics define what performance is in the context of a specific business. Yet defining the right performance is a difficult task. These definitions are dynamic over time and depend on circumstances. Further, business models can change. Additionally, performance is a multi-dimensional construct. For these reasons, the identification of individualized, customized business model metrics is foremost an intellectual exercise facilitated by the willingness to measure, trial-and-error as well as constant iteration.

Growth managers can use four approaches to identify business model metrics. First, culture metrics provide high-level indications of what metrics might matter to the business model. Growth manager can analyze what KPIs drive the culture metric in order to identify their business model metrics. Second, growth managers can use standards from textbooks, associations, consultancies or generally established business practice. For example, sales funnel KPIs are an established practice used to measure performance of the customer acquisition process. Growth managers can copy these standards and adapt them to their context. Third, growth companies can thoughtfully imitate KPI practices from other companies either from the same industry or from comparable industries. Business cases, business angels, venture capitalists, advisors and personal networks are a source for finding such KPI practices. Fourth, if performance areas and thus KPIs are particularly unknown for a business model, then insights can be generated by interviews, customer case studies or surveys. Startups should prefer interviews and case studies, while growth companies can use statistical surveys. It is essential that business model metrics are always considered as preliminary only and are reviewed and revised on a regular basis.

Integrating business model metrics. Business model metrics can assume linkages between each other. Typically, non-financial KPIs drive financial KPIs. The integration of three or more KPIs can be processual or circular. Processual integration means that KPI_1 drives KPI_2 and KPI_2 drives KPI_3 . Processual integrations are evident in core processes or entire value chains, as illustrated in the “BetaCo Strategic KPI System” in chapter 4.1.5. Circular integration means that KPI_1 drives KPI_2 , KPI_2 drives KPI_3 , and KPI_3 then drives KPI_1 . Circular integrations lead to reinforcing linkages – ‘virtuous cycles’ – between KPIs, as illustrated in the “DeltaCo Growth Cycle” in chapter 4.1.5. Platform business models such as Uber, Airbnb or Groupon typically use such virtuous cycles between their business model metrics. This might be one reason that such business models can grow particularly fast.

Evolution. Business model metrics need to evolve. Over time growth managers might give different answers to the question of what performance is in the context of their business model. The selection of KPIs as well as assumed linkages between KPIs should be reviewed and revised on a regular basis. Startups should conduct such reflections in rather short frequencies of about two to three months, for instance as part of their operational goal setting process, since understanding business model metrics allows to advance through stages of knowledge more quickly. Growth companies should review and adapt business model metrics as part of their regular strategic management process.

What are our growth strategy metrics?

Definition. Firm growth is created through focus of attention and resources. Growth strategy metrics are those KPIs that a growth company needs to drive in order to grow at a certain point in time. Growth strategy metrics as well as KPIs that influence them are strategy's representatives in daily operations. Their main purposes are motivation, direction and learning.

In many cases growth strategy metrics are a subset of business model metrics. Growth strategy metrics represent those business model metrics that the growth managers focus on, actively manage and specifically learn about. This deliberate focus also manages trade-offs between KPIs and takes strategic sequences between KPIs into account.

Design considerations. Growth strategy metrics should provide a framework for learning about how to grow the growth company's business model. Growth strategy metrics should be derived from and aligned to the company's (measurable) strategic objectives. Ideally, the set of strategic objectives includes all relevant growth strategy metrics for a given period. Strategic objectives are time-bound and thus growth strategy metrics are time-bound as well.

Growth is created through repeatable activities in recurring processes. Hence the larger part of growth strategy metrics should relate to strategic processes as well as scaling units. Most growth strategy metrics should be non-financial KPIs, as they are more informative about specific activities. Nonetheless, growth managers should be clear about how non-financial growth strategy KPIs drive financial KPIs.

Growth strategy metrics should be limited in order to reduce complexity. Communication and learning about growth strategy metrics should be simple. Changes to growth strategy metrics should be easy and facilitate unlearning and relearning. Typical, rather high-level growth strategy metrics include number of employees, conversion rates, number of customers, customer retention rate, numbers of units sold, number of scaling units, and revenue.

Identifying growth strategy metrics. Growth managers can use five general approaches to identify growth strategy metrics. First, growth strategy metrics can be identified as those business model metrics that are actively managed in order to scale the company. Growth strategies often require focusing on different aspects of the business model at different points in time. In other words, growth strategy stage business model metrics over the growth company's life cycle. Second, growth strategy metrics can be derived from strategic objectives, and vice versa. Third, growth strategy metrics can relate to those core processes that are categorized as strategic processes, for instance the sales process. Fourth, operations in scaling units as well as scaling units themselves should be covered by growth strategy metrics. It should be noted, however, that some processes in scaling units can and should be managed by more operational KPIs in a management by exception approach. Fifth, results and insights from the operational goal setting process can alter strategies and thus growth strategy metrics.

Hypotheses. Growth managers can use growth strategy metrics to formulate and test hypotheses about their growth strategy. First, in the course of the strategic management process, growth managers review and revise business model metrics. Second, growth managers determine the most essential growth strategy metrics from this set of business model metrics. Third, growth managers formulate their ‘research question’: What drives this specific growth strategy metric? Fourth, growth managers can formulate hypotheses about how to drive this growth strategy metric. Fifth, in the course of the operational goal setting process, these hypotheses are translated into goals in order to put them into action. Finally, the reaction of the growth strategy metric provides quantitative feedback on the hypotheses.

Evolution. Growth strategy metrics must change over time. Growth strategy metrics change, whenever business model metrics change, whenever strategic objectives change and whenever strategic processes change. The set of growth strategy metrics to be actively managed and driven should be reviewed and adapted in the strategic management process.

What are our key financial metrics?

Definition. Key financial metrics are those financial KPIs that are most relevant to a growth company’s financial health and survival, business model and growth strategy at a given point in time. Generally, financial metrics are either derived from standard financial statements (profit & loss statement, the balance sheet and the cash flow statement), or are otherwise calculated from information systems (e.g. average size of shopping basket in Euros). The former is associated with standard accounting on the legal entity level, the latter is associated with management accounting on several organizational levels. Their main purposes are control, direction and learning.

Design considerations. Growth managers should monitor cash flows on a bi-weekly basis. Funding efforts should start at least eight months before cash is running out. Financial planning should be updated and evaluated on a bi-weekly or monthly basis. Non-financial KPIs should be used to calculate financial KPIs in the financial planning model. Financial statements should be provided and evaluated on a monthly basis.

Growth managers should actively control, manage and learn from three sets of key financial metrics. First, several key financial metrics are almost always relevant to growth companies, including: revenue from different revenue streams, basket size, gross profit, customer acquisition costs, operational expenses and especially personnel costs, EBITDA or EBIT, and cash burn. Second, key financial metrics can be specific to certain business models. For instance, hardware businesses might manage financial KPIs from their balance sheets more intensely, while purely digital businesses typically focus on financial KPIs from the profit & loss statement only. Third, growth strategies result in focusing on different key financial metrics, as outlined below.

Necessary strategic straddle. The three typical strategic directions include revenue growth, profitability and asset efficiency (cf. Kaplan & Norton, 1996, pp. 51-61). Business model metrics are stable across all three strategic directions, yet (growth) strategy metrics and associated focus on key financial metrics differ. Startups need to opt for the revenue growth strategy in order to validate their business model. Mature firms can usually choose between these three strategic directions. Growth companies, however, typically need to achieve a strategic straddle: They need to grow revenue while maintaining a certain – positive or negative – level of profitability. As a result, key financial metrics often relate to at least two of the three typical strategic directions in the context of growth companies.

Financial leadership. Key financial metrics and strategy have a recursive relationship. On the one hand, key financial metrics determine options for strategic directions. Key financial metrics define the minimum necessary as well as the maximum possible financial performance of the growth strategy. On the other hand, the strategic direction results in certain financial outcomes. Financial outcomes provide feedback about the growth strategy and key financial metrics are the ultimate performance dimension for strategy. Thus, financial leadership can be defined as the ability to achieve consistency and alignment between the growth strategy to be pursued, key financial metrics to be managed, and the time available to growth managers to deliver expected financial performance.

What are our key metrics for each organizational function?

Definition. The key metrics – KPIs – for each organizational function are defined as those financial and non-financial KPIs that growth managers focus their attention on at a given point in time. The key metrics are derived from culture metrics, business model metrics, growth strategy metrics as well as key financial metrics. Key metrics for strategic processes and for operational processes are used differently. Key metrics are selected and integrated into a strategic performance measurement system and allocated on organizational functions. Their purposes are direction and control as well as motivation and learning.

Design considerations. Key metrics should support growth managers in exploiting their organization's existing knowledge in core processes as well as facilitate the creation of new knowledge about business model and growth strategy. The selected and communicated key metrics should make growth managers accountable for performance to be delivered consistently. Most key metrics should be non-financial. Non-financial KPIs are typically more specific to essential activities, core processes, business models and growth strategies. Growth managers should manage and learn about those key metrics that they can influence with effort. Growth managers should measure but not focus on those key metrics that they can control directly and easily. Key metrics for each organizational function or for larger teams should count not more than seven. Names and calculation of key metrics should be defined clearly.

Orga view. Key metrics can be considered as comprehensive job descriptions of organizational functions and precisely defined accountabilities of functions' middle managers. Key metrics define the competences required from growth managers. Measuring performance must result in activity. For this reason, all key metrics need a KPI owner. If possible, KPI ownership should be congruent to ownership of operational goals. Clearly defined key metrics create the context for decentral performance expectations and thus for decentralized decisions as well. Key metrics – especially when derived from business model metrics – provide strong implications for organizational design. Therefore, key metrics and organizational design should be coherent.

Process view. Each organizational function is responsible for two sets of key metrics. These two sets are defined by the type of core process to be controlled. The first set of key metrics relates to strategic processes. These key metrics are managed actively. These key metrics are used to learn from. Accordingly, growth managers set operational goals for these key metrics and evaluate outcomes intensely. The second set of key metrics relates to operational processes. These key metrics are measured and monitored closely, yet they are managed by exception. A minimum performance level is defined for these key metrics and corrective action does take place only if KPIs drop below these standards.

Orga view vs. process view. Key metrics should adopt both the organizational and the processual view. Repeatedly and successfully executed activities result in growth. Key metrics measure the outcomes of these regular activities in recurring core processes. Therefore, in case of inconsistency between KPIs implicated by the organization and KPIs implicated by core processes, the process view on KPIs should top the organizational view.

Goals and KPIs. Goals and KPIs have a tight relationship. Yet operational goals and KPIs should not be confused nor conflated. KPIs indicate the need for setting operational goals. Goals should be set so that they drive KPIs. KPIs are used to measure regular activities and processes – the daily business. Goals outline the extra effort to improve the daily business. KPIs should play a prominent role in operational goal setting processes.

Incentives. Key metrics are essential performance dimensions. Clear and stable key metrics can be used for formal, objective performance evaluations and hence for the allocation of incentives. Key metrics that are powered by financial rewards and/or formal penalties must be particularly clear and stable.

Report and meeting. Key metrics should be monitored constantly and reviewed on a weekly or bi-weekly basis. In-depth evaluations of KPIs should take place every month in a regular meeting. These regular meetings should use a report with a consistent structure, which includes KPIs per organizational function as well as operational goals defined to impact them. To avoid conflict of interests, key metrics should not be reported by those accountable for key metrics, but, if possible, by a growth supporting function such as finance and/or business intelligence.

Evolution. Key metrics need to evolve over time. Key metrics indicate the growth company's knowledge about its business. Thus, purposeful evolution reflects increase in know-how. The following four events typically lead to changes of key metrics. First, business model metrics are adapted. Second, growth strategy metrics are adapted. Third, the organization structure has changed. Fourth, strategic processes develop into operational processes and should be managed accordingly. Changes in key metrics should result in changes to KPI reports as well as potential changes to meeting designs.

6.6.7. Incentives

What financial rewards do we offer?

Definition. In growth companies, financial rewards typically include base salaries, bonus payments and employee stock option plans. Financial rewards are strong performance management practices. The more short-term and the more controllable by receivers, the stronger the effects on motivation, behavior and learning.

Design considerations. Financial incentives must be designed with care. Salaries and employee stock option plans should be designed for the long-term in order to avoid management debt. Financial rewards should attract and retain employees, but should not be a main source of motivation and direction. Financial rewards should be used for motivation and effort-directing purposes only when performance dimensions can be defined precisely. The allocation of financial rewards should not be ad-hoc, but should be the result of a systematic and transparent decision process.

Salary. Base salaries should correspond to skills and market rates. Base salaries should be high enough to attract and retain employees. Apart of attraction and retention base salaries should be as neutral as possible to performance management. High-performers should be remunerated disproportionately well and a significant financial upside should be possible. The financial upside should be linked to impact on the growth company as well as career development. This approach works, if performance dimensions are reasonably clear.

Bonus. Bonuses have strong motivational and directional effects. If bonuses are used, then they should be effective in the short-term and make a clear difference in employees' total compensation. Yet the higher bonus' share in total compensation, the more employees direct their actions, behavior and learning processes towards bonus achievement. It follows that bonuses should only be used when performance dimensions are clearly defined and measurable. This is mostly true for tight role descriptions, KPIs and some forms of operational goals. Bonus payments should be determined in objective performance evaluations. Typically, bonus payments are applied in scaling units and for operational processes.

Employee stock option plans. Stock option plans reward an increase in company valuation and should be applied only, if founders intend to sell their company at some point in the future. Stock option plans are a good practice to remunerate employees for taking the risk of joining a growth companies as well as for delivering the extra mile. Stock options are a reward for being a member of the growth company. Employees value stock options only in times of success. In critical times stock options can lose their motivational power. For these reasons, stock options should be an upside, but not provide a significant financial downside to employees. A clear policy for employee stock option plans is necessary. Stock options tend to create a ‘two-class organization’ of those with and those without. Hence, stock options should be allocated either to clearly defined groups, which talented employees can aspire to, or to the whole organization.

What non-financial rewards do we offer?

Definition. Non-financial rewards can be used to reward group membership, reward professional progress and reward effort and contribution. Non-financial rewards typically include autonomy, responsibility, recognition and positive feedback, public praise, job titles, working with capable and interesting colleagues, office design, trainings, employee development programs, exposure, and social events.

Design considerations. Growth managers should apply non-financial rewards intensely. Employees value most of these three types of non-financial rewards in difficult times as well. Motivation as well as attraction and retention of talented employees should mainly work through the use of non-financial rewards. These three types of non-financial rewards should generally be the first choice over other types of rewards and penalties.

Group rewards. A first type of non-financial rewards are group rewards. Group rewards can be used to reward employees for being members of the growth company. Conversely, well-designed group rewards make exits an actual penalty. Non-financial group rewards include working in a team of interesting, capable colleagues (selection), working in a well-designed office in a good location as well as having a good time together during social events. Selection and office design are effective rather for the long-term, while social events are effective rather for the short-term. Growth managers should invest in non-financial group rewards.

Progress rewards. A second type of non-financial rewards can be used to honor employees’ ability and willingness to learn and grow together with the company. These ‘progress rewards’ can be gained by individual performance. Progress rewards include work autonomy, more responsibilities including more exposure, fast careers including attractive titles, trainings and employee development programs. Progress rewards can manifest themselves in more informal and smaller gains in autonomy and responsibilities in daily work, or in formal employee career development.

Recognition rewards. A third type of non-financial rewards can be used to reward employees' efforts and contributions. Recognition rewards are mainly informal, including recognition and approval by founders and managers, positive feedback on particular efforts, and public praise of contributions for instance during company-wide meetings. Recognition and informal (positive and negative) feedback are some of the few practices that can and should be used regularly to direct employees' efforts in the short-term. The use of recognition rewards depends on leadership skills and should be trained on a regular basis.

How do we develop the careers of our employees?

Definition. Career development is a critical nexus of financial rewards, non-financial rewards as well as growth strategy and organization structure. Next to mission, vision and value proposition, fast careers are one of the strongest incentives to join a growth company for talented and ambitious employees. Career development is an incentive both due to the perspective of progress in career and in the actual change in role and responsibilities.

Design considerations. Ambitious employees should be able to grow their careers along with the growth of the company. Career development can be used for the attraction, retention and motivation of talent. Career development should not show just in title changes or participation in occasional trainings. The development of employees' careers needs to show in role promotions including title changes and increase in overall compensation as well as in more autonomy, more responsibility, more exposure, and participation in employee development programs. In most cases, career development is associated with personnel responsibility.

Titles should be in line with organizational roles to ensure clarity in organization structure. Title inflation should be avoided. Apart from organizational changes, career development can be made credible by the provision of significant budgets for employee training programs in the areas of competences, soft skills and leadership skills.

Growth strategy and organization. Career development is strongly aligned with the growth strategy, yet careers as an incentive are also dependent on the sustainable growth of the company. Career development requires employees to put extra effort in the job as well as the will to professional progress and learning. Growth strategy and organizational growth require employees who are motivated to go the extra mile, like to assume challenges and take over responsibilities early on. Employees, who want to work with a growth company, are looking for exactly this challenge, but seek extraordinary career perspectives in return. The vision statement and the growth strategy embody employees' career ambitions. Talented employees see themselves grow with the company – they place themselves into the vivid picture of the growth vision.

Middle management. For the reasons stated above, career development is a particularly essential incentive for middle managers. However, career development also provides a challenge in this

context. On the one hand, the growth company should offer career perspectives and the possibility of internal promotions to current employees. On the other hand, growth companies often need new knowledge and experienced managers from outside the organization. Therefore, internal promotions should be possible and actual promotions should be particularly accentuated, for instance through company-wide meetings or social events.

Decision process. The performance management practice of career development is a forceful incentive. It interacts strongly with growth strategy and organization structure. Careers are effective for the very long run. Correspondingly, the decision about employees' careers should be systematic and transparent.

What formal and informal penalties do we apply?

Definition. Penalties are activities or consequences that employees dislike and try to avoid. Most negative penalties result from the absence of positive rewards. Penalties can be formal or informal. Formal penalties include no salary increase, no promotion, no or low bonus payment, title demotion, official warnings and loss of job (intended exits). Informal penalties include interference by superiors, assignment to unimportant tasks, no recognition, no public praise and public humiliation.

Design considerations. Penalties cannot be avoided in organizations. Penalties should be used to ensure behavioral compliance and a minimum level of performance. Growth managers should not shy away from the use of penalties. Use should be justified and consistent. Public humiliation should be explicitly banished. Informal penalties should be preferred over formal ones.

Formal penalties. Formal penalties should be used with great care, as they are effective for the long-term and difficult to revert. The application of formal penalties must be justified and consistent. The use of formal penalties should be the result of a systematic and transparent decision process or formal performance evaluation process. For this reason, formal penalties should be linked to performance dimensions. Formal penalties due to misconduct should be made explicit in policies. Performance-related formal penalties should be made explicit in the performance management system and especially in performance evaluation processes. Loss of job and no promotion are the most severe formal penalties.

Informal penalties. Informal penalties should be preferred. In growth companies, most penalties are informal and work through the absence of non-financial rewards. Informal penalties can be used to motivate employees and direct their efforts, are effective in the short-term, and can be reversed rather quickly. True leadership skills also show in the use of justified, appropriate and well-communicated informal penalties, especially in giving negative yet constructive feedback. Leaders should be consistent in using informal penalties.

Culture. The use as well as non-use of penalties affect organizational culture. Use of penalties can decrease employees' risk tolerance, intrinsic motivation and learning. Non-use can result in behavioral risks, decrease of motivation of high-performers and performance issues. Use challenges the failure culture. Non-use challenges the performance culture. Especially non-use of penalties builds up management debt. Rewards and penalties need to be balanced, justified, consistent, and should clearly relate to explicit performance management practices.

How to we decide and communicate about incentives?

Definition. The decision process on the allocation of rewards and the application of penalties as well as the communication of decisions significantly impact employees' behavior and performance. Incentive decisions can be taken by the HR council, by the formal (subjective or objective) performance evaluation process or by leaders in the respective situation. Communications can be explicit or implicit by leaders or the human resources function. Incentive decisions and communication are of cultural relevance. Table 64 provides a summary.

Incentives	Associated practices	Decision process	Communication
Financial rewards			
Base salary	Salary increases, often combined with role and title changes in context of career development.	Performance evaluation process.	Explicit by leaders.
Bonus	Bonus as variable part of overall compensation linked to clear, measurable performance dimensions.	Objective performance evaluation process.	Explicit by leaders.
Stock options	Employees receive a share or otherwise structured financial interest in increasing company valuation.	HR council in selection process; performance evaluation process.	Explicit by leaders.
Non-financial rewards			
Group rewards	Working with selected, capable colleagues, office design, team activities, social events.	HR council in selection process; financial business plan for office and events.	Implicit by presence of group rewards
Progress rewards	Work autonomy, responsibilities, exposure, participation in trainings and employee development programs.	Leaders or formal performance evaluation process.	Explicit or implicit by leaders.
Career development	Form of progress rewards; includes role promotions, title changes, increase in compensation, more autonomy and responsibility, employee development programs.	Performance evaluation process.	Explicit by leaders.
Recognition rewards	Positive informal feedback, approval and recognition, public praise.	Leaders through informal, situational feedback	Explicit or implicit by leaders.
Penalties			
Formal penalties	No salary increase, no promotion, no career development, no or low bonus payment, official warnings, loss of job.	Formal performance evaluation process or due to specific events.	Explicit by leaders or human resources function.
Informal penalties	Negative feedback, interference by superiors, assignment to unimportant tasks, no recognition, no public praise.	Leaders through informal, situational feedback	Implicit by leaders.

Tab. 64: Framework for incentive decisions and communication

Decision process. Decisions about rewards and penalties must reflect respective performance dimensions. Incentive decisions should be taken in systematic and transparent processes. The

main practices for deciding about formal incentives are the HR council and performance evaluation processes. Bonus decisions should be the result of objective performance evaluations with clearly defined performance dimensions. Informal rewards and penalties are typically decided by leaders in the situation or shortly after. Decisions about informal rewards should be consistent and expectable.

Communication. Most incentives are designed to support other performance management practices. Hence the communication about the allocation of rewards and the application of penalties should link back to respective performance dimensions. Different rewards and penalties require different ways of communication. For formal incentives, which typically are more effective in the long-term, the decision process should be communicated transparently in order to increase perceived fairness and acceptance. Especially formal penalties need to be understood and therefore explained well. For informal incentives communication can and often should be implicit, between the lines, expressed through behavior rather than words. Leadership skills show in the use of this form of informal communication about rewards and penalties.

6.7. Applications of the Growth Management Canvas

6.7.1. Total analysis workshop

Goal. The Growth Management Canvas total analysis workshop allows growth managers to create a thorough overview of their Growth Performance Management approach. The goal is to identify strengths, weaknesses, gaps and misalignments, develop action items for the most urgent findings and prioritize the action items. As per data sources available, there are three variations of the total analysis: The workshop can use growth managers' individual perspectives, the workshop can use existing internal documentation as summarized in chapter 6.8, and the workshop can use both data sources. The Growth Management Canvas total analysis is the basis for most of the applications elaborated in chapters below.

Method. The total analysis method is similar to the method of triangulation, which this study uses for the cross case analysis. The total analysis workshop systematically compares different perspectives on the designs of the most essential performance management practices.

Process for total analysis with growth managers. The total analysis workshop using growth managers' perspectives follows a five-step process. First, an internal or external workshop moderator is appointed. Often, it is advisable to use an informed external moderator. Second, all growth managers, who participate in the workshop, answer the questions of the Growth Management Canvas individually. The answers should be short and to the point. Furthermore, workshop participants should answer the questions from memory; this aspect is relevant, as memorized performance management practices can be used more consistently in daily

management practice. Third, the moderator gathers all the answers and collects them in a table in order to compare answers. Table 65 illustrates such an analytical comparison tabulation.

	Founder A	Founder B	Investor	Gaps?	Quality?	Aligned?
What is our vision statement?	"We aim to build a strong company that stands on its own feet and will last for decades."	"We need to become profitable and start generating a positive income to ensure independence and long-term success."	"Fueling healthy lifestyles by offering the largest fitness & healthy food assortment at an attractive price."	No	OK	Yes

Tab. 65: Triangulation of growth managers' perspectives (adapted from BetaCo)

Fourth, based on the comparison table workshop participants discuss and assess the answers. The evaluation takes place according to the existence of answers (Can you answer all questions?), according to the quality of the answers (Do you have good answers?) as well as according to the alignment and consistency of the growth managers' answers (Do all of you agree?). The outcome of the evaluation is an overview over strengths, weaknesses, gaps and misalignments regarding specific performance management practices and their designs.

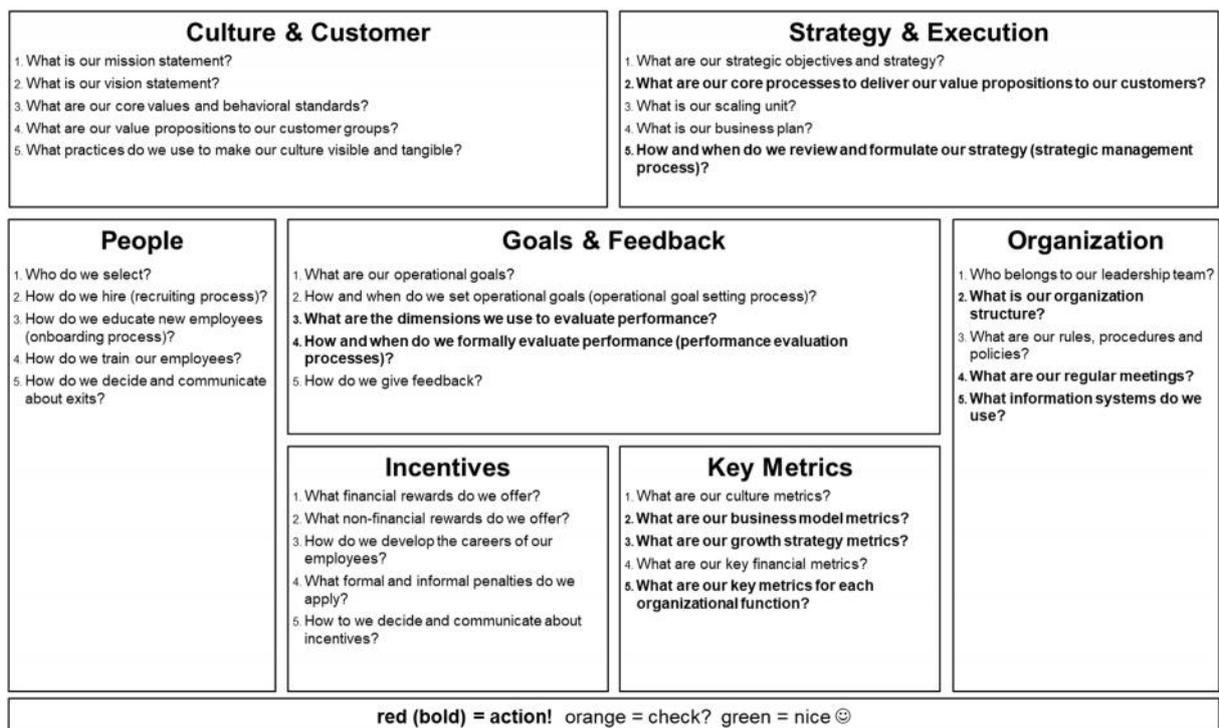


Fig. 54: Growth Management Canvas heat map (adapted from actual customer)

Fifth, the results of the total analysis can be summarized in the Growth Management Canvas heat map (figure 54). The heat map visualizes the status of a growth company's Growth Performance Management approach. The heat map uses a traffic light scheme. Green means that the practice is in place, in use, the design is functional and growth managers are aligned. Orange means that the practice is to be reviewed more closely at some point. Red means that

the practice is not existent but should be in place, the design is dysfunctional in itself or in its interdependence to other practices, or growth managers strongly disagree in their answers. The Growth Management Canvas heat map can also be used to prioritize action items.

Process for total analysis with documents. The total analysis also works with internal documents. Presentations, reports, spreadsheets, dashboards, handbooks and other internal documentation provide a rich database for conducting this workshop. The process is similar to the total analysis workshop with growth managers. An internal or external analyzer collects the internal documents, uses these internal documents to answer the questions of the Growth Management Canvas, and compares the answers. Table 66 illustrates such analytical comparison.

	Strategy presentation	Investor reporting	Onboarding document	Gap?	Quality?	Aligned?
What is our vision statement?	"We are going to become the #1 in the German market."	"Leading online specialist retailer for healthy nutrition in the German speaking market."	"Building a market leading ecosystem in the three areas of fitness, health and lifestyle nutrition."	No	OK	Yes

Tab. 66: Triangulation of internal documentation (adapted from BetaCo)

The actual total analysis workshop with growth managers focuses on the evaluation of findings and the development of an action plan for the most severe weaknesses, gaps and misalignments. A variation is that the comparison of the content of the documents in the tables can be conducted by two or three analyzers. This approach is similar to investigator triangulation.

Regular updates. According to my experience, growth companies should review and potentially adapt their performance management systems at least every six months. If environmental change dynamics are high, organizational growth is particularly high, or the business model is not yet stable, then reviews should take place more often. The total analysis workshop method can create a shared understanding and make the review process more efficient. Typically, such reviews are part of strategy workshops in the course of the strategic management process.

6.7.2. Quick check workshop

Goal. The total analysis workshop allows growth managers to create an in-depth overview of their Growth Performance Management approach. However, such a total analysis takes time. For this reason, this study suggests an approach for a shortened review. The Growth Management Canvas quick check allows growth managers to get a fast overview of their Growth Performance Management approach.

Method. The quick check builds on the principles of the total analysis. The method combines a checklist logic with the triangulation of growth managers' assessments. The quick check can generate an overview in just about 20 minutes.

Culture & Customer		Strategy & Execution			
<input type="checkbox"/> Y <input type="checkbox"/> N	Strong mission and/or vision statement	<input type="checkbox"/> Y <input type="checkbox"/> N	Clear set of actionable, measurable, time bound strategic objectives		
<input type="checkbox"/> Y <input type="checkbox"/> N	Core values and/or behavioral standards	<input type="checkbox"/> Y <input type="checkbox"/> N	Growth strategy (market position, economic logic, tactical staging)		
<input type="checkbox"/> Y <input type="checkbox"/> N	Strong value propositions to all customer groups	<input type="checkbox"/> Y <input type="checkbox"/> N	Clearly understood scaling unit (markets, products, customers)		
<input type="checkbox"/> Y <input type="checkbox"/> N	Story telling (founder story, firm history, customer stories)	<input type="checkbox"/> Y <input type="checkbox"/> N	Clearly defined core business processes (sales process etc.)		
<input type="checkbox"/> Y <input type="checkbox"/> N	Regular social team events (e.g. summer and Christmas party)	<input type="checkbox"/> Y <input type="checkbox"/> N	Regular strategic management process (e.g. regular strategy offsite)		
<input type="checkbox"/> Y <input type="checkbox"/> N	Deliberate design of the office (location, designs, meeting rooms)	<input type="checkbox"/> Y <input type="checkbox"/> N	Sound financial business plan (at least forecasts for P&L & cash flow)		
People		Goals & Feedback		Organization	
<input type="checkbox"/> Y <input type="checkbox"/> N	Structured hiring process	<input type="checkbox"/> Y <input type="checkbox"/> N	Clear set of operational goals (i.e. goals for 1-3 months, at least per team)	<input type="checkbox"/> Y <input type="checkbox"/> N	Complete founder team
<input type="checkbox"/> Y <input type="checkbox"/> N	Onboarding process	<input type="checkbox"/> Y <input type="checkbox"/> N	Regular process for setting operational goals (e.g. OKRs)	<input type="checkbox"/> Y <input type="checkbox"/> N	Complete leadership team
<input type="checkbox"/> Y <input type="checkbox"/> N	Company handbook	<input type="checkbox"/> Y <input type="checkbox"/> N	Regular process for goal achievement review	<input type="checkbox"/> Y <input type="checkbox"/> N	Organization chart (functions)
<input type="checkbox"/> Y <input type="checkbox"/> N	Leadership handbook	<input type="checkbox"/> Y <input type="checkbox"/> N	Clear set of performance evaluation dimensions	<input type="checkbox"/> Y <input type="checkbox"/> N	Set of strategic rules
<input type="checkbox"/> Y <input type="checkbox"/> N	Training plan	<input type="checkbox"/> Y <input type="checkbox"/> N	Regular performance review process for leaders and employees	<input type="checkbox"/> Y <input type="checkbox"/> N	Expense policy
<input type="checkbox"/> Y <input type="checkbox"/> N	Employee developm. plan	<input type="checkbox"/> Y <input type="checkbox"/> N	Deliberate approach to informal feedback in the situation	<input type="checkbox"/> Y <input type="checkbox"/> N	Defined decision councils
<input type="checkbox"/> Y <input type="checkbox"/> N	Structured exit process			<input type="checkbox"/> Y <input type="checkbox"/> N	Regular meetings schedule
		Incentives		Key Metrics	
		<input type="checkbox"/> Y <input type="checkbox"/> N	Competitive, skill-based salaries	<input type="checkbox"/> Y <input type="checkbox"/> N	Mission, vision, value propositions
		<input type="checkbox"/> Y <input type="checkbox"/> N	Variable compensation (e.g. for sales)	<input type="checkbox"/> Y <input type="checkbox"/> N	Customer acquisition & retention
		<input type="checkbox"/> Y <input type="checkbox"/> N	Employee stock option plan	<input type="checkbox"/> Y <input type="checkbox"/> N	Customer profitability
		<input type="checkbox"/> Y <input type="checkbox"/> N	Salary and position/title scheme	<input type="checkbox"/> Y <input type="checkbox"/> N	Employee acquisition & retention
		<input type="checkbox"/> Y <input type="checkbox"/> N	Career development plan	<input type="checkbox"/> Y <input type="checkbox"/> N	Employee satisfaction
		<input type="checkbox"/> Y <input type="checkbox"/> N	Process for recognition & exposure	<input type="checkbox"/> Y <input type="checkbox"/> N	KPI dashboard for each function
		<input type="checkbox"/> Y <input type="checkbox"/> N	Set of contingent penalties	<input type="checkbox"/> Y <input type="checkbox"/> N	Financial KPIs
		<input type="checkbox"/> Y <input type="checkbox"/> N	Decision & communication process		
				<input type="checkbox"/> Y <input type="checkbox"/> N	IT for business operations
				<input type="checkbox"/> Y <input type="checkbox"/> N	IT for customer relations (CRM)
				<input type="checkbox"/> Y <input type="checkbox"/> N	IT for team collaboration
				<input type="checkbox"/> Y <input type="checkbox"/> N	IT for knowledge mgmt.
				<input type="checkbox"/> Y <input type="checkbox"/> N	IT for human resources
				<input type="checkbox"/> Y <input type="checkbox"/> N	IT for business analytics
				<input type="checkbox"/> Y <input type="checkbox"/> N	IT finance & accounting

Fig. 55: Template of the Growth Management Canvas quick check

Process. The quick check method follows a three-step process. First, the template of the Growth Management Canvas quick check (figure 55) is distributed and explained to workshop participants by the workshop moderator. Second, the workshop participants tick off ‘yes’ or ‘no’ to each practice. This second step can be adjusted according to three levels of difficulties. Is a practice formalized, i.e. written down and is a documentation existent? Even if written down – is a practice actually being used? Even if written down and present – is the practice satisfying in its current design? Third, the practices, which at least one workshop participant ticked off as ‘no’, are sequentially evaluated, action items are derived and prioritized.

Example. As an example, the onboarding process of new employees is an often-overlooked performance management practice. Several workshop participants might tick off ‘no’. The discussion reveals that the onboarding process is not structured and is also not linked to cultural performance management practices at all. Lack of structure and content of the onboarding process hinders the learning of new employees, which is especially problematic because the company is growing rapidly in size. The re-design of the onboarding process is thus prioritized high on the action item list.

6.7.3. Internal consistency analysis workshop

Goal. Performance management practices function together. Internal consistency between practices likely results in superior performance. The goal of the internal consistency analysis is that growth managers evaluate whether the designs of interdependent practices work and fit together.

Method. The workshop method compares the design of one performance management practice to designs of other interdependent performance management practices. The Growth Management Canvas and its questions provide a template to the analysis.

Process. The internal consistency analysis follows a three-step process. First, workshop participants determine that performance management practice, whose design's influence on internal consistency is to be analyzed. This practice to be analyzed can be a newly adopted one, a re-designed one or a practice whose design is questionable. Second, workshop participants determine those practices, whose designs are particularly interdependent to the practice in question. These practices can belong to the clusters of multi-directional interdependencies (chapter 5.8) or other practices that growth managers suspect to be particularly influenced by the practice to be evaluated. Third, workshop participants compare practices one by one and evaluate their mutual consistency. The evaluation can consider many different criteria. In the context of growth companies learning is the central control problem and therefore learning is likely the most essential criteria.

Example. These rather abstract thoughts shall be explained by using target setting as an example. First, workshop participants determine operational targets as the performance management practice to be analyzed, because they want to understand why their target setting seems to not work well. Second, using the Growth Management Canvas workshop participants identify other practices that targets are particularly interdependent with. As outlined in chapter 5.8, targets are part of the goals cluster (mission, vision, key success factors, value propositions, strategic objectives, operational targets) as well as the management control cluster (performance measurement, target setting, performance evaluation and reward systems). Third, workshop participants compare their target setting design to the designs of these other performance management practices one by one. In this exemplary analysis workshop participants discover two internal inconsistencies.

The first inconsistency is that operational targets are not aligned across different organizational functions, because founders do not share their annual strategic objectives with all middle managers. Relatedly a strategic management process does not exist. This design of strategic objectives and the strategic management process hinders the learning of middle managers about operational targets that contribute to superordinated organizational objectives. Middle managers do not exactly know what to learn about. The second inconsistency is that the company cannot yet define performance dimensions well for operational targets, while at the same time targets are formally linked to high-powered, short-term financial bonuses. Unstable performance dimensions require rather broad organizational learning processes, while bonuses imply that learning can be directed on clear performance dimensions. Middle managers do not know what to learn about and why to learn. Consequentially, in the target setting process middle managers set easily achievable targets in contrast to the stretch targets that the company would

need to grow. In this example, the internal consistency analysis might result in three action items: founders share their annual strategic objectives, a strategic management process is implemented, and financial bonuses are decoupled from operational targets.

6.7.4. Selection, socialization and exit

Goal. The Growth Management Canvas' two questions on selection, the question on socialization and the question on exit interrelate strongly with other questions of the Growth Management Canvas. For selection (hiring, recruiting), the goal is to evaluate whether potential candidates fit to the growth company. For socialization (onboarding), the goal is to efficiently educate new employees about the company's performance management approach. For exit, the goal is to apply consistent evaluation criteria when deciding about contract terminations.

Method. The Growth Management Canvas' questions can be modified into recruiting questions. The performance management practices' designs can function as evaluation criteria for candidates' fit to the organization; these evaluation criteria can be applied in both selection and exit. The Canvas can provide a comprehensive overview of the content that should be conveyed to new employees in the socialization process.

Selection. The questions of the Growth Management Canvas as well as the performance management practices designs provide evaluation criteria for the hiring of new employees. Although not all, but several questions of the Growth Management Canvas can be modified and then be used in the recruiting process in order to determine the fit of the candidate to the organizational context. For instance, the question 'what are our core values?' can be modified into 'what core values does the candidate expect to find in the new company?'. This way, the fit of a candidate to the performance management context can be evaluated. The questions can be differentiated according to the candidate type. Middle managers might be asked more questions from the Strategy & Execution and Key Metrics boxes, while employees might rather be asked questions from the Goals & Feedback and Incentive boxes. Questions regarding the cultural fit from the Culture & Customer box, as in the example above about the core values, are essential for all candidates.

Socialization. The Growth Management Canvas provides a quick overview of the most essential content for socialization. Onboarding trainings, initial socialization and ongoing cultural education involve that new employees learn about the actual designs of the Growth Performance Management system. Rapidly growing companies need to add new employees quickly and the Canvas provides a framework for teaching them about the most essential performance management practices. New employees need to learn about culture, strategy, rules and principles, organization, meeting schedules, information systems, operational targets, KPIs, and incentives.

Exit. The intended exit of employees is one of the strongest performance management practices. This is true for the possibility of an exit as the ultimate penalty as well as the actual exit of an employee. Contract terminations are often ad-hoc, unsystematic, incoherent, and thus difficult to communicate to the organization. Employee exits can have severe impact on organizational culture. The Growth Management Canvas' practices provide evaluation criteria for the exit of employees. Evaluation criteria can relate to culture or rules (Culture & Customer and Organization box), to strategy and structure (Strategy & Execution and Organization boxes), or performance (Organization, Goals & Feedback and Key Metrics boxes). These evaluation criteria include tensions and require trade-offs. For instance, an employee can perform well on their goals and key metrics and play an essential role in the organization, yet repeatedly violates the growth company's core values. The Growth Management Canvas can help in systematically applying the evaluation criteria, mitigating the tensions and being aware of the trade-offs in the decision process about the exit of an employee.

Systematization and alignment. As elaborated in several chapters above, growth companies' key challenge is that they rapidly grow in organizational size. At high pace growth companies add new employees to an instable organization with a barely tested business, who need to work under high performance pressure. For this reason, selection, socialization and exit belong to the most powerful as well as longest lasting performance management practices. The Growth Management Canvas can help in systemizing and aligning the processes of selection, socialization and exit in order to convey a consistent picture of the company's Growth Performance Management approach.

6.7.5. Management due diligence

Goal. Performance management is key factor for long-term success. The goal of a management due diligence is to provide stakeholders with an overview of growth managers' abilities to manage growth.

Method and process. An in-depth management due diligence applies the method and process outlined for the Growth Management Canvas total analysis (see chapter 6.7.1). A shortened management due diligence applies the method and process elaborated for the Growth Management Canvas quick check (chapter 6.7.2).

Investors. In addition to the traditional commercial, financial, legal and technical due diligences, investors can use the Growth Management Canvas as part of a management due diligence. Venture capitalists consider a venture's management team by far as the top factor for their investment decisions as well as for successful and for unsuccessful investments (Gompers, Gornall, Kaplan & Strebulaev, 2016). Roughly the underlying logic is as follows: The management team has the abilities and willingness to design effective performance management practices and effective practices in order to increase the likelihood of desired

performance outcomes. As the paper by Gompers, Gornall, Kaplan & Strebulaev (2016) indicates, investors usually evaluate the management team only – i.e. the abilities and willingness of the growth management team. The Growth Management Canvas total analysis and quick check allow investors to also evaluate the effective design of performance management practices. I have discussed this idea with venture capital investors and business angels, and it might be an interesting further application of the Growth Management Canvas.

Further stakeholders. The application of the Growth Management Canvas for the purpose of a management due diligence can be extended to further stakeholder groups as well. Especially customers and corporate partners can use the Canvas to decide whether to work with a growth company on a long-term basis, for instance when they support its growth with working capital. Similarly, middle managers and employees can use the Canvas to decide whether to join a growth company. It is important to note, however, that such management due diligence requires access to either growth managers or internal documentation.

6.7.6. Business model innovation

Goal. At AlphaCo, BetaCo and DeltaCo as well as during consulting projects with growth companies I observe the tight integration of business model logic and performance management approach. Entrepreneurs, who think about a business idea or are already working on it in early stages, might use the Growth Management Canvas to reflect on their business model innovation from a management point of view. The goal is to find out whether a business model innovation can realistically be supported by a consistent Growth Performance Management approach.

Business model logic and performance management have close linkages. Gassmann, Frankenberger & Sauer (2016, p. 20) consider essential parts of performance management as one out of four “cornerstone of business models”, which is how the value proposition is created. Conversely, the Growth Management Canvas conceptualizes the dynamic value proposition statement to different customer groups as a relevant performance management practice with strong links to organizational culture. In this line of thinking, my colleagues and I have outlined a framework of how business model innovations can be translated into KPIs and organizational design as the foundation of a scaling strategy (Engelhardt, Gassmann & Möller, 2019). There are, therefore, good reasons to think business model innovations and Growth Performance Management in an integrated manner.

Method. The method is based on the principle of a checklist, trigger questions, brainstorming answers, ranking of answers as well as testing by simple examples. The questions of the Growth Management Canvas work both as a checklist and as trigger questions for brainstorming answers on the implications of a business model idea for the respective performance management approach. The answers are ranked from easy until difficult and potentially severe

challenges to the business model idea. The quality of the answers can be tested by using simple examples.

Process. The process of testing the implications of a business model idea for performance management includes four steps. First, entrepreneurs need to elaborate their business model innovation clearly; frameworks such as the business model canvas (Osterwalder & Pigneur, 2010) or the magic triangle (Gassmann, Frankenberger & Csik, 2013) can help to structure the business model idea. Second, entrepreneurs address the Growth Management Canvas questions one by one and brainstorm answers either together or in break-out sessions. Third, the quality of the answers – the suggested designs of the respective performance management practices – are tested by simple examples. If an understandable, straight-forward example can be provided, then the answer (the design) is satisfying; if not, then the answer is not clearly understood. Fourth and finally, answers are ranked in order to identify those performance management practices that are most difficult to design and/or implement with respect to the business model idea. The difficult answers are those that challenge the managerial feasibility of the business model innovation the strongest.

Focus areas. All boxes of the Growth Management Canvas are relevant for this test of a business model innovation. However, there are focus areas. Typically, these focus areas include the culture required for the business idea, the scaling strategy and the scaling unit, the financial business plan, the core business processes to deliver the value proposition, the founder team composition and organization structure needed, the attraction of talented employees and middle managers, and the translation of the business idea into (non-financial) KPIs. Generally, the translation of business model innovations into consistent Growth Performance Management approaches is an interesting avenue for future research.

6.7.7. Mergers and acquisitions

Goal. BetaCo and DeltaCo both acquired other companies as part of their growth strategies. The Growth Management Canvas can be used to analyze potential mergers and acquisitions beforehand as well as to support the post-merger integration. Before the merger or acquisition, the analysis includes to find out whether the two companies can be integrated from cultural, strategic, processual, organizational and management control perspectives. After the merger or acquisition, the post-merger integration potentially requires harmonizing the performance management approaches of the two organizations. This approach is suited for mergers and acquisitions that aim at integrations of operations and not just ownership relationships.

Method. The method combines the trigger questions of the Growth Management Canvas with analytical comparison tables. Basically, total analyses are conducted for both organizations, the results of the total analyses are compared, and similarities and differences are discussed.

Process. The three steps process is the same for analyzing a potential merger or acquisition and for managing a post-merger integration. First, the Growth Management Canvas questions are answered for both organizations. The answers can come from the growth managers of both companies. In the case of an acquisition, the acquiring company might want to conduct the total analyses for both organizations using internal documentations. Second, the answers to each question are filled in the analytical comparison tables. Third, the answers are compared and discussed. Performance management practices' designs can be similar or different. For similar designs, it is essential to understand why they are similar. For different designs, it is essential to understand why designs deviate and whether the designs need to be harmonized or not. For instance, different approaches to goal setting might provide challenges to a coherent organizational culture and might need to be harmonized, while different performance measurement systems can reflect slight differences in business models and hence can remain different. Before the merger or acquisition, this analysis provides a list of potential challenges to leveraging synergies between the two organizations. After the merger or acquisition, this analysis provides a list of action items for the adoption or re-design of performance management practices in both companies.

Identity and performance management. Bouchikhi & Kimberly (2012, p. 63) investigate mergers and conclude: "The psychological factors and identity questions that are part of any merger are often overlooked. That's a huge mistake." Organizational identities are openly formalized in cultural performance management practices, such as mission, vision and values. Yet organizational identities are also embedded in other practices, for instance how goals are set, how tight roles and responsibilities are or what rewards and penalties are emphasized. The analysis of mergers and acquisitions with the Growth Management Canvas can help to avoid unsuccessful mergers and acquisition beforehand and mitigate potential distortions during the post-merger integration.

6.8. Documentation

Classical forms. Performance management needs to be documented and written down in some form. As organizations grow, only documented performance management practices can be consistently designed, persistently communicated, emphatically enforced, and systematically adapted in order to reflect learning. Classical forms of documentations are presentations (e.g. in Microsoft PowerPoint), reports and spreadsheets (e.g. in Microsoft Excel) as well as continuous texts (e.g. in Microsoft Word) as well as information systems for different purposes. Table 67 provides an overview of classical forms of documentation of performance management practices.

Culture & Customer	Strategic & Execution	Organization	People	Goals & Feedback	Key metrics	Incentives
Mission statement	Strategic objectives	Founders' roles	Job descriptions	Operational goals	Profit & loss statement	Salary schemes
Vision statement	Strategy presentation	Mid-managers' roles	Hiring process	Goal setting process	Balance sheet	Title schemes
Brand analysis	Investor presentation	Organization chart	Hiring plan	Perf. dimensions	Cash flow calculation	Bonus schemes
Core values	Strategic bus. plan	Employee list	Onboarding process	Performance reviews	Financial planning	Stock option plan
Behavioral standards	Financial bus. plan	Core procedures	Company handbook	Informal feedback	Fin. business cases	Compensation
Code of conduct	Scaling unit	Strategic rules	Leadership handbook	Feedback	KPI reports (company)	Career dev. Plan
Company presentations	Core processes	Core policies	Training policy & plan	trainings	KPI reports (functions)	Contingent penalties
Value propositions	Strat. mgmt. process	Expense policy	Employee devel. Plan			Decision process
Shared stories		Legal fact book	Exit process			
Regular events		Decision councils				
Concept office design		Meeting schedule				
		Information systems				

Tab. 67: Documentations of performance management practices

First inferences based on documents. This list of documentations is an essential part of Growth Performance Management. These documents are required before every workshop. The process of collecting the documents reveals much about growth managers’ performance management abilities. First inferences based on documents are surprisingly precise. Still, inferences based on documentations should always be considered in the context of the growth company’s specific situation, organizational size and line of business, and should always be discussed with growth managers.

In the case that growth managers have difficulties to gather the documents, then it can be inferred that they do not coordinate well on performance management; practices are likely designed in functional ‘silos’ and internal inconsistencies can be expected. If a document does not exist but should, it can be inferred that there is a gap in the overall performance management approach. If documents are crafted carelessly, it can be inferred that the associated practices are either not used or not iterated and adapted. If there are too detailed documentations, for the whole company or for certain functions, it can be inferred that the organization lacks the flexibility and adaptability needed for growth. If there are contradictions about performance management practice design in-between documents or if documents define and use terms and language differently, it can be inferred that growth managers are not aligned and provide conflicting signals to their organization.

Documents align. In Growth Performance Management workshops, growth managers manage more consistently and are more aligned, if dedicated written documents exist. It is recommended to write down more. The number of performance management practices, which are written down and hence formalized, provides a good indication of the growth company’s stage of knowledge about business model and growth strategy.

6.9. The 7 principles of Growth Performance Management

Growth is a non-trivial process. Growth managers have difficult jobs. This study contains a lot of empirical data, analyses and discussions of results. Findings are detailed and insights are multifaceted. The growth of organizations is constructed of a variety of interrelated aspects. Nonetheless, the following seven principles pervade this study as well as the concept of Growth Performance Management.

Commitment to growth. The will and ambition to grow is the foremost ingredient to growth. Especially founders grow their business mentally before they scale their organization. People must subscribe to the growth vision. Startups cannot stay startups.

Optimizing for learning. Growth is learning. Learning about customers' problems is the most central cultural value. A learning culture is to be established early on. There are no short-cuts to learning. Telling one's true opinion must be save. Money does not solve all problems.

Simplicity. Effective management is simple. Less is more. Focus is everything. Leaders need to use clear language, precise definitions and unambiguous concepts. Organizations need to develop a common language about the things that matter. What matters needs to be written down, reviewed, repeated and iterated.

Action and reflection. All knowledge is preliminary. Setting goals, working hard and measuring results is the engine of learning. Goals and key metrics can be understood as questions to and hypotheses about the world. Goal setting is leadership, measuring is entrepreneurship. Goals and key metrics beyond immediate control are the interesting, relevant and worthwhile ones. Trial-and-error advance growth companies through their stages of knowledge. Action must be based on reflection.

It's a people business. Learning is an emotional process. Personal relationships are the basic substance of behavior, motivation and learning. Growth requires leadership. Founders and middle managers have pivotal roles in growing ventures. Yet founders and middle managers are not the only growth managers and the team is always larger than just the employees on the payroll. There must be clarity of who is a growth manager. Firm growth is a people business.

Fairness. People grow organization and organizations grow people. The willingness to learn depends on fairness. High powered financial rewards are only fair when performance can be determined and measured exactly. Non-financial rewards are to be preferred over financial rewards. Integrity means that the same rules apply to everyone. It is not fair to not use penalties. Fairness is both: taking care and demanding discipline.

Learning must be managed. Learning does not just happen. Learning can be helped, but learning can also be hindered. Management should not be left to chance. Practices are to be used systematically. Inconsistencies are to be avoided. People need to be convinced of the

performance management approach. It is not culture or control; it is about culture and control. Designing for 'search' is different than designing for 'execution'. The right performance management design and use depends on context and situation. Growth Performance Management is always under construction.

Firm growth is no self-purpose. Maybe this is principle number 8. Foremost it is my personal opinion after ten years of work and research in the startup world. Growth needs to serve people. Survival should be put before growth. Scaling a company should result in real solutions to actual customer problems, in the distribution of innovative technologies, in improving an economy's productivity, in meaningful jobs and an increase in social welfare. This study as well as the concept of Growth Performance Management hope to support growth managers in their daily struggle to lead their growth companies to success.

7. Conclusion

7.1. Theoretical contributions and practical innovations

Core contributions. This study investigates performance management systems in the growth stage. By investigating growing ventures, which represent an extraordinary type of organizations, and by applying Ferreira & Otley's (2009) 12-questions performance management system framework extensively, this study also provides insights for the newly emerging performance management research.

This study examines and explains the design and use of performance management systems in three entrepreneurial growth companies (chapter 4.1). A total of 54 practices and themes of performance management systems are investigated. 39 practices are implied by Ferreira & Otley's (2009) framework and 15 practices emerge during the investigation. Although AlphaCo, BetaCo and DeltaCo have different business models in different industries and are managed by founder teams with different backgrounds, their answers to Ferreira & Otley's (2009) 12-questions performance management framework are remarkable coherent. The cross case analysis matches patterns for performance management design and use. These patterns are substantially consistent across all three case studies.

These findings supports this study's theoretical proposition (chapter 4.2). Organizational learning is the dominant control problem to case studies' performance management systems (cf. Grabner & Moers, 2013). Case studies' system configurations can be explained by their intention to optimize for organizational learning (cf. Kloot, 1997; Simons, 1995). More specifically, in order to achieve their growth objective, case studies design and use their performance management systems to facilitate organizational learning processes (Huber, 1991), to introduce more single loop learning, and to balance single loop and double loop learning (Argyris & Schön, 1978; March, 1991).

The empirical evidence supports this study's theoretical model (Otley, 1980) – the growth stage contingency model (chapter 4.3). The growth objective is the most dominant contingent variable (Chenhall, 2003). In order to grow, case studies design and use their performance management systems so that organizational learning processes are facilitated and organizational learning modes are balanced. The use of single loop learning and/or double loop learning is dependent on respective stages of knowledge (Garvin, 1983, p. 84). These findings can be analytically generalized to the domain of entrepreneurial growth companies (Eisenhardt, 1989a, p. 537; Yin, 2014, pp. 40-45). This study uses established organizational learning concepts – organizational learning processes, organizational learning modes and stages of knowledge – to propose a parsimonious, testable, and logically coherent theory for describing, explaining and

predicting performance management system design and use in entrepreneurial growth companies.

Entrepreneurial growth companies design and use learning-oriented performance management systems in order to advance through stages of knowledge about their business models and growth strategies (chapters 5.2 and 5.3). Performance management and organizational learning assume a recursive relationship. On the one hand, performance management system design and use result in case studies' capabilities for organizational learning – performance management determines organizational learning. On the other hand, the need for organizational learning results in specific performance management system design and use – organizational learning determines performance management.

Results emphasize the relevance of designing a learning culture in entrepreneurial growth companies (chapters 5.5 and 5.6). AlphaCo, BetaCo and DeltaCo's orientation towards learning is embedded in and enforced through their organizational cultures. Culture and control have a multifaceted relationship. Cultural performance management practices are the primary modes of control across all three case studies (Sandelin, 2008). Organizational culture as the primary mode of control shapes the design and use of the other components of the performance management system. The dominance of cultural practices contributes to internal consistency and allows to conceptualize performance management as a system rather than a package.

This study applies Ferreira & Otley's (2009) 12-questions performance management system framework as theoretical foundation, as a methodological framework as well as an analytical research instrument. Ferreira & Otley's (2009, p. 276) themselves call out for testing their framework's robustness. Chapter 5.11 provides an evaluation. Strengths are highlighted and weaknesses are discussed. Potential gaps in the framework, which were observed when using it in practice, are analyzed as 'emergent themes' in chapter 4.1 and discussed in chapter 5.11.

This study also aims at contributing to performance management as an emerging academic discipline (chapter 5.12). Entrepreneurial growth companies operate under particularly dynamic, uncertain conditions and have to cope with extraordinary performance pressure. "Practice leads theory" (Otley, 2008, p. 238), and hence this study proposes that entrepreneurial growth companies may provide many insights into how contemporary companies could or even should manage performance in order to adapt effectively to today's dynamic business environments. Chapter 5.11 elaborates on similarities and differences between management accounting, management control and performance management, and discusses how management accounting and control could evolve towards performance management.

Additional contributions. This study makes further contributions. First, this study uses action research (Malmi, 2016) as its methodological approach in combination with consistent use of Ferreira & Otley's (2009) 12-questions performance management system framework (chapter

3). This methodological approach could inspire other researchers, who intend to investigate holistic performance management systems in organizations that are under-researched as well as difficult to gain access to. Second, this study's innovative definition allows to delineate entrepreneurial growth companies more precisely from startups and mature companies, which could facilitate research into growing ventures specifically (chapter 2.4). Third, the investigation results in the proposition and discussion of clusters of multi-directional interdependencies between performance management practices (chapter 5.8). Fourth, this study also proposes and discusses the sequential adoption and simultaneous evolution of performance management practices in the startup and growth stages (chapter 5.9). Both concepts are drafted, yet not completely elaborated. Thus, multi-directional interdependencies as well as sequential adoption and simultaneous evolution might provide interesting avenues for future research.

Spin-off papers. Two academic papers have originated from this research project already. Engelhardt & Möller (2017) analyze and explain the design and use of OKRs as a goal setting system for startups and growth companies. Engelhardt, Gassmann & Möller (2019) integrate business model logic, strategic performance measurement and organizational design to explain how innovative business models can be scaled rapidly. Further publications are planned.

Practical innovations. The theoretical contributions provide implications for managerial practice (chapter 6). The practical innovations might support founders, managers, employees, investors, consultants and advisors to steer their organizations through the growth stage. The concept of Growth Performance Management delineates startups from entrepreneurial growth companies and defines growth managers as those organizational participants that create and control firm growth through the purposeful design of learning-oriented performance management practices (chapters 6.1 to 6.4). Growth companies' core management challenge is to organize organizational learning. Thus, learning is proposed as the guiding principle for the design and use of performance management systems in growth companies.

The Growth Management Canvas is the central framework of the Growth Performance Management concept (chapter 6.5). The Canvas' seven boxes provide a quick overview of all performance management practices available to growth managers. The Canvas is operationalized with 35 theory-based and practice-oriented questions in order to guide the design of a customized Growth Performance Management approach. The Canvas' performance management practices are defined precisely and design recommendations are provided (chapter 6.6). The Growth Management Canvas can be applied in many ways; seven applications are suggested and explained (chapter 6.7). Finally, the concept proposes seven comprehensive principles for managing growth (chapter 6.9). It is noteworthy that the concept of Growth Performance Management and the Growth Management Canvas as are not just possibilities, but were developed through the action research methodology, actual consulting work and tested in real-life growth companies.

7.2. Otley's and Yin's criteria

This chapter evaluates this study using Otley's (2008, 238) eight "desirable attributes of a research project" as well as Yin's (2014) "traditional concerns about case study research" (pp. 19-23) and "five general characteristics of an exemplary case study" (pp. 200-206). The application of 'checklists', such as Otley's and Yin's, have the advantage that 'cherry picking' is not possible: Researchers cannot just discuss comfortable weaknesses and limitations.

Otley's eight desirable attributes of performance management research. Otley (2008, p. 238) suggests the following "eight 'I's' for desirable attributes of a research project in [management accounting and control research]". Otley's (2008) criteria focus particularly on the development of performance management theory.

(1) Incremental – build on what we already know: This study builds on Ferreira & Otley's (2009) performance management framework as well as Simons' (1995) levers of control theory. The study uses three established concepts from organizational learning theory (Argyris & Schön, 1978; Garvin, 1993; Huber, 1991; March, 1991). The study defines entrepreneurial growth companies using eight criteria and grounded in life cycle theory. The study builds on and extend previous studies on management control systems adoption and evolution (especially Dávila & Foster, 2005, 2007). Finally, the study draws draw on previous findings from the entrepreneurship literature.

(2) Interpretative – includes individual perceptions that drive behavior: The action research approach allows to tab subjective areas of behavior (Malmi, 2016, p. 42). The study addresses informal performance management practices and relate them to formal practice. Finally, the study includes participant observations as a relevant source of evidence for data triangulation (Yin, 2014, pp. 113-117).

(3) Integrated – keeps a holistic focus: This study investigates AlphaCo, BetaCo and DeltaCo's entire performance management systems using Ferreira & Otley's (2009) framework. The study draws on Simons' (1995) integrated levers of control framework. Finally, the study adopts a systems approach in contrast to a reductionist approach (Grabner & Moers, 2013).

(4) Inclusive – considers all stakeholders: Action research allows to gather empirical evidence on behavior from several perspectives and many different organizational members (Lüscher & Lewis, 2008, p. 222). Semi-structured interviews and project interviews were conducted on several levels of organizational hierarchy, most if not all teams of case studies were investigated, and documents were gathered that were created by and/or addressed to different stakeholder groups (chapter 3.6.3).

(5) International – not confined to a single culture: Although DeltaCo operates worldwide, this research concentrates on German entrepreneurial growth companies. Other cultures are not explicitly considered.

(6) Imaginative – not formulaic: The study goes beyond Ferreira & Otley's (2009) framework and Simons' (1995) theory and identifies a total of 15 emergent themes for performance management (chapter 4). Where necessary, own concepts are developed, such as the scaling unit or the categorization of organizational processes. The study imagines beyond immediate results and findings are discussed in the broader context of performance management as a new academic discipline (chapter 5). As a result, from the analyses, the concept of Growth Performance Management and the framework of the Growth Management Canvas are created specifically for the context of growth companies (chapter 6).

(7) Interesting – or why do it: First of all, I myself find this research question interesting and relevant. The literature does not provide sufficient answers to the research question (chapter 2.7). Based on organizational learning this study develops a parsimonious, testable, and logically coherent theory (Eisenhardt, 1989a, p. 548) of how and why entrepreneurial growth companies design and use their performance management systems. This theory can describe, explain and predict performance management system design and use in the growth stage. This study also develops new research questions, which are considered as a sign of an interesting and relevant study (chapter 7.5).

(8) Influential – relevant to practice: The emerging theory as well as organizational learning as a design principle for management practice are useful in both studying and improving real organizations (cf. Otley, 2008, p. 238). The study elaborates extensively on implications for management practice in various chapters. The Growth Management Canvas is already being used in management practice and by entrepreneurs (chapters 6.6 and 6.7).

Yin's traditional concerns. Yin's (2014, pp. 19-23) five traditional concerns include: the scientific rigor in case study research, a potential confusion of case studies with teaching cases, the possibility of generalizing from case studies, the potentially unmanageable level of effort, and the comparative advantage of case studies versus other research strategies. First, this study explicitly discusses how the quality criteria for qualitative research in general and for action research specifically are met (chapter 3.5). Second, it is not assumed that this case study investigation can really be confused with teaching cases. Third, the study analytically generalizes results to the study's theoretical proposition and not to populations (chapters 2.8, 3.4.1 and 3.4.2). In addition, entrepreneurial growth companies are clearly defined as the boundaries of possible generalization (chapters 2.4 and 3.4.2). Forth, the level of effort is indeed significant for investigating holistic performance management systems for three case studies. Finally, case study research is appropriate for this study's research question, as the study

examines a contemporary phenomenon, as the study requires a large amount of data for a large number of different, interrelated constructs (performance management practices and themes), and as previous theory development related to the research question is rather low (chapters 2.7 and 3.1).

Yin's exemplary characteristics. Yin's (2014, pp. 200-206) five general characteristics of an exemplary case study include: a case study's significance, completeness, consideration of alternative perspectives, display of sufficient evidence, and its composition in an engaging manner. First, the study is significant, as it investigates a relevant type of organizations that significantly contributes to society's and economy's digital transformation, innovativeness and growth (chapter 1). Second, the study's evidence is complete, as it maintains a comprehensive case study database and a consistent chain of evidence (chapter 3.4.3). Third, three rival theoretical explanations are considered, discussed and dismissed (chapter 5.1). Fourth, the empirical evidence is presented in a transparent way. An independent 'auditor' could review findings from individual data points to theoretical conclusions in a consistent chain of evidence. Finally, Yin (2014, p. 205) states that "the case study must be composed in an engaging manner". This characteristic is to be judged by the reader of this study. For sure, I put effort into a clear, brief writing style as well as into summarizing tables and figures.

7.3. Strengths, weaknesses and limitations

In addition to Otley's and Yin's criteria, a summary is provided of strengths, weaknesses and limitations of this study's topic, theoretical foundation, methodology as well as theoretical and practical results.

Strengths. This study has strengths in topic, theoretical foundation, methodology and results. First, the topic of this study can be considered as a strength (chapters 1 and 2). Mature companies have received a lot of scientific attention ever since and research on startups has picked up as well. Yet the growth stage as the life cycle stage between these two types of firms has not received much attention (Dávila, 2005, p. 223). All successful companies have to go through the growth stage. The growth stage holds a large research opportunity for performance management. Previous studies show the relevance of the adoption and evolution of management control systems for growing ventures (chapter 2.7). This study builds on and extends previous research and investigates the specific performance management system design and use in entrepreneurial growth companies. By doing so, this study is one of the few studies of holistic performance management systems (Bedford & Malmi, 2015, p. 2; Stringer, 2007, p. 97) and thereby contributes to performance management theory.

Second, this study has theoretical strengths (chapter 2). This study and its research question assume a clear theoretical foundation in contingency theory, life cycle theory and the management accounting and control literature. Drawing on organizational learning theory, a

theoretical model is proposed and a theoretical proposition is developed, both of which guide the investigations. Furthermore, the study leverages Ferreira & Otley's (2009) performance management framework and its twelve questions in depth, but also reflects on it. Moreover, analyses and results link back to theory as well as to previous studies from the management accounting and control literature as well as life cycle theory and entrepreneurship literatures. Finally, the study is precise in its theoretical sampling and proposes an innovative eight criteria definition of entrepreneurial growth companies. This innovative definition can help to distinguish growth companies from startups and thus facilitate research on performance management in the growth stage.

Third, this study has methodological strengths (chapter 3). Entrepreneurial growth companies are challenging to investigate. It is difficult to get access to organizations growing more than 100% in revenue year over year and operating under such extreme performance pressure. In addition, the research question implies to gather both broad data on case studies' entire performance management system and detailed data on each performance management practices' design and use. My past professional experience as a finance executive at Groupon (cf. Burgelman & Siegel, 2008, p. 141) as well as action research as a method to gather data and learn from interventions (Malmi, 2016, pp. 32, 37, 40) put me in a unique position to investigate these three entrepreneurial growth companies.

The investigation of three case studies allows to adopt a replication logic, to rely on a theoretical proposition as an analytic strategy and to use pattern matching as analytic technique (Yin, 2014, pp. 136, 143, 239, 240; Eisenhardt, 1989a, p. 542). Associated with pattern matching as analytic technique data triangulation is applied. Moreover, clear research instruments are defined, tools for data analyses and their display are applied and an auditable chain of evidence is maintained through the consistent use of Ferreira & Otley's (2009) 12-questions performance management system framework. Finally, chapter 3.5.1 explains how this study meets Yin's (2014, pp. 45-49) quality criteria for case study research and chapter 3.5.2 explains how this study meets Davison, Martinsons & Kock's (2004) quality criteria for action research.

Fourth, this study's results are relevant from a theoretical and practical point of view (chapters 4, 5, 6). This study finds sufficient empirical evidence to support the theoretical proposition and the growth stage contingency model. The growth stage contingency model integrates management accounting and control theory and organizational learning theory. The support for the theoretical model allows to create a novel, parsimonious, testable and logically coherent theory (cf. Eisenhardt, 1989a, p. 548) about the design and use of performance management systems in the growth stage. It can be considered as a distinguished strength of results that 'organizational learning as a design principle' is simple and can describe, explain as well as predict performance management system design and use. Rival theories, as examined in chapter 5.1, cannot explain findings comparatively better. Moreover, theoretical results are discussed

in the context of performance management (chapters 5.11 and 5.12) and several avenues for future research are suggested (chapter 7.5). These theoretical results have implications for management practice (cf. Labro & Tuomela, 2003, p. 412), and are applied in the practical concept of Growth Performance Management.

Weaknesses and limitations. This study has limitations and weaknesses in theoretical foundation, methodology and results. First, weaknesses and limitations can be identified with respect to this study's theoretical foundations. While the concept of interactive and diagnostic use of performance measurement and feedback systems is clearly defined by Simons (1995), the *use* of other performance management practices such as beliefs systems or organizational design is defined comparatively weaker (Simons, 1995, pp. 34-36, 39, 157; chapter 2.2.6). Further, the definitional strictness of entrepreneurial growth companies in chapter 2.4.3 bears the risk of narrow and idiosyncratic theory (cf. Eisenhardt, 1989a, p. 547); however, this strictness is explicitly intended here to determine clear boundaries for analytical generalization. Moreover, Ferreira & Otley's (2009) performance management framework and its twelve questions might be considered incomplete from an user point of view (chapter 5.11), since it does not cover all components of a holistic performance management system, does not define all themes and practices theoretically, and does not outline design options for all its sections.

Second, this study has methodological weaknesses and limitations, most of which are associated with case studies and action research. Findings are based on pattern matching of three case studies. This limits generalization. For this reason, the study refers to findings by previous studies and generalizes analytically to its theoretical proposition within the clear boundaries of its definition of entrepreneurial growth companies. The study does not intend to generalize statistically to a population (Yin, 2014, p. 40). Nonetheless, the transfer of findings to other contexts necessarily remains limited.

Action research involves weaknesses and limitations (cf. Eden & Huxham, 1993, p. 76; Kaplan, 1998, p. 113; Wouters & Wilderom, 2008, p. 500; chapter 3.3.2). These include pressure to deliver to case studies, i.e. case studies are also 'customers', potential biases due to being compensated for action projects, personal involvement as a participant that can result in potential biases, the intensity of action research as a method and associated demands to the researcher's level of skills, as well as the fact that action research manipulates its own data to some extent. These weaknesses are mitigated by efforts to meet Davison, Martinsons & Kock's (2004) quality criteria (chapter 3.5.2).

Qualitative research relies strongly on quality criteria (chapter 3.5). However, in contrast to other research methods, qualitative research does not come with many explicit standard procedures (Yin, 2014, pp. 19-20, 45-49). For this reason, qualitative research typically implies quite individual approaches for investigating a phenomenon. This study's application of action

research, which is used to collect empirical data and learn from the change process, and case study research, which is used to ensure the scientificity of the conclusions of the investigation, is such a quite individualized approach (cf. Malmi, 2016, pp. 32, 37, 40).

A further general weakness of case study research as a scientific method is the large amount of data and associated complexity in analysis (Eisenhardt, 1989a, p. 547). This weakness is particularly true for this study, which conducts three case studies and triangulates three sources of evidence for all of the practices and themes implied by Ferreira & Otley's (2009) performance management framework. A total of 54 practices and themes are investigated thoroughly. This large amount of data together with the low degree of standard procedures in case study research contribute to the interpretive discretion that I have as the researcher (Yin, 2014, p. 147). Most of the possible measures are used to counteract this interpretive discretion, as outlined in see chapter 3.5. Yet peer reviews and/or investigator triangulation could not be used, which might be considered as a weakness of this study's research strategy.

Finally, this study's results have potential weaknesses and limitations (chapter 4, 5 and 6). Analyses, results and discussion are used to create the concept of Growth Performance Management. I do use this concept in my practical work with growing ventures. In addition, I know about startups, entrepreneurial growth companies, corporations and other consultants, who apply these concepts as well. However, Growth Performance Management is not scientifically investigated. I believe that Growth Performance Management as a theoretically informed and practically useful concept could be well suited for Kaplan's (1998) approach of innovation action research and as an avenue of future research.

7.4. Future research

Performance management in the growth stage. Research should lead to new questions. The quantity of high quality research questions, which result from an investigation, can be considered as a sign of an interesting and relevant study. This study might be just a starting point for upcoming research on performance management in the growth stage. Derived from this study, table 68 suggests research questions, theoretical propositions, literatures as well as methodological approaches for future research on performance management systems in entrepreneurial growth companies.

Research question	Theoretical proposition	Literatures	Methodology
Central research question: <i>How do EGC design and use their PMS?</i>	EGC design and use their PMS to facilitate organizational learning processes and to balance single loop and double loop learning.	Management accounting and control, organizational learning, Ferreira & Otley (2009), Huber (1991), March (1991).	Survey research, Eisenhardt method
Systems vs. packages: <i>How are performance management systems more effective than packages in the growth stage?</i>	Performance management systems facilitate organizational learning better than packages.	Management accounting and control, organizational learning, Brown & Eisenhardt (1997), Collier (2005), Sandelin (2008).	Eisenhardt method
Internal consistency: <i>How do EGC achieve internal consistency in their PMS?</i>	EGC achieve internal consistency by using organizational learning as design principle, which is enforced by learning cultures as modes of control.	Management accounting and control, organizational learning, Grabner & Moers (2013), Sandelin (2008).	Case study research, action research
Sequential adoption: <i>When do ventures adopt what performance management practices?</i>	PMS change (adoption and evolution) along stages of knowledge about business models and growth strategies.	Management accounting and control, organizational learning, life cycle theory, Dávila & Foster (2005, 2007).	Longitudinal case study
Simultaneous evolution: <i>What performance management practices do EGC adopt and/or re-design simultaneously?</i>	EGC adopt and/or re-design performance management practices that are particularly interdependent with respect to organizational learning processes and modes.	Management accounting and control, organizational learning, life cycle theory.	Longitudinal case studies, action research
Practical application: <i>How can Growth Performance Management support EGC in designing and using their PMS for further growth?</i>	Growth Performance Management allows to adopt performance management practices in a purposeful sequence, align practice design with organizational learning and create internally consistent systems and not packages.	Management accounting and control, organizational learning, this study (Engelhardt, 2020, forthcoming :-)	Innovation action research (Kaplan, 1998)
Learning cultures: <i>How do EGC design and use their organizational values systems?</i>	EGC design and use their organizational values systems in order to balance exploration and exploitation.	Management accounting and control, ambidexterity literature.	Survey research
<i>How do EGC design and use business specific growth supporting functions?</i>	EGC design and use business specific growth supporting functions in order to facilitate organizational learning about the business model.	Management accounting and control, organizational design, organizational learning, business model literature.	Case study research, action research
<i>What is a scaling unit and how is it part of entrepreneurial growth strategies?</i>	No proposition; see chapter 4.1.4 on the emergent theme of the scaling unit concept.	Strategic Management, Engelhardt, Gassmann & Möller (2019), Von Krogh & Cusumano (2001).	Case study research, action research
<i>How are key performance measures linked to different stages of knowledge?</i>	As EGC progress through stages of knowledge, financial and especially non-financial KPIs become more specific and linkages are developed in the context of business models and growth strategies.	Management accounting and control, organizational learning, Garvin (1993).	Case study research, longitudinal case study research
<i>How do OKRs contribute to strategy formulation and strategy implementation in EGC?</i>	No proposition; see chapters 4.1.6 and 4.2.6 on the OKR goal setting system.	Engelhardt & Möller (2017), Mintzberg & Waters (1985), Simons (1995).	Case study research, action research

Tab. 68: Future research on performance management in the growth stage

Performance management in general. The investigation of entrepreneurial growth companies also provides avenues for future research in performance management as an emerging new academic field. The following research questions, resulting from respective chapters, might be particularly interesting.

How can Ferreira & Otley's (2009) performance management framework be extended and further theoretically developed? As chapter 5.11 elaborates, theoretically relevant and practically useful developments are possible for Ferreira & Otley's (2009) performance management framework (cf. Collier, 2005; Adler, 2011). A next version could extend the framework, define themes and practices, i.e. constructs to be investigated, and elaborate on a typology of the most relevant design options more clearly. Ten years after Ferreira & Otley (2009) published their well-received framework might be a good opportunity to provide the next version of their framework.

What is the relationship and interaction between design and use? As chapters 2.2.6 and 5.4 outline, the concept of use of performance management practices as well as its relationship to design is not yet well elaborated. This study proposes that design follows use and, therefore, clarity about use brings clarity about design.

What are theoretically generic clusters of multi-directional interdependent performance management practices? This question has not been asked explicitly as per this study's knowledge of the literature, although implicitly such thinking is clearly evident in all management accounting and control theory. As suggested in chapter 5.8, a typology of the most relevant clusters might help with the transition from the predominant reductionist approach to more of a system approach as discussed by Grabner & Moers (2013).

What is the role of non-information-based, physical performance management practices in supporting organizational effectiveness? Chapters 4.1.1, 4.1.3 and 5.12 outline that the office design experiences an interesting increase in appreciation by management practice in recent years (cf. Lee, 2018, 2019). Schein (2008, pp. 25-26) considers the office design as part of organizational culture. This study suggests that non-information-based, physical performance management practices could be an interesting and unconventional opportunity for performance management research.

How can the stages of knowledge framework be further elaborated for the purpose of better understanding the adoption as well as the evolution of performance management system design and use? As analyzed in several chapters (especially 4.2, 5.2 and 5.3), the change of performance management design and use might be dependent on the knowledge about a business. Measurability and thus key performance measures play a significant role. Garvin's (1993) stages of knowledge framework could be extended, defined more specifically and linked to performance management practices.

Argyris states that “the most robust tests of validity are those that can be used to predict about universes that do not, as yet, exist” (cited in Kaplan, 1998, 97). This study proposes empirically testable, predictive and prescriptive statements. I would wish that researchers and practitioners use this research, test it scientifically and practically, and develop its ideas further.

7.5. Concluding remarks

Edith Penrose (1959, p. 1) starts her seminal book “the theory of the growth of the firm” with the following words: “So far as I know, no economist has as yet attempted a general theory of the growth of firms. This seems to me so very strange that I am sure anyone attempting it should indeed watch his (or her) step, for naturally there is always a good reason for what economists do or do not do. Perhaps such a theory is impossible to construct, unnecessary, trivial, or outside the pale of economics proper. I do not know, but I offer this study in the hope that all four possibilities will be rejected.”

Theorizing about growth is not “impossible to construct”. Yet indeed, rapidly growing organizations are both a difficult object of investigation and a particular challenge for management practice. Theorizing about growth is not “unnecessary”. On the contrary: All successful organizations must go through the growth stage in order to provide innovative solutions to problems, increase economic productivity, create meaningful jobs, pay taxes to communities and change societies (hopefully) to the better. Theorizing about growth is all but “trivial”. This study demonstrates the significant amount of different performance management practices and their many interdependencies in a growth context. Theorizing about growth cannot be “outside the pale of economics proper”. Growth managers face all these countless options for performance management system design and use. Growth researchers should support growth managers in making informed, effective management decisions.

50 years after Penrose (1959) published her theory, entrepreneurship researchers Shepherd & Wiklund (2009, p. 107) still conclude: “One important aspect of strategy research relates to firm growth, but theory development in firm growth has been notably slow.” There might be several reasons for their assessment. One reason might be that growth research tends to adopt a rather aggregated perspective. However, if the assumption is true that growth is generated through learning processes on individual and organizational levels, and if learning can and must be managed, then the analysis of individual performance management practices and their effect on learning might help to understand the larger phenomenon of growth. This research project chose this approach of investigating a total of 54 performance management practices and themes within holistic performance management systems, and *then* generalize findings to the larger phenomenon of growth. I offer this study in the hope to contribute to our understanding of how firm growth can be organized by the purposeful design and use of (growth) performance management systems.

Appendix A – methodology

AlphaCo	BetaCo	DeltaCo
Semi-structured interviews Head of Finance, 27.10.2015 Founder & CEO, 28.10.2015	Semi-structured interviews Founder & COO, 06.11.2015 Founder & CEO, 12.11.2015	Semi-structured interviews COO & MD, 26.04.2016 Senior Manager Corporate Dev, 14.07.2016 VP Finance, 15.07.2016
Head of Personnel & Academy, 28.10.2015	Head of New Brand & Bus Dev, 22.12.2015	
Employee Personnel & Academy, 29.10.2015	Head of New Brand & Bus Dev, 26.01.2016 Head of New Brand & Bus Dev, 29.03.2016	
Workshops Founder & CEO, Head of Finance, Head of Knowledge & Quality, 29.10.2015	Workshops	Workshops CEO, CRO and COO, 11.04.2016
		CEO, CRO and COO, 12.05.2016 CEO, CRO and COO, 17.05.2016 CEO, CRO and COO, 25.05.2016
Project interviews Head of IT Infrastructure, 20.09.2015	Project interviews Founder & COO, 18.09.2015	Project interviews Senior Manager Corporate Dev, 11.04.2016 COO & MD, 11.04.2016
Head of Knowledge & Quality, 28.09.2015	Controller, 02.11.2015	Senior Manager Corporate Dev, 12.04.2016 VP Finance, 12.04.2016 Senior Manager Corporate Dev, 13.04.2016 COO & MD, 13.04.2016 Head of Human Resources, 13.04.2016
Team Lead Front Desk, 29.09.2015	Accountant, 02.11.2015	
Office Management, 30.09.2015 Regional Manager (Region East), 01.10.2015 Head of Customer Service, 01.10.2015 Head of Personnel & Academy, 02.10.2015	Junior Buyer, 03.11.2015 Junior Buyer, 05.11.2015 CEO and COO, 22.01.2016 Head of Product Management, 25.01.2016	Head of Client Relations, 19.04.2016 Head of Media Trading, 19.04.2016 Head of Business Operations, 19.04.2016
Medical Assistant, 02.10.2015 Head of Strategic Projects, 05.10.2015 Employee Customer Service, 06.10.2015	Chief Marketing Officer, 26.01.2016 Category Manager, 26.01.2016 Online Marketing Manager, 27.01.2016	Head of Platform Solutions, 20.04.2016
Employee Billing & Invoicing, 06.10.2015	Junior Buyer, 28.01.2016	Head of Business Intelligence, 20.04.2016
Founder & Managing Director, 07.10.2015	Chief Financial Officer, 28.01.2016	Managing Director India, 20.04.2016 Director Publisher Growth, 21.04.2016
Accountant, 07.10.2015 Employee Personnel & Academy, 07.10.2015 Special Projects & Controller, 22.10.2015	Controller, 28.01.2016 Managing Director Private Labels, 28.01.2016 Bus Dev Manager, 01.02.2016 Managing Director Seed Investor, 19.02.2016 Founder & Seed Investor, 19.02.2016 Founder & Investor, 26.11.2016 CEO coaching, 19.02.2016 CEO coaching, 26.02.2016 CEO coaching, 18.03.2016 CEO coaching, 24.03.2016 CEO coaching, 06.05.2016	Head of Programmatic Media, 21.04.2016 Managing Director APAC, 21.04.2016 Head of Yield Mgmt & Anti-Fraud, 22.04.2016 VP Growth, 22.04.2016 Head of Marketing, 22.04.2016 Head of Accounting, 22.04.2016 COO & MD, 22.04.2016 CEO & MD, 22.04.2016 Head of Human Resources, 22.04.2016 Finance Manager, 22.04.2016 VP Finance, 26.04.2016 COO & MD, 26.04.2016 Managing Director USA, 28.04.2016 HR Manager, 28.04.2016 VP Finance, 02.05.2016 CRO & MD, 03.05.2016 VP Product, 10.05.2016 HR Manager, 20.05.2016 Head of Bus Dev Advertisers, 25.05.2016

Tab. 69: Overview of interview partners and interview dates

AlphaCo	BetaCo	DeltaCo
Cash accounting manual	All hands meeting presentation Dec 2015	BI team re-organization
Compensation policy	All hands meeting presentation Jan 2016	Bi-weekly KPI report
Employee handbook	All hands meeting presentation Nov 2015	CEO presentation summer event
Final presentation action project	BetaCo Strategic KPIs System (project presentation)	Company service level agreements
KPI dashboard centers	Brand analysis	Concept KPI Reporting (project presentation)
KPI dashboard customer service	Brand promise and vision	COO performance management presentation
KPI dashboard operations	Company values system	COO performance management presentation
List of roles and responsibilities in diagnostic centers	Conversion rate analysis	COO presentation summer event
Onboarding presentation	Employee list	DeltaCo DL 360 Sales Deck
Organization chart	Employee manual	E-Mail from COO
Performance evaluation tool	Financial business plan	E-Mail from VP Finance
Performance management presentation	Human resources planning	Financial business plan
Policy for roles and responsibilities in diagnostic centers	Human resources strategy presentation	Financial statements
Presentation for AlphaCo Process House	Investor presentation Dec 2015	Growth Cycle Report, May 2016
Sales management presentation	Investor presentation Nov 2015	Gründerszene article
Strategic business plan	Leadership handbook	HR KPI Reporting (May 2016)
	Meeting schedule CEO	HR presentation on leadership and feedback skills
	OKR Presentation	Introduction to team reportings
	Onboarding document	Lead investor presentation summer event
	Online marketing KPI report	Legal Fact Book
	Operations report	Monthly KPI report (April 2016)
	Organization and meeting schedule	Monthly KPI report (March 2016)
	Organizational chart	Onboarding document trading team
	Organizational chart new version	Onboarding manual demand team
	Pitch presentation big retailer	Onboarding manual supply team
	Pitch presentation supplier	Onboarding presentation supply team
	Press article	Organizational chart
	Private label revenue analysis	Overview DeltaCo Culture
	Profit & loss statement	Overview meeting schedule
	Revenue streams analysis	People development scheme presentation
	Tactical roadmap	Präsentation Management Update & Training
	Weekly Management Update report	Recruitment standards presentation
		Sales analysis
		Sales bonus and commission plan
		Spending and transaction policy
		Strategic business plan
		Strategic business plan
		Strategic KPIs workshop
		Talent management presentation
		Team overview internal consulting team
		VentureBeat article

Tab. 70: Overview of collected documents and archival records

Appendix B – analyses and results

B1 Vision and mission

	AlphaCo	BetaCo	DeltaCo
Interviews	"We disrupt the diagnostic imaging industry. We want to become <i>the</i> platform for diagnostic technology." (CEO)	"We want to become market leader in Europe." (CEO, in press article)	"Our vision is to grow the company; focus is on growth." (COO)
Documents	AlphaCo aims at becoming a "global market leader in the development and operation of [...] diagnostic and therapeutic technology platforms [...]." (Strategic business plan)	"Our business vision: becoming the number 1 in health & wellbeing nutrition market." (Brand analysis)	"Our company is the leading independent global data driven mobile marketing platform." (Strategic business plan)
Observations	AlphaCo's vision provides direction and is a reference point for strategic decisions. It is used to bond the team. The vision is reflected in revenue growth and number of diagnostic centers.	BetaCo uses its vision strongly to provide direction, create motivation and guide strategy. It is used in recruiting efforts. The vision is represented by revenue and number of customers.	DeltaCo's growth vision is very present in the organization. It provides direction and motivation. Revenue and number of app installs are used to demonstrate progress towards the vision.

Tab. 71: Data triangulation for vision statements

	AlphaCo	BetaCo	DeltaCo
Interviews	"Our slogan might not be good enough for transmitting the mission and overarching purpose to employees; currently we have a strong tech focus, but the 'why' is missing." (Head of Personnel & Academy)	"Our mission or rather product vision is to be 'your expert for real vitality'." (COO)	"Vision and mission are not separated so far and not clearly defined, which we really need to do to learn about the general direction." (CEO)
Documents	"AlphaCo - a disruptive innovator in the operation of diagnostic centers around the globe." (Strategic business plan)	"Let's get real. To us real vitality is more than the absence of illness. It's a holistic state of wellbeing. It's as much about a sound body as it is about a sound mind. You can't fake vitality. Not in the long run anyways. And this realness at the heart of vitality is what we stand for. What we believe in. What we want to bring to the world." (Brand analysis)	DeltaCo's mission is to "fuel our customers' growth by connecting their products to the right audience globally through technology, data and services." (Strategic business plan)
Observations	Founders are very motivated by their mission, but they agree that AlphaCo's mission needs to become clearer and more emotional to motivate employees.	The vision is stronger than the mission. Founders focus on the vision, but recognize the importance of the mission for designing culture when growing.	DeltaCo's culture is more shaped by its growth vision than by its mission. The CEO aims at improving on DeltaCo's mission statement.

Tab. 72: Data triangulation for mission statements

	AlphaCo	BetaCo	DeltaCo
Interviews	"Further development of core values is needed to influence the behavior of our employees." (Head of Personnel & Academy)	"Startup spirit is much about learning fast." (COO)	"Team and culture are the most important parts of a strong company DNA." (Lead investor)
Documents	<p>"AlphaCo's goal is to change diagnostic imaging sustainably and disruptively. Using process and technology innovations AlphaCo is able to offer diagnostic imaging also in countries, in which it is until today almost impossible to build and operate diagnostic centers. In order to hold and enhance our innovation leadership the following basic attitudes are required from our employees.</p> <ol style="list-style-type: none"> 1) To maintain the entrepreneurial spirit, show drive for change, constantly question the status quo and suggest ways for solutions and improvements. 2) To tackle challenges with an open mindset, curiosity and fun at work. 3) To ensure peak performance in order to achieve sustainable and disruptive changes in the market. 4) To find and prioritize opportunities and solutions with a results-oriented mindset and not to argue with risks or problems; we do not accept statements such as 'this is difficult or impossible' or 'this cannot work'." <p>"We support a culture of learning." (Onboarding presentation)</p>	<p>"Our five values: Commitment - we burn for team success. Beat the average - we want to improve every day. Fact-based acting - we make decisions based on facts and data. Solution orientation - we think don't think problems, we think solutions. Customer happiness - we focus on the customer." (BetaCo values system)</p>	<p>"Passion for achievement: We love the feeling of accomplishment – we move fast, every milestone counts and we don't rest until we are satisfied. Pride in ownership: We act with integrity, take responsibility for the decisions we make and follow our commitments through to the end. Appreciation for the team: We enjoy being part of one shared adventure – we value each team member's uniqueness and contribution. Together we are a strong team at work and on the playground. Drive for personal growth: We create opportunities – we are driven by our curiosity and build an environment where we can fully unleash our talent. Acceleration through agility: We follow agile principles, are pragmatic and embrace a customer-oriented and responsive working styles. Progress through innovation: We constantly redefine our products, services and processes to add value to the ecosystem, our partners and our company. " (DeltaCo values system)</p>
Observations	Values are conceptualized as an input factor for achieving the vision. Values center on learning and progress. Behavioral standards can be part of values systems.	The COO links startup spirit directly with fast learning. Values express how organizational participants should learn.	Values are lived and particularly used in evaluating and rewarding performance. All of the six values outline expected behavior for achievement and learning.

Tab. 73: Data triangulation for organizational values systems

	AlphaCo	BetaCo	DeltaCo
Interviews	"All three elements, vision, mission and objectives, need to be simple. The goal of the OGSM 2016 Workshop Series is to create messages in a document that every employee can understand and is 'touched' by the message. This is with the clear focus on learning of individual employees but also to facilitate a bottom-up dialog with the founders about the business." (Head of Personnel & Academy)	"It is hard to onboard new 2nd level managers. Technically we as the founders should spend at least a whole month in daily interactions with new managers to bring them up to speed and teach them about the BetaCo culture, how we founders tick, what the business is like, what their daily job is... We don't do that enough, we don't have time." (CEO)	"Despite the significant size of DeltaCo, I try to meet and talk to every new employee in person. For instance, recently, I invited a couple of new employees to dinner and we spend a really nice evening talking about them and also about DeltaCo." (CEO)
Documents	Cultural education starts with recruiting process already. Onboarding process is detailed with clear agenda and introductions done by all parts of the organization. Personal conversations with founders. (Onboarding presentation, no quote, but observation)	"The responsibility of team leaders is: to understand BetaCo's vision, mission and objectives. To convey vision, mission and objectives into all teams of the organization. To report about the status of target achievement." (Weekly Management Update report)	"Values are one of the most important things - we should measure performance based on this. But, then we should hire people that live up to those values - so that it is easier to have people perform on those. We incorporate our values into our interview process." (Recruitment standards)
Observations	AlphaCo culturally educates particularly when employees start working. Organizational values are the main reference point. Main practice is the direct interactions with founders.	BetaCo uses extensive social events, all-hands meetings, veteran stories and direct contact with founders. Founders' believes and formal organizational values provide direction.	DeltaCo focuses on the selection and socialization phases to manage culture. The COO considers culture as a performance management practice.

Tab. 74: Data triangulation for cultural education process

B2 Key success factors

	AlphaCo	BetaCo	DeltaCo
Interviews	<p>"Our key success factors are threefold. We need to further build up the organization and recruit the right people. Second, our IT and process knowledge is the basis for scaling and for the internationalization strategy. Third, we need more strategic sales cooperations [...]. We aim at allocating resources strategically on these three areas." (CEO)</p> <p>"We got to focus on teaching and learning to stay on our growth path." (Head of Finance)</p> <p>"The CEO is repeating the key success factors very often in informal ways." (Employee Personnel & Academy)</p>	<p>"We need to maintain the trust of investors and achieve the call option of our strategic investor in June 2016 to sustain funding. Both key success factors are achieved by continuously growing the topline, that is mainly gross revenue, and then communicate it well to our investors. Growing and growth strategy is all about team, team, team, team, team. We need to recruit great people and build the org and become more knowledgeable in processes and systems. Our business is a rather low margin business, so to improve profitability, we have to establish our private labels, our BetaCo Brands, online and offline. This also adds a distinct unique selling proposition to BetaCo. [...]." (CEO)</p>	<p>"Currently and for the next 18 months, sales and operations are key and less tech and product. Tech is reliable basis. At some point the relationship switches and tech will be more important than sales & ops, for this reason DeltaCo works on two new products." (CEO)</p> <p>"Every business model where you're not aligned with your customers, you'll have some sort of problem over the long run." (CEO)</p> <p>"We need strong recruiting and onboarding processes and strong culture, find high profile employees and delegate to them a lot of responsibility." (COO)</p>
Documents	<p>"Technological capabilities, healthcare knowledge, execution speed and strategic cooperation are key differentiators to all other concepts and companies on the market." (Strategic business plan)</p>	<p>"Today's agenda: revenue & growth, relaunch & tv, private labels, scaling the team for BetaCo and BetaCo Brands, cooperation with fitness provider." (Investor presentation)</p>	<p>"Accelerating momentum driving top line growth and profitability." "Growing engineering teams in Berlin and in our international location and developing existing talent." "Enhance tech platform." (Strategic business plan)</p>
Observations	<p>Key success factors relate to: growing revenues, maintaining profitability, strategic sales and marketing, growing the organization, professionalizing the team, improving the technology platform, and process knowledge management.</p>	<p>Key success factors include: maintaining good investor relations, achieving the series C, strong revenue growth, growing and professionalizing the organization, and re-launching the website.</p>	<p>Managing directors are aligned on the following key success factors: revenue growth while maintaining a defined level of profitability, organizational growth, professionalizing the workforce and incremental product development. CEO emphasizes new product development.</p>
Communication of key success factors	<p>Communication through strategic business plan, strategic management process, selection of KPIs, target setting process, and in informal interaction with founders.</p>	<p>Communication through strategic business plan, selection of KPIs, meetings and informal interaction. A gap in insights between founders and employees is observed.</p>	<p>Communication through strategic business plan, strategic management process, target setting process, selection of KPIs, and informal interactions.</p>

Tab. 75: Data Triangulation for key success factors

B3 Organization structure

	AlphaCo	BetaCo	DeltaCo
Interviews	<p>“The decentral locations are currently managed as cost centers, but are supposed to be managed as profit centers in the course of 2016. We intendedly do not commit yet to collect learnings about interfaces, infrastructure and processes.” (CEO)</p> <p>“A clear distinction must be made between running operations and the building up of new locations.” (Head of Special Projects)</p>	<p>“The org chart is not really clear. The organization probably will become clear as soon as our strategic investor will use its call option in June 2016. There is strong influence by our strategic investor on the organizational setup. I’m not sure whether this is good. We learn a lot about the business every day and know the way of organizing better than the investor.” (Head of New Brand & Business Development)</p>	<p>“We try to maintain a really flat hierarchy. The organization is similar to our value chain, teams are structured along value chain and support functions.” (Senior Manager Corporate Development)</p>
Documents	<p>The organization is functional in the headquarters and each function is headed by one of the three founders. Decentral locations are included in operations and report to the CEO. (Description of the organization chart, no quote)</p>	<p>"We have set up two cross-functional 'TAG TEAMS' in order to face the conversion rate challenge." (All hands meeting presentation Jan 2016)</p> <p>The organization is set up in functions. (Organization chart, no quote)</p>	<p>The organization structure is functional in the Berlin headquarters, with decentral sales offices in international cities. (Description investor presentation, no quote)</p>
Observations	<p>AlphaCo is structured in a central headquarters that is set up in functions and focuses on innovation, and decentral centers that create the value for all customer groups and focus on execution. Decentral locations are cost centers to not hinder learning. The three founders hold most of the authority, but start to delegate.</p>	<p>BetaCo does not have decentral organizational units. All functions are centralized in the headquarters. Functions focus mainly on execution, with innovation being done by founders mainly. The four founders hold most of the authority, but start to delegate to middle managers.</p>	<p>DeltaCo's headquarters is structured in functions and focuses on innovation. DeltaCo has decentralized international sales offices. They are currently revenue centers to not inhibit learning. The three managing directors hold final decision authority, yet much business authority is delegated to international offices heads.</p>

Tab. 76: Data triangulation for functional organizational design

	AlphaCo	BetaCo	DeltaCo
Interviews	"Our structure is strongly concentrated on founders and not so much on value chain or on functional requirements. As we grow this results in gaps and breaks in the organizational setup." (Head of Finance)	"In the end of the day, it all comes down to us as the founders. We take the shots; we bear the risks. If we lose drive, the company drains of energy." (CEO)	"We need to maintain stability in our management team due to complexity of our market." (CEO)
Documents	"AlphaCo's founders are driven to change the rules of the game and build a profitable company: entrepreneurial spirit, healthcare industry experience and synergetic competences." (Strategic business plan)	"BetaCo's team and network bring in experience and results orientation." (Pitch presentation to big retailer)	No fitting quote available from documents.
Observations	The three founders have complementary competences and backgrounds as well as entrepreneurial experience. Roles relate to three parts of the business: marketing and sales, operations and technology platform. The CEO is responsible for support functions. Key success factors, org. design and founders' roles are 'symmetric'.	The four founders have complementary capabilities and backgrounds. Two founders are serial entrepreneurs. Roles relate to three org. parts: marketing and brand, operations, and online platform. Responsibility for support functions is shared between the CEO and COO. Key success factors, org. design and founders' roles correspond to each other.	The three founders have a business background, yet still different competences. Founders are serial entrepreneurs. Roles relate to: business development, operations and product development & technology. The COO is exclusively responsible for support functions. Key success factors, org. design and founders' roles relate to each other clearly.

Tab. 77: Data triangulation for founders' roles and responsibilities

	AlphaCo	BetaCo	DeltaCo
Interviews	"We need a middle management in the headquarters, meaning heads for finance, human resources and knowledge & quality, as we as the founders have too many direct reports and cannot give feedback." (CEO)	"We are building the middle management with new knowledge from the outside so that founders and current employees can learn themselves." (COO)	"What is the #1 resource needed to build a successful company? PEOPLE!" (CEO)
Documents	"Key staff with years of experience in renowned management consulting and investment banking companies." (Strategic business plan)	"We doubled the BetaCo core team: double management capacity comes with know-how and speed for 2016." (Investor presentation)	"Global team managed by dynamic and experienced advertising and technology entrepreneurs, plus 12 further MD & VP level executives who are recognized leaders in technology and business." (Strategic business plan)
Observations	Establishing the middle management is seen as a critical next step. Most middle managers are hired from external. Middle managers are expected to think strategically and execute well.	BetaCo considers the middle management as a key success factor. Founders use the series B to attract senior managers. First senior hire is the CFO. BetaCo searches for middle managers who can balance strategy and execution.	DeltaCo's middle management is complete. Profiles are similar: sufficient experience but still need to make a career. Most managers are in their 30s. Managers are expected to be good operators and creators of new ideas.

Tab. 78: Data triangulation for middle management roles and responsibilities

	AlphaCo	BetaCo	DeltaCo
Interviews	"Our business is not up for failure, so we try to prescribe many procedures in our decentral locations. In general, we use policies a lot. Founders try to implement many insights by using policies. Knowledge & Quality takes the lead here." (Head of Finance)	"In the past we were always against rules to avoid getting slow. Recently I feel we need more rules to avoid wasting time. We can use rules to decide on standard matters. If we use rules the right way, we can increase efficiency and focus on strategic topics." (CEO)	"In growth phases management needs clear and easy rule set to act and move very quickly." (VP Finance) "I prefer trust over rules to speed up things. I have not gotten disappointed so far." (COO)
Documents	"Our solid foundation for scaling the business: process driven organization – the company turns implicit into explicit knowledge and has a proven tool set for all levels of the AlphaCo Process House." (Organizational process chart)	"The responsibility of team leaders is: to understand BetaCo's vision, mission and objectives. To convey vision, mission and objectives into all teams of the organization. To report about the status of target achievement." (Weekly management report)	"Our seven rules for giving feedback." (HR presentation on leadership skills)
Observations	AlphaCo extensively uses rules, procedures and policies. General, sometimes informal rules in the headquarters. Intense use of carefully designed formal policies in diagnostic centers. Policies are audited by the "Department for Knowledge & Quality". Use is to ensure efficiency, to make knowledge explicit and avoid coordination problems.	BetaCo uses almost no policies, which corresponds to BetaCo somewhat still searching for their final business. Founders consider lack of rules as problem to growth and intends to use more rules. Design is to be rather flexible and open. Use is to make learnings explicit and increase standardization in core processes.	DeltaCo is careful to not design bureaucratic rules. At the same time, they see that more rules are needed to support growth. Clear idea of directional yet flexible rules, procedures and policies. Prefer rules over classical policies. Use is to balance local adaptability, especially in international sales offices, with strategic focus.

Tab. 79: Data triangulation for rules, procedures and policies

	AlphaCo	BetaCo	DeltaCo
Key performance measures	Roles and responsibilities substitute for using key performance measures for some time. The "AlphaCo Process House" determines the selection of key performance dimensions to be covered by the organization.	The improved understanding of BetaCo's business model and its key performance indicators in the strategic performance measurement system ("BetaCo Strategic KPI System") leads to the re-structuring of the organization.	The action project's new strategic performance measurement system can be set up on the existing organization. Organization structure and performance measurement system ("DeltaCo Growth Cycle") are aligned well.
Target setting and performance evaluation	The middle management enables and requires adopting formalized processes for target setting and performance evaluation. Support functions administrate the process.	Founders need to delegate more to middle managers, but they also need to lead middle managers professionally and need to remain in control. The OKR goal setting system is introduced to support the process.	The fully evolved functionally set-up middle management both allows and requires that the COO introduces the OKR goal setting system and re-designs the performance review process.
Target setting and performance evaluation	The need to maintain the loop of targets, activity and feedback can explain the need to hire a middle management.	The need to maintain the learning loop explains the need to establish a middle management, explains the formalized design of performance reviews as well as the adoption of the OKR goal setting system.	The fully evolved functionally set-up middle management both allows and requires that the COO introduces the OKR goal setting system and re-designs the performance review process.
Reward systems	Generally, AlphaCo has a "no frills approach" to rewarding, yet decentral organizational units, the diagnostic centers, use financial rewards.	Introduction of employee stock option plans to incentivize middle management; more formal trainings as rewards as the organization grows.	Decentral organizational units, the international sales offices, use bonuses strongly; the COO considers abandoning bonuses for headquarter employees.
Information flows, systems and networks	The functional organization and the hiring of the middle management enable and require horizontal information flows. Founders still maintain vertical information flows to learn about the business and keep control. Information systems are introduced.	BetaCo's founders intend to establish horizontal information flows by empowering their middle managers. BetaCo's company meeting schedule illustrates this change. Several information systems are introduced. Support functions facilitate information flows.	DeltaCo already uses both horizontal and vertical information flows in line with the organization structure. The general objective is to make clearer distinction of what information should flow vertically to CEO, CRO and COO, and horizontal along the value chain.
Use of practices	Functional organizational design and middle management require to formalize practices and use them more diagnostically, while maintaining interactive use.	Functional organizational design and middle management require to formalize practices and use them more diagnostically, while maintaining interactive use.	Functional organizational design and middle management require to formalize practices and use them more diagnostically, while maintaining interactive use.

Tab. 80: Impact of organization structure on the performance management system at case studies

	AlphaCo	BetaCo	DeltaCo
Structure follows strategy	The growth strategy requires a functional organization, a middle management as well as a central headquarters with decentralized diagnostic centers. Growth supporting functions are introduced and/or professionalized.	The growth strategy leads to a clearly functional organization and the introduction of a middle management; founders use a "target org chart". Growth supporting functions are introduced and/or professionalized.	The growth strategy leads to the opening of further decentralized international sales offices, while the headquarters takes over all other organizational functions. Growth supporting functions are introduced and/or professionalized.
Strategy formulation follows structure	To leverage the knowledge of the middle management and to facilitate horizontal information flows, the "OGSM" strategic management process is introduced. The growth strategy is crafted in dependence of organizational resources.	The strategic management process becomes more participative. Founders intend to involve middle management in "strategy offsites". The growth strategy is developed dependent on organizational resources.	The strategic management process is already participative to leverage specialized knowledge and facilitate vertical and horizontal information flows.
Strategy implementation follows structure	Founders need to monitor strategy implementation by their middle management. For this reason, they introduce the "AlphaCo Process House" among further performance management practices.	As BetaCo's founders need to control strategy implementation by the middle management, they develop the "BetaCo Strategic KPI System", introduce OKRs and re-design their performance evaluation process.	At DeltaCo strategy and structure seem to be well aligned. The "DeltaCo Growth Cycle" is developed to control strategy implementation by DeltaCo's functional heads. Performance management is re-designed to improve strategy implementation.

Tab. 81: Interactions between structure and strategy at case studies

	AlphaCo	BetaCo	DeltaCo
Interviews	<p>"The strategic focus of the Personnel & Academy team is on building up a 'learning agility'." (Head of Personnel & Academy)</p> <p>"We have a so called 70-20-10 learning approach: learning is 70% through challenge, 20% through role models, and 10% using purposeful trainings." (Head of Personnel & Academy)</p>	<p>"Onboarding should start already in the recruiting phase. Candidates should learn everything important about BetaCo already when they go through the evaluation by founders, their future managers and human resources. We will do a standardized pitch on why a candidate should work: what BetaCo's vision, business model, values, team and investors are." (Managing director of BetaCo's seed investor)</p>	<p>"What is the #1 resource needed to build a successful company? PEOPLE!" (CEO)</p> <p>"My main job is to hire and keep good employees for business development and account management on demand side." (Managing Director for Americas)</p> <p>"We need strong recruiting and onboarding processes and strong culture, find high profile employees and delegate to them a lot of responsibility." (COO)</p>
Documents	<p>"The constant and structured development and training of our employees as well as a transparent and understandable compensation is very important to us." (Employee handbook)</p>	<p>"Our HR vision: To be HR business partner for managing directors and 2nd level management. To be consultant and coach to employees. To support achieving our company objectives. To hunt for talent. To be coaches for individual development of our employees." (Human resources strategy presentation)</p>	<p>"Hiring is the single most important thing - only when hiring the right people, we can grow and don't need to spend money on trainings." "We develop people both professionally and personally, while strengthening competences needed for growing our organization successfully on all levels." (Recruitment standards)</p>
Observations	<p>Teaching and learning are institutionalized by the "Personnel & Academy" team. 3% of the total headcount work in Personnel & Academy. Recruiting, onboarding, socialization and employee development are already quite formalized. A core responsibility is to create a learning organization with "learning agility".</p>	<p>As a strategic initiative after the series B, the human resources team is taken in-house from the seed investor. BetaCo's human resources team is conceptualized as a business partner. Trainings are bundled under "BetaCo Academies".</p>	<p>Employee selection and development are conceptually linked to business growth. Trainings such as the "International Talent Program" and "Knowledge Sessions" focus on organizational learning. "Continual Learning" is one of the core competences used to evaluate employees.</p>

Tab. 82: Data triangulation for the human resources function as growth supporting function

B4 Strategies and plans

	AlphaCo	BetaCo	DeltaCo
Interviews	"We follow a clear growth strategy, domestically as well as internationally." (Head of Finance)	Our core strategy is a growth strategy." (COO)	"The question is what drives value. We would always go for revenue growth over profitability." (COO)
Documents	"AlphaCo executes on a clear growth strategy in Germany and internationally." (Employee handbook)	"There is strong growth potential by internationalization in EU and non-EU markets." (Onboarding presentation)	"Our company is best positioned to capitalize on the industry's explosive growth." (Strategic business plan)
Observations	AlphaCo follows a clear growth strategy. Strategic focus is on new domestic diagnostic centers; the international expansion is rather a future vision than a strategy. All stakeholders are aligned behind the growth strategy. AlphaCo's growth allows to attract and retain talent.	BetaCo adopts a rapid growth strategy, which includes adding new products, tapping into new customer groups and internationalization. Stakeholder are aligned; especially the strategic investor demands growth. Employees are selected for to fit to the growth mindset.	DeltaCo grows fast and continues with its growth strategy. All stakeholders are aligned behind the growth path. Short-term growth comes from existing and new customers, and entry into new international markets. Long-term growth shall be generated by new technological products.
Strategy type classification	Growth strategy Prospector strategy Gradual build strategy Build strategy	Growth strategy Prospector strategy Aggressive build strategy Build strategy	Growth strategy Prospector strategy Aggressive build strategy Build strategy

Tab. 83: Data triangulation for strategy type classification

	AlphaCo	BetaCo	DeltaCo
Perspective	Intensely used.	Intensely used.	Intensely used.
Unique way of perceiving the world	Disruptive innovators with a focus on efficiency. Strong and coherent perspective. Vision and mission are informally strong and are in the process of being formalized.	Entrepreneurs with a focus on growth. Perspective is strong and consistent in the organization. Vision and mission are strong and formalized.	Entrepreneurs and technological leaders. Perspective is strong and consistent in the organization. Vision and mission are strong, formalized, but formal statements need to be improved.
Pattern	Intensely used.	Intensely used.	Intensely used.
Consistency in actual behavior	Behavioral pattern is consistent and focused on process innovation and technology. Pattern is formalized through entrepreneurial and efficiency values. Patterns are also ensured by consistent selection and socialization of organizational members. Rules, procedures and policies are used to control consistent operative behavior.	Behavioral pattern is consistent and focused on entrepreneurship and growth. Pattern is formalized through values framing customer orientation and growth mindset. Consistent founder behavior ensures coherent organizational behavior. Use of rules is supposed to increase to control patterns.	Behavioral pattern is consistent and focused on entrepreneurship and technology. Pattern is formalized through results-, progress- and innovation-oriented values. Selection of culturally fitting employees as well as their socialization creates consistent patterns. DeltaCo intends to increase its use of rules.
Position	Intensely used and viable.	Used, but viability to be determined.	Intensely used and viable.
Economic product-market domain	Industry position is fully established. The product-market combination is economically viable (profitable). Value propositions to all customer groups are clear.	Product-market fit is partly clear and partly work-in-progress as position is not economically viable yet (not profitable yet). Value propositions and brand are sound but are continuously refined. Germany is the main market.	Position is fully established. Product-market fit is economically viable (profitable). Value propositions to all customer groups are clear. DeltaCo operates in international markets.
Plan	Increasingly used.	Increasingly used, with struggle.	Used and improved.
intended course of action	AlphaCo intends planning its actions on a strategic level. The strategic management process is to be formalized. KPIs are planned to be introduced ("AlphaCo Process House"). More formal target setting and performance evaluation is intended.	Founders struggle with planning strategically. A financial business plan is used. Action plans are very detailed and frequently changed. BetaCo improves the strategic management process. They intend to use more strategic performance measurement (action project) and introduces OKRs for target setting.	The strategic management process is established and constantly improved. DeltaCo improves its strategic performance measurement system (action project). Introduction of OKRs target setting system and overhaul of performance review process. The financial business plan is detailed and used.

Tab. 84: Concepts of strategy and associated practices in case studies

	AlphaCo	BetaCo	DeltaCo
Components	Vision & mission Market analysis Business model Value propositions Current status & achievements Competitor analysis Strategy and strat. objectives Financial outcomes Financial planning Technology Founders' experience Company history	Vision & mission Market opportunity & trends Business model Value propositions Status quo & achievements Competitor analysis Strategy and strat. objectives Financial outcomes Financial planning Online platform relaunch Executive team & organization Company history	Vision & vision Market opportunity Business descriptions Value propositions Past achievements Competitor analysis Strategy and strat. objectives Financial outcomes Financial planning Technology and R&D Executive team & org. chart Company history
	Product offerings	Marketing approach Strategic cooperations	Customer analysis
Responsible	Founder team & Head of Finance	CEO and COO	CEO, CRO, COO
Timing of preparation	Ad-hoc and events triggered. Intention to prepare more regularly	Ad-hoc and events triggered. Intention to prepare more regularly	Quite regular preparation, but sometimes also triggered by events
Target group	Founders, middle management, employees, investors, customers	Founders, middle management, employees, investors, suppliers	Founders, middle management, employees, investors
Planning horizon	Topic dependent: quarterly planning up to 5 years	Topic dependent: monthly planning up to 4 years	Topic dependent: monthly planning up to 3 years
Source	Strategic business plan	Investor presentation Dec 2015, Onboarding presentation	Strategic business plan

Tab. 85: Strategic business plans at case studies

	AlphaCo	BetaCo	DeltaCo
Focus	Revenue, costs and cash flow	Revenue, costs and cash flow	Revenue, costs and cash flow
P&L	Revenue (revenue breakdown)	Revenue (revenue breakdown)	Gross and net revenue (revenue breakdown)
planning	Cost of goods sold	Cost of goods sold	Cost of goods sold
KPIs	Gross profit	Contribution margin 1	Gross profit and GP margin
	Personnel costs	Contribution margin 2	Gross profit and GP margin
	OPEX (HQ vs. diagnostic centers)	Personnel expenses	Personnel costs
	EBITDA and EBITDA margin	IT expenses	Marketing costs
	EBIT and EBIT margin	Expenses for brand building	SG&A and SG&A margin
	Net income and NI margin	EBITDA and EBITDA margin	EBITDA and EBITDA margin
		Net income	Cost structure
Balance sheet	No balance sheet KPIs	Inventory	No balance sheet KPIs
planning		Accounts receivable	
KPIs		Cash balance	
		Accounts payable	
		Debt	
		Working capital	
Cash flow	Free cash flow	Operating cash flow	Operating cash flow
planning	Equity funding	Investing cash flow	Capital expenditures
KPIs	Debt funding	Financing cash flow	Cash flow from financing activities
	Liquidity	Net cash flow	
	Investments	Cash balances	
Lowest	# diagnostic centers	# orders per customer group	# customers
planning	# examinations	average basket size	average budget per customer
item			
Responsible	CEO and Head of Finance	COO	COO and VP Finance
Timing of	Assumption: monthly preparation	Regular monthly preparation	Regular monthly preparation
preparation			
Target	Founders, Head of Finance, investors	Founders and investors, especially the strategic investor	Executive team
group			
Planning	Monthly plan over 5 years	Monthly plan over 4 years	Monthly plan over 1-3 years
horizon			
Source	Strategic business plan includes the financial business plan	Financial business plan	Financial business plan

Tab. 86: Financial business plans at case studies

	Strategic business plan	Financial business plan
Components	Key aspects about vision, business, environment, strategy, technology and organization	Past and projected financials with a focus on revenue, costs and liquidity
Target groups	All stakeholders: founders, executives, middle managers, employees, investors, customers, suppliers	Decision makers: founders, executives, investors
Format	PowerPoint slides	Excel sheets
Purpose	Learning & communication: documentation of learnings about the business and its environment; entrepreneurial legitimacy; visionary story-telling and mental models for the future	Financial leadership: measurement of actual financial performance; planning and projection of min. necessary and max. possible future financial performance; strong interdependency with strategy and strategic objectives
Timing of	Ad-hoc, rather events triggered, but supposed to get more regular	Regular monthly preparation
preparation		
Developed in	Strategic management process	Strategic management process; performance measurement and target setting process

Tab. 87: Strategic business plan versus financial business plan

	AlphaCo	BetaCo	DeltaCo
Interviews	"We will do a workshop series named 'OGSM 2016' to make founders' thoughts on vision, mission, objectives, core values, strategy and organization explicit to everybody. It is a clear process: first we develop the mission, then the vision and then the objectives." (Head of Personnel & Academy)	"Objectives till June 2016 are quite clear because of our strategic investor's call option. Still, we as the 2nd level management are getting more and more involved in developing the growth strategy. I think that's because we are in the details of our departments, we know and improve our daily business, and founders are not so much anymore." (Head of New Brand & Business Development)	"We do strategy meetings with top management only to set broad direction; then go on with communication and discussion with mid-management especially on mission statement and product vision. Then we all continue with workshops style strategy events to elaborate the strategy for the next 5 years, not systematically but we try to use standardized communication at different occasions." (COO)
Observations	Strategic management changes from a rather ad-hoc, events-based, adaptive, top-down process, to a formalized, participative process, the quarterly "OGSM 2016". Strategic planning is distinguished from strategy implementation. The strategic management process involves the middle management. Founders place more weight on defining objectives. "OGSM 2016" appears to also be used for team building purposes.	The strategic management process evolves from an informal, ad-hoc, events-based, emergent, founder-led process to a more deliberate process. The process is still rather triggered by events/investors (e.g. "Investors Jour Fixe"), but founders aim at a more regular process in the context of "strategy offsites". Founders are clear on objectives, but less on strategy. Strategy formulation is founders' domain, but middle managers and selected key employees participate.	Regular bi-annual strategic management process ("DeltaCo Strategy Week"). Strategy formulation is clearly distinguished from implementation. CEO, CRO and COO suggest the general direction and set general objectives. The formulation process then strongly involves the middle management and their knowledge and decentral information. The process involves social activities for team building.

Tab. 88: Data triangulation for strategic management processes

	AlphaCo	BetaCo	DeltaCo
Strategic-singular processes	Strategic partnerships to suppliers, determination of locations for new diagnostic centers, fundraising.	Development (not sale) of private label products, fundraising, strategic partnerships.	Acquisitions and founding of tech startups, strategic partnerships to large customers and partners, "DeltaCo Labs" to some extent.
Strategic-recurring processes	Sales to doctors and radiologists, marketing to patients, product development and IT development for tech platform, i.e. "AlphaCo Information System". Recruiting, trainings, knowledge management by "Department of Knowledge & Quality". Scaling unit: process of building and operating new diagnostic centers by "Department for Strategic Projects."	Online marketing to customers, sale of private label products, product management, purchasing and category management, front-end and back-end development. Recruiting, business reporting processes. Scaling unit: not determined yet.	Sales to advertisers, sales to partners, marketing support to sales, yield management, technology and product development. Recruiting and onboarding, trainings, business reporting processes. Scaling unit: process of opening up new offices.
Operational processes	Examinations in diagnostic centers, "Customer Services" to doctors and radiologists.	"Customer Support", "Logistics", "IT Support", accounting processes in "Finance".	"Customer Service", accounting processes in "Finance".

Tab. 89: Three types of organizational processes at case studies

	AlphaCo	BetaCo	DeltaCo
Interviews	"Our objectives are growth through new centers, building up the organization, automation of key processes, growing revenue and company valuation." (Head of Finance)	"We always think about results first. Goals must be clear. How to get there can be changed on the way." (COO)	"Our growth strategy builds on new products, new markets and new customers and increasing business with existing customers." (COO)
Documents	"Our growth strategy: x own operated centers, x international centers, with in total x imaging devices, strategic sales co-operation with global acting partners, high total profitability, high potential for additional upsides by complementary business models." (Strategic business plan) "More than x imaging devices and more than x million exams by 2019." (Strategic business plan)	"Improve user experience and conversion rate. Marketing focus on search engine optimization, display, social media, affiliate. Start new tv campaign. Increase online and offline sales for BetaCo Brands. Automation of reporting. Setup finance and accounting systems. Increase of assortment in natural, healthy and sports nutrition. Internationalization in marketplaces. Further integration of our BetaCo platform with fitness programs from other portfolio companies of our strategic investor." (All hands presentation)	"Well-defined path to deliver x of gross revenues by 2018." (Strategic business plan) "Well-defined growth strategy to future-proof the business: enhance tech platform, expand and diversify client base globally, drive greater economies of scale, increase reach and relevancy." (Strategic business plan)
Observations	Financial: increase company valuation by revenue growth while maintaining profitability. Customer: growth in diagnostic centers, in imaging devices and exams. Supplier: increase partnerships with strategic suppliers. Organization: growth in headcount, recruitment of middle management, professionalizing the team, standardization of processes. Time horizon is about 3 years.	Financial: increase company valuation by revenue growth while maintaining target level of (negative) EBITDA. Customer: improve user experience, conversion rate, online marketing channel focus, tv campaign, internationalization in marketplaces. Products: development private brands, increase assortment. Investor: achieve series C, lock-in through brand integrations. Organization: growth in headcount and middle management, standardization of processes, introduction of systems. Time horizon is about 1 year.	Financial: increase company valuation by revenue growth, willing to decrease profitability. Customer: retain customers, diversify customer base in existing markets, further internationalization i.e. opening up new international sales offices. Product: develop new tech solution. Organization: growth in headcount, professionalizing the organization with a special focus on performance management. Time horizon is about 2 years.

Tab. 90: Data triangulation for strategic objectives

B5 Key performance measures

	AlphaCo	BetaCo	DeltaCo
Interviews	"We currently do a big project with a business analyst on developing of KPIs in the framework of the so called AlphaCo Process House." (CEO)	"I'm drowning in meetings. We got to start managing more by KPIs. In particular, middle management got to take on more responsibility and manage their own KPIs. We got to get away from meetings and invest more into our KPI system." (CEO)	"I look mainly at gross revenue, net revenue, month-to-date and vs. target, and the monthly business reports of the subsidiaries, and the revenue and margin of [our newest product brought to the market]." (CEO)
Documents	"AlphaCo's 'diagnostic imaging as a service' - highly efficient operated Diagnostic Centers as technology platforms for multiple customers with high service orientation. Key facts of AlphaCo concept: mean utilization up to x exams p.a. (plus x%); average patients per hour: x (plus x%); cost reduction: up to x%." "Growth strategy: x own operated centers, x franchised centers with in total x+ devices until 2019 [...]." "More than x% growth in the utilization of imaging devices is possible via the AlphaCo business model." (Strategic business plan)	"Last year in numbers: x million in gross revenue, x thousand packages sent, x thousand different customers served, x million sessions at x million visits." "Product management team: focus on optimization of conversion rate!" "We have set up two cross-functional 'TAG TEAMS' in order to tackle the conversion rate challenge." (All hands meeting presentation Jan 2016)	"Explosive growth at >x% y-o-y, [...], reaching €x mn gross revenue; already profitable with €x mn core normalized cash EBITDA; [...] diversified client base [...], representing over x apps; high retention rate in excess of x% [...]; [...] average revenue per advertisers up x% y-o-y; strong R&D focus with x out of 240 employees in product and technology." "Mobile focused demand side technology platform delivering app installs at scale [...]." "Built extensive supply network through direct media relationships with its own proprietary supply side solutions." (Strategic business plan)
Observations	Vision, key success factors and strategy are expressed by a few individual, high-level KPIs. Strategy and operations are linked by the focus on revenue, costs and utilization rate. Performance measurement is used strongly in diagnostic centers and Customer Service. The "AlphaCo Process House" is developed as a strategic KPI system.	BetaCo measures (too) many KPIs. Vision, key success factors and strategy are outlined by several financial and non-financial KPIs. Strategy and operations are aligned using financials and conversion rate. KPIs are also used for standardized, repetitive operational processes, e.g. in "Customer Support". Action project develops "BetaCo Strategic KPI System".	Vision, key success factors and strategy are outlined by financial KPIs and non-financial KPIs. Strategy and operations are aligned by focus on revenue, customers, media partners and retention rate. "Business Operations" are managed by KPIs on the employee level. Action project develops "DeltaCo Growth Cycle".

Tab. 91: Data triangulation for key performance measures

	AlphaCo	BetaCo	DeltaCo
Interviews	<p>"The goal is the highest possible degree of transparency. The key strength of 'datability' requires AlphaCo to be highly data driven." (CEO)</p> <p>"The business is highly measurable but many measurable KPIs are not yet collected. We need to become better at measuring to understand our business." (CEO)</p>	<p>"The idea is to derive KPIs from the vision and our business model, actually less from the strategy, and then allocate these KPIs to the org chart and make the 2nd level responsible for their KPIs. The KPI system shall be something like a framework for learning about our business. From this framework we can then derive a catalog of initiatives of what goes right and what and why things go wrong." (CEO)</p>	<p>"We need to balance our culture of ownership with management's information and control needs in a management by exception approach." (COO)</p> <p>"More KPI steering is necessary due to higher information needs, not so much control needs, of management." (COO)</p>
Observations	<p>AlphaCo uses strategic KPIs interactively to make vision, key success factors and strategy understandable and inspiring. Growth KPIs, especially revenue, costs and utilization rate, are used diagnostically and interactively to formulate and implement strategy and to align growth strategy and operations. Ops KPIs are used to diagnostically control operational processes.</p>	<p>BetaCo uses strategic KPIs interactively on a strategic level to outline strategic direction, vision and key success factors. BetaCo uses growth KPIs, most essentially revenue and conversion rate, to align growth strategy and operations. These KPIs are used both interactively and diagnostically. BetaCo diagnostically uses a selection of ops KPIs to monitor repetitive operational processes.</p>	<p>DeltaCo uses strategic KPIs interactively to outline and learn about vision, key success factors and strategy on a high level. DeltaCo uses growth KPIs, especially revenue, retention rate, customers and partners to align strategy and operations. Use of these KPIs is both interactive and diagnostic. Ops KPIs are used diagnostically to control operational processes.</p>

Tab. 92: Data triangulation for use of key performance measures

	AlphaCo	BetaCo	DeltaCo
Interviews	"We have a low level of measurement in qualitative and quantitative KPIs at the moment, we measure rather ex post and ad hoc. We do something like 'damage measurement'. Measurement happens in sales, and there is very detailed measurement in Customer Service and selective surveys on customers' satisfaction." (Head of Finance)	"We as the founders want to lead by measuring performance and allocating KPIs to employees." (CEO) "In particular, middle management got to take on more responsibility and manage their own KPIs." (CEO)	"The role of KPIs is dependent on the team, KPIs have a large role in performance evaluation in business teams, and a smaller role in tech and supportive teams." (VP Finance) "Growth comes through new offices, so the KPI reporting must work for scaling." (COO)
Organization level	Role is to evaluate progress towards vision, key success factors and strategy.	Role is to evaluate progress towards vision, key success factors and strategy.	Role is to evaluate progress towards vision, key success factors and strategy.
Function level	Low to no role for most headquarters' functions. Important role to evaluate performance of the "Customer Services" function. Financials play a role for evaluating diagnostic centers as an entity. Performance evaluation is subjective and less formalized.	BetaCo measures KPIs for all of its functions and compares them versus the previous month. KPIs are frequently discussed. Performance evaluations are rather subjective but are increasingly objective and formalized.	Low role in evaluating product and technology functions. Increasing role in operations and support functions. Important role in "Business Development" and "Business Operations". Evaluation is mixed between subjective and objective / formalized.
Individual employee level	No role of KPIs to evaluate performance of headquarters employees. Important role of "Index Score" KPI to evaluate employees in diagnostic centers objectively and formally.	KPIs are not used to evaluate the performance of individual managers or employees directly but rather their functions. Intention to use more KPIs for middle managers in the future.	Financial KPIs are used to evaluate performance of MDs and sales representatives of international sales offices. KPIs are also used to monitor employees in "Business Operations".

Tab. 93: Data triangulation for role of performance measures in performance evaluation

	AlphaCo	BetaCo	DeltaCo
Interviews	<p>"The business is highly measurable but many measurable KPIs are not yet collected. We need to become better at measuring to understand our business." (CEO)</p> <p>"KPIs are not supposed to be connected to any targets yet so that the organization can actually learn." (CEO)</p>	<p>"We over-measure. We suffer of over-measurement." (CFO)</p> <p>"We do have many KPIs. I have a huge report. But I don't really know what KPIs I'm supposed to drive, what KPIs I own exactly. Clarification on KPI ownership would help me learn about what my job is exactly." (Category Manager)</p>	<p>"We measure all of this, but we are not good at bringing all together." (COO)</p> <p>"We measure a lot. That is not the problem. The understanding of causal relationships and acting upon development of KPIs is the challenge." (COO)</p>
Documents	<p>"Our solid foundation for scaling the business. Process driven organization - the company turns implicit into explicit knowledge and has a proven tool set for all levels of the AlphaCo Process House." (Chart for AlphaCo Process House)</p>	<p>"We will transit to a fully data-driven company. We will profit from decisions grounded in data by building up a solid reporting infrastructure." (All hands meeting presentation Jan 2016)</p>	<p>"We have kicked-off a short project with the purpose to sharpen our KPI set and reporting, and how we take action from that. [...]. This initiative will help us improve to crispen our focus, get better transparency and a consistent view on all key operational KPIs driving our business." (COO E-Mail)</p>
Observations	<p>AlphaCo's business is highly measurably, but founders hesitate to commit to a selected set of KPIs. Their main challenge is to identify the right KPIs.</p>	<p>BetaCo 'over-measures'. They emphasize financial KPIs. Their challenge is to commit to the right non-financial KPIs, relate KPIs to each other and into a system, and link KPIs to the organization.</p>	<p>DeltaCo measures many different KPIs. Financial KPIs are dominant. Their main challenge is to identify the right non-financial KPIs for each function and integrate KPIs to a KPI system.</p>

Tab. 94: Data triangulation for omission of key performance measures

	BetaCo Strategic KPI System	DeltaCo Growth Cycle
Interviews	<p>"The KPI system shall be something like a framework for learning about our business." (CEO)</p>	<p>"We measure a lot. That is not the problem. The understanding of causal relationships and acting upon development of KPIs is the challenge." (COO)</p>
Integration	<p>Processual linkages between KPIs along BetaCo's primary value chain. Value chain view implies business-model-related performance dimensions.</p>	<p>Circular linkages between KPIs along the network effects of DeltaCo's platform. Network effects view imply business-model-related performance dimensions.</p>
KPI types	<p>Integration of strategic KPIs and growth KPIs; some ops KPIs; focus on non-financial KPIs and revenue-related financial KPIs.</p>	<p>Integration of strategic KPIs and growth KPIs; some ops KPIs; focus on non-financial KPIs and revenue-related financial KPIs.</p>
Meeting participants	<p>"Weekly Management Update" Founders, middle managers from all functions, key employees</p>	<p>"Management Call Operations" Founder, international managing directors, middle managers</p>
Frequency	<p>Weekly meeting</p>	<p>Bi-weekly meeting and call</p>
Report Preparation	<p>"Weekly Management Update" KPIs and report are prepared centrally by Business Intelligence, comments are added by founders and managers.</p>	<p>"Growth Cycle Report" KPIs are delivered centrally from Business Intelligence, report is prepared by Corporate Development, and comments are added by executives and middle managers.</p>
Sources	<p>BetaCo Strategic KPIs System (project presentation), Weekly Management Update Report</p>	<p>Concept KPI Reporting (project presentation), Growth Cycle Report (May 2016)</p>

Tab. 95: Comparison of BetaCo's and DeltaCo's strategic performance measurement systems

B6 Target setting

	AlphaCo	BetaCo	DeltaCo
Interviews	<p>"I don't feel like wasting time for formal target talks (Zielgespräche), when targets shift all the time." (CEO)</p> <p>"Target setting happens indirectly, through the function in the org chart as well as through task allocation and direct monitoring by founders." (Employee Personnel & Academy)</p>	<p>"The business plan is the highest law so to say. The business plan from July 2015 is negotiated and agreed upon with our strategic investor. The targets in our business plan are made transparent to the team, who then themselves derive their targets from it." (COO)</p>	<p>"Our business is difficult to forecast with high volatility in revenues, hence it does not make sense to do hard long-term budget." (COO)</p> <p>"The reason behind net revenue targets in most teams is we want to align departments with each other, with the company and with the customer." (CRO)</p>
Documents	<p>"The Knowledge & Quality team aims to achieve the following goals: to document knowledge and make it explicit, to make knowledge available, to support a culture of a learning organization, to establish and enforce quality standards. We support the organization by consulting and support in the areas of process and document management." (Onboarding presentation)</p>	<p>"Revenue growth and outlook: new growth since mid-November, target achievement in January is still our objective." (Investor presentation)</p>	<p>"We need to transform goal setting and our performance management approach to be more transparent, fair, rewarding, motivating and to unlock the full potential of our people and organization." (COO presentation)</p>
Observations	<p>AlphaCo use all types of targets. Founders emphasize targets' motivation, coordination and resource allocation role. In diagnostic centers, targets are substituted by roles and responsibilities. Performance levels are ambitious in the headquarters, and moderate in diagnostic centers.</p>	<p>BetaCo uses all types of targets with some preference for KPI targets. BetaCo uses all roles with some emphasis on motivation and opportunity seeking. Targets' role in evaluation and rewarding is increased. Targets are stretch targets. The use of two sets of targets with different performance levels is observed occasionally.</p>	<p>DeltaCo uses all types of targets with preference for KPI targets. DeltaCo applies all roles of targets. Performance levels are challenging, especially for employees in international sales offices. The OKR goal setting process creates a rhythm of setting reasoned targets and executing on them.</p>

Tab. 96: Data triangulation for target setting

	AlphaCo	BetaCo	DeltaCo
Targets for financial KPIs	Monthly financial targets in strategic business plan	Monthly financial targets in financial business plan	Monthly financial targets in financial business plan
Targets for non-fin. KPIs	Targets for non-financial KPIs only selectively	Monthly and weekly improvement targets for non-financial KPIs	Monthly and bi-weekly targets for non-financial KPIs
Qualitative business targets	Project targets and targets for more comprehensive non-regular tasks. Time horizons vary.	Project targets and targets for more comprehensive non-regular tasks; "OKRs"; time horizons vary.	Project targets and targets for more comprehensive non-regular tasks; "OKRs"; time horizons vary.

Tab. 97: Types of targets at case studies

	AlphaCo	BetaCo	DeltaCo
Motivation	Strong use	Strong use	Strong use
Coordination	Strong use	Strong use	Strong use
Resource allocation	Strong use	Strong use	Strong use
Opportunity seeking	Moderate use	Strong use	Strong use
Performance evaluation & rewarding	Low formal use, yet strong informal use	Moderate formal use, yet strong informal use	Moderate formal use, yet strong informal use

Tab. 98: Roles of operational targets at case studies

	AlphaCo	BetaCo	DeltaCo
Interviews	"Employees shall not get formal targets, at least not yet. First the sales function heads are supposed to get explicit targets, probably revenue targets first and then profit targets, which are then connected to bonuses; this is not to be happening in the first year of working for the company, so that the manager can learn the business thoroughly." (CEO)	"Sometimes there are two different kinds of targets, one set for management and investors and one set for middle management. This is to get more stretch into targets and get more performance out of the teams. To have them work really fast. So sometimes different stretch targets are communicated to team. Usually targets are very ambitious but achievable." (COO)	"The company grows only with ambitious revenue goals." (CRO) "Managing directors set ambitious objectives for the company and ambitious targets for their teams." (Senior Manager Corporate Development)
Observations	Challenging targets for headquarter functions. Moderate/ achievable targets for diagnostic center employees. Challenging targets are credible due to founders' ambitions and are part of values systems. Targets are based on historical performance and discussions.	Stretch targets for the whole company, all functions teams and all employees. Occasionally, founders use different sets of targets. Challenging targets are part of the organizational culture. Targets are based on historical performance and discussions.	Stretch targets for the company, all functions and all employees. Targets for the sales function are particularly aggressive. Executives' performance orientation provides credibility to stretch targets. Values emphasize challenging targets. Targets are based on historical performance and discussions.

Tab. 99: Data triangulation for levels of performance

B7 Performance evaluation

	AlphaCo	BetaCo	DeltaCo
Interviews	"A performance management process is to be introduced by the new Head of Personnel & Academy, who was hired just recently, also for this purpose. I expect a rather subjective evaluation of the headquarters employees. For diagnostic centers we use a very detailed, quantitative and quite objective performance management process with a lot of criteria that calculate the performance and reflects it with development targets." (CEO)	"Right now, there is no performance evaluation. There are no consequences if targets are not met, as we as the founders are very involved in daily business." (COO) "There is not enough feedback about performance to employees. We would need to understand more what we did well so that we can progress." (Head of New Brand & Business Development)	"Performance evaluations are rather formal, very direct, are done within defined processes. Team leads get frequent, strict and direct feedback from managing directors in jour fixes." (COO) "Business functions use rather quantitative goals and objective performance evaluation based on financials; support functions have subjective goals, a rather subjective evaluation." (COO)
Documents	"All evaluations are conducted by the line manager. These evaluations are discussed with your manager's manager in the framework of the AlphaCo Performance Management Process. Employee performance is assessed based on regular performance observations. These formal observations are complemented with day-to-day feedback. By doing so we achieve an objective evaluation." (Presentation for performance management in diagnostic centers)	"We do feedback talks annually. The first feedback talk takes place before your probation period ends. The next feedback talks then happen annually. Your manager and an HR representative take part in your feedback talk. You get the invitation to the feedback talk about 3-4 weeks in advance. The invitation e-mail also includes a feedback survey, which you and your manager fill out." (Employee manual)	"The objective of the talent management matrix is to develop people both professionally and personally, while strengthening competences needed for growing DeltaCo successfully on all levels." (Talent management presentation) "Performance evaluations have the objective to determine individual performance and bonus and is not (only) linked to OKR." (COO presentation)
Observations	Founders give performance evaluation a high relevance and formalize the process further. Subjective evaluations in the headquarters. Objective, formulaic evaluation for diagnostic centers' employees with explicit performance dimensions in the "Performance Management Process". Subjective evaluation for functions and on the company level in multi-purpose meetings.	BetaCo evaluates performance frequently and still rather informally. High relevance of informal situational feedback. Founders partly have difficulties giving negative feedback. Generally subjective performance evaluation on all organizational levels due to partly shifting performance dimensions. BetaCo is in the process of formalizing their "Feedback Process".	DeltaCo has several performance evaluation processes in place with quite clear distinction between informal situational feedback, feedback in "One-on-Ones", the quarterly OKR rhythm, and the bi-annual performance reviews. Headquarters employees are evaluated rather subjectively. Sales employees in international sales offices are evaluated objectively.

Tab. 100: Data triangulation for performance evaluation

	AlphaCo	BetaCo	DeltaCo
Formal evaluation processes	HQ: no formal process; formalized by Head of Personnel & Academy DC: formal annual "Performance Management Process (PMP)" to calculate "Index Score"	All EMP: annual "Feedback Process"	All EMP: bi-annual evaluations with "Talent Management Matrix", bi-annual "Career Development Talks", quarterly "Performance Evaluation"
Informal evaluations	HQ: frequent situational feedback DC: "day-to-day feedback"	All EMP: frequent situational feedback	All EMP: frequent situational feedback
Evaluators	HQ: founders, middle managers DC: direct supervisor, next two managers in annual process	Founders, middle managers	Founders, middle managers, direct supervisors, peers
Performance dimensions	HQ: mission/vision, values, roles DC: roles, four stable performance criteria (results, behavior, knowledge, soft skills)	EMP: vision, values, targets	EMP: vision, values, roles, targets; formal criteria in "Talent Management Matrix" along values system; ISO: vision, values, revenue
Objectivity	HQ: subjective evaluation DC: objective evaluation; formulaic calculation of "Index Score"	Subjective evaluation by founders and middle managers	ISO: objective, formulaic evaluation based on revenues EMP: subjective performance evaluation
Rewards	HQ: no formal link DC: formal link by "Index Score" to compensation and promotion	MM and EMP: no formal link	ISO: formal link to bonus EMP: discussion around link to bonus and other incentives
Admin	HQ: founders, managers, increasingly Personnel & Academy DC: Finance & Accounting	Human Resources for annual evaluation process	Human Resources
Sources	Performance management presentation, compensation policy, performance evaluation tool	Human resources strategy presentation, employee manual, leadership handbook	Talent management presentation, COO performance management presentation, performance management presentation
Abbr.	HQ = Headquarters employees DC = Diagn. Centers employees	MM = middle managers EMP = employees	ISO = international sales offices EMP = employees

Tab. 101: Approach to performance evaluation on the employee level at case studies

	AlphaCo	BetaCo	DeltaCo
Formal evaluation processes	"Monthly Management Team Meeting"; regular "Jour Fixe" meetings between founders and middle managers	Quarterly OKRs; monthly "First Monday Meeting"; "Weekly Management Update"; "Weeklies"	Bi-weekly "Management Call Operations"; weekly "One-on-Ones" between executives and middle managers
Informal evaluations	Not observed except of situational feedback to middle managers	Not observed except of situational feedback to middle managers	Not observed except of situational feedback to middle managers
Evaluators	Founders, middle managers participate	Founders, middle managers participate	CEO, COO, CRO, middle managers participate strongly
Performance dimensions	Mission, vision, value proposition, roles, targets; prospectively "AlphaCo Process House"	Value proposition, revenue, targets, KPIs; "BetaCo Strategic KPI System" after action project	Value propositions, revenue, roles, targets, KPIs; "DeltaCo Growth Cycle" after action project
Objectivity	Subjective evaluation by founders. Group reviews increases objectivity and visibility of performance.	Subjective evaluation by founders. Subjectivity is decreased and performance pressure is increased by frequent group reviews.	Int. sales offices MDs: objective evaluation based on revenue Middle managers: subjective evaluation. Use of group reviews.

Tab. 102: Approach to of performance evaluation on the functional level at case studies

	AlphaCo	BetaCo	DeltaCo
Formal evaluation processes	"Monthly Management Team Meeting"; introduction of "OGSM" strategic management process starting with "OGSM 2016 Workshop Series"	"First Monday Meeting"; "Weekly Management Update"; "Founders Weekly"; founders introduce regular strategic management process ("strategy offsites")	Bi-weekly "Management Call Operations"; weekly "Management Jour Fixe"; bi-annual "DeltaCo Strategy Week"
Informal evaluations	Not observed	Not observed	Not observed
Evaluators	Founders, investors, middle managers	Founders, investors, middle managers	CEO, COO, CRO, international sales MDs, middle managers
Performance dimensions	Mission, vision, strategic objectives; financials KPIs; prospectively KPIs from "AlphaCo Process House"	Vision, strategic objectives; revenue, financial KPIs; non-financial KPIs from "BetaCo Strategic KPI System"	Vision, strategic objectives; revenue, financial KPIs; KPIs from "DeltaCo Growth Cycle"
Objectivity	Subjective evaluation along the strategic business plan	Subjective evaluation of strategy; objectivity due to variance analysis versus the financial business plan	Subjective evaluation of strategy; objectivity due to variance analysis using the financial business plan

Tab. 103: Approach to performance evaluation on the company level at case studies

B8 Reward systems

	AlphaCo	BetaCo	DeltaCo
Interviews	<p>"Only regional managers have variable compensation that is linked to revenue [in the future]. This bonus is fixed in the first full year, so that learning can take place." (CEO)</p> <p>"Non-financial rewards are mainly given through personal development and progression inside the company, meaning more responsibilities, promotion, change of location." (CEO)</p> <p>"Penalties are not formalized, only expressed with lack of recognition ('Liebesentzug')." (Head of Finance)</p> <p>"Penalties only work through negative feedback and non-progress in the organization." (Employee Personnel & Academy)</p>	<p>"We have a low to no use of bonuses, as target setting is difficult or even not possible at the moment. We still have to learn what performance actually is at BetaCo and how to measure it. Only when performance can be measured really well then, we can think about paying bonuses." (COO)</p> <p>"We believe in group rewards, in rewarding the team by having a good time together. For instance, we invite the whole company for two days of skiing end of January." (COO)</p> <p>"We hardly use penalties in the strict sense of the word. We rely on open feedback and direct negative feedback if performance is not sufficient." (COO)</p>	<p>"About 80% of employees have bonuses, but they are supposed to be eliminated; only managers with revenue responsibility shall have bonuses in the future." (COO)</p> <p>"Senior management, everything from 'head of', gets shares to align them with the growth of the company." (Head of HR)</p> <p>"We also provide non-financial incentives such as the work environment, international talent program, titles and fast careers, managerial responsibility, mentoring program for talents done by managing directors, cool work assignments." (COO)</p> <p>"The company does not really do penalties, no formal and no informal penalties." (Senior Manager Corporate Development)</p>
Documents	<p>"For each competence area there are individual competence levels associated with performance dependent base salaries. The total compensation is calculated by the base salary and an extra payment, which is obtained by assuming additional responsibilities." (Performance management presentation)</p>	<p>"Shareholders decided to adopt an employee stock option plan for the acquisition and retention of core employees." (Investor presentation)</p> <p>"Unified titles and salaries create predictability, comparability and fairness among employees." (HR strategy presentation)</p>	<p>"Bonuses make sense only in case of objectively measurable and rather narrow activity, low variance of tasks (Sales, Account Management), and rewarding outstanding results." (COO performance management presentation)</p>
Observations	<p>AlphaCo has a "no-frills approach" to financial rewards. The CEO links incentives with learning. AlphaCo use rewards for professional progress and learning strongly. Rewarding is very structured in diagnostic centers. Formal penalties are avoided, yet informal penalties are used by founders.</p>	<p>BetaCo's founders express doubts towards financial rewards designed too strongly. Founders use group rewards strongly. Founders want to increase middle managers' entrepreneurial drive by offering stock option plans. Formal and informal penalties are avoided probably even too much.</p>	<p>DeltaCo do use bonuses but are abandoning them except of for sales employees and senior managers. DeltaCo works strongly with rewarding for group membership. Middle management is additionally incentivized by stock options. Penalties are avoided yet are applied where necessary.</p>

Tab. 104: Data triangulation for rewards and penalties

	AlphaCo	BetaCo	DeltaCo
Skill-based salary	Strong use	Strong use	Strong use
Promotion	Strong use	Strong use	Strong use
Stock options	No use (maybe in the future)	Strong use (managers)	Strong use (managers)
Bonus	No use (for sales in the future)	No use	Used but abolished soon
Profit-sharing	No use	No use	No use
Gain-sharing	No use	No use	No use

Tab. 105: Use intensity of financial rewards at case studies

	AlphaCo	BetaCo	DeltaCo
Rewarding group membership			
Great team	Strong use	Strong use	Strong use
Office design	Strong use	Strong use	Strong use
Social events	Strong use	Strong use	Strong use
Rewarding professional progress			
Autonomy	Strong use	Strong use	Strong use
Responsibility	Strong use	Strong use	Strong use
Nice title	Moderate use	Strong use	Strong use
Fast career	Strong use	Strong use	Strong use
Training	Strong use	Strong use	Strong use
Development	Strong use	Strong use	Strong use
Rewarding effort and contribution			
Recognition	Moderate use	Strong use	Strong use
Public praise	Moderate use	Strong use	Strong use

Tab. 106: Use intensity of non-financial rewards at case studies

	AlphaCo	BetaCo	DeltaCo
Informal penalties			
Interference by superiors	Strong use	Strong use	Strong use
No praise or recognition	Strong use	Strong use	Strong use
Unimportant assignments	Moderate use	Moderate use	Moderate use
Public shaming	No use	No use	No use
Formal penalties			
No salary increase	Low use	Low use	Low use
No bonus	Not applicable	Not applicable	Moderate use (sales)
Official warnings	Low use	Low use	Low use
Loss of job	Low use	Low use	Low use
Title demotion	No use	No use	No use

Tab. 107: Use intensity of formal and informal penalties at case studies

B9 Information flows, systems and networks

	AlphaCo	BetaCo	DeltaCo
Interviews	<p>"The Quality Circle is an important gate keeper meeting every second Friday. Then we do the Monday Meeting every week with the founders. And we do a Management Team Meeting once a month." (CEO)</p> <p>"Meetings function rather as coordination tools and for performance measurement and performance evaluation, they function not so much as for distributing information." (Head of Finance)</p>	<p>"It is necessary to do so many meetings to keep on pressure and focus on things that need to get done so that we can achieve our strategic investor to call their option." (CEO)</p> <p>"We need to build up a meeting structure and then tightly keep 'meeting compliance', which means to attend to meetings in time and not to change the meeting schedule too often. Meetings are a tool to teach and learn. We also need to change from informative meetings to decision meetings." (CEO)</p>	<p>"We over-communicate a lot; it helps with aligning and learning." (COO)</p> <p>"No support from business intelligence, we need more support and information." (VP Growth)</p> <p>"Decision-making rather with vertical information flows, and still managing directors are not always well informed; execution shows rather horizontal information flows." (VP Finance)</p>
Documents	<p>"In all meetings, whether regular meetings or individually planned, we appreciate good preparation and timeliness." (Employee handbook)</p>	<p>"It is company policy that meetings start and end in time." (Employee manual)</p>	<p>"Meeting rules: comments should be short, precise and relevant, comments should focus on learnings, comments should be action-oriented" (Growth Cycle Report, May 2016)</p>
Observations	<p>AlphaCo's founders are extraordinarily deliberate in designing focused information flows. The "AlphaCo Information System" is at the core of AlphaCo's innovation. The "Knowledge & Quality" department is created to collect and distribute knowledge. AlphaCo leverages information systems intensely. Clear meeting structure, which is even outlined in the employee handbook.</p>	<p>BetaCo's founders rely strongly on meetings to manage their organization. The meeting schedule is formalized. Most meetings serve multiple purposes. BetaCo also leverages several information systems. Founders frequently use formal practices, such as office design and social events, to create informal communication. Founders also use formal practices to influence organizational culture.</p>	<p>DeltaCo is conscious to create the right information flows. Meeting schedules are formalized. Meetings increasingly specialize in purpose. The "DeltaCo DL 360" information system is developed as DeltaCo's core innovation. DeltaCo leverages many software solutions to manage information. DeltaCo designs their office deliberately to create information flows and uses formal practices to create informal communication.</p>

Tab. 108: *Data triangulation for information flows, systems and networks*

	AlphaCo	BetaCo	DeltaCo
Business operations			
Customer relationship management	"AlphaCo Information System"	Licensed e-commerce solution	SaaS CRM solution
Purchasing	None (Excel)	None (Excel)	None (Excel)
Production	Not applicable	Not applicable	Not applicable
Operations	Self-developed software, the "AlphaCo Information System"	Licensed e-commerce solution	Self-developed software "DeltaCo DL 360", marketing partnerships solutions
Logistics	Not applicable	Licensed e-commerce solution	Not applicable
Customer service	"AlphaCo Information System"	Customer service software solution	Customer service software solution
Enterprise resource planning	None, but CEO thinks about it	None	None
Collaboration			
File hosting	Web-based collaboration service	File hosting service solution	Cloud-based collaboration and productivity apps
Office applications	Microsoft Office	Microsoft Office	Cloud-based collaboration and productivity apps
Project management	Web-based project management and issue tracking tool	Web-based issue tracking solution	Web-based collaboration solution
Knowledge management	Several software for collaboration, flow charts and knowledge management	Collaboration software solution	Web-based collaboration solution
Support functions			
Human resources	Several solutions for HR admin, shifts scheduling, recruiting	SaaS solution for HR admin	Several solutions for payroll, HR admin and recruiting
Finance & accounting	Information system services provider for tax and accounting	Several software solutions for accounting and planning	Several software solutions for accounting and travel expenses
Business intelligence	None (Excel)	SQL (Structured Query Language) and Excel	Two business analytics software solutions

Tab. 109: Information systems at AlphaCo, BetaCo and DeltaCo

	AlphaCo	BetaCo	DeltaCo
Founders	Weekly "Monday Meeting"	"Founders Weekly"	Weekly "Management Jour Fix"
Founders and direct reports	Weekly "Jour Fixes" between founders and their direct reports	"Weeklies" between founders and their direct reports	Weekly "One-on-Ones" between founders and their direct reports
Leadership team	Monthly "Management Team Meeting", bi-weekly "Quality Circle"	"Weekly Management Update"	Bi-weekly "Management Call Operations", bi-weekly "Management Call Product/Tech" Bi-weekly "All Hands"
Company-wide	Triggered by events	Monthly "First Monday Meeting"	
Strategic management	Quarterly "OGSM 2016" workshops series	No regularity yet, but intend more regular "strategy offsites"	Bi-annual "DeltaCo Strategy Week"
Board of directors	Quarterly investor meeting/calls	Monthly "Investor Jour Fixe"	Quarterly investor meeting
Target setting	Other regular meetings	Quarterly OKR meetings	Quarterly "Objectives and Key Results"
Performance evaluation	Diagnostic centers: annual "Performance Management Process"; headquarters to be determined	Annual "Feedback Process"	Bi-annual "Talent Management Matrix", bi-annual "Career Development Talks", quarterly "Performance Evaluation"
Knowledge exchange	Monthly "Onboarding Trainings", regular meetings for knowledge exchange	Bi-weekly "BetaCo Academies", regular onboarding trainings	Bi-monthly "Management Update & Training", regular "Knowledge Sessions", regular onboarding trainings
Team meetings	Yes, frequency unknown	Yes, weekly	Yes, weekly
Cross team meetings	Yes, frequency unknown	Yes, weekly	Yes, frequency unknown
Source	Employee handbook, performance management presentation	Organization and meeting schedule, Employee Manual, OKRs presentation	Overview meeting schedule, COO performance mgmt. presentation

Tab. 110: Formal meeting schedules at AlphaCo, BetaCo and DeltaCo

	AlphaCo	BetaCo	DeltaCo
Office design	Office design, especially seating and kitchen	Office design, especially seating, kitchen and gym	Office design, especially seating, kitchen and lounge
Social events	Summer Party, Christmas Party, "B2Run Company Run"	"Hütt Gaudi", "BetaCo Wiesn", "Fitness Challenges"	Summer Party, Christmas Party, "Mallorca Trip", "Lottery Lunch"
Late work catering	Pizza in the evening	Pizza in the evening, beer on Fridays	Pizza in the evening, beer on Fridays
Not designed networks	Friendships, "Penguin Group" of early employees; lunches, coffee breaks	friendships, lunches, coffee breaks, veterans, smokers, sportsmen	Friendships, lunches, coffee breaks, veterans, smokers, party-goers

Tab. 111: Informal communication and networks at AlphaCo, BetaCo and DeltaCo

B10 Performance management system use

	AlphaCo	BetaCo	DeltaCo
Key performance measures	Interactive use of financial and non-financial strategic KPIs on strategic planning level; Interactive and diagnostic use of financial and non-financial growth KPIs on management control level and for strategic-recurring processes; Diagnostic use of non-financial ops KPIs on operational control level and for operational processes. "AlphaCo Process House" to introduce more diagnostic use and to balance interactive and diagnostic use.	Interactive use of financial and non-financial strategic KPIs on strategic planning level; Interactive and diagnostic use of financial and non-financial growth KPIs on management control level and for strategic-recurring processes; Diagnostic use of non-financial ops KPIs on operational control level and for operational processes. "BetaCo Strategic KPI System" to introduce more diagnostic use and to balance interactive and diagnostic use.	Interactive use of financial and non-financial strategic KPIs on strategic planning level; Interactive and diagnostic use of financial and non-financial growth KPIs on management control level and for strategic-recurring processes; Diagnostic use of non-financial ops KPIs on operational control level and for operational processes. "DeltaCo Growth Cycle" to introduce more diagnostic use and to balance interactive and diagnostic use.
Target setting	Interactive and diagnostic use of target setting process; Interactive use when setting targets and evaluating outcomes; Diagnostic use of targets between target setting cycles; Target setting in diagnostic centers is mainly diagnostic.	Interactive and diagnostic use of target setting process; Interactive use when setting targets and evaluating outcomes; Diagnostic use of targets between target setting cycles; OKR goal setting system is introduced to balance interactive and diagnostic use.	Interactive and diagnostic use of target setting process; Interactive use when setting targets and evaluating outcomes; Diagnostic use of targets between target setting cycles; OKR goal setting system is introduced to balance interactive and diagnostic use.
Performance evaluation	Interactive use due to subjective performance evaluation and informal feedback; Diagnostic use due to objective performance evaluation in diagnostic centers.	Interactive use due to subjective performance evaluation and informal feedback; No formulaic evaluations; some diagnostic use of performance information in "Customer Support".	Interactive use due to subjective performance evaluation and informal feedback; Diagnostic use due to objective performance evaluation in intl. sales offices.
Reward systems to support use	Non-financial rewards and group rewards support interactive use of KPIs and targets. Financial rewards and penalties support diagnostic use, especially in diagnostic centers.	Non-financial rewards and especially extensive group rewards support interactive use of KPI and operational targets. Financial rewards and penalties relate to rather diagnostic use.	Non-financial rewards and group rewards support interactive use of KPIs and targets. Financial rewards and penalties support diagnostic use, especially in intl. sales offices.

Tab. 112: Use of performance measurement and feedback systems at case studies

	AlphaCo	BetaCo	DeltaCo
Company / founders	Predominantly interactive use;	Predominantly interactive use; some diagnostic use due to financial business plan	Predominantly interactive use; some diagnostic use due to financial business plan
Functions / managers	Predominantly interactive use with some diagnostic use in most functions of the headquarters; Diagnostic use in diagnostic centers (scaling unit) and in Customer Services; "AlphaCo Process House" to introduce balanced use and integrate company and functional levels.	Interactive use in most functions due to frequent meetings, yet diagnostic use is increased using reports; "BetaCo Strategic KPI System" is supposed to balance interactive and diagnostic use and integrate company and functional levels.	Interactive and diagnostic use in most functions of the headquarters; Diagnostic use of performance information for international sales offices (scaling unit); "DeltaCo Growth Cycle" is expected to balance interactive and diagnostic use and integrate organizational levels.
Employees	Diagnostic use only for individual employees in diagnostic centers (AlphaCo's scaling unit) and Customer Services.	Balanced use of performance information for middle managers in "Weekly Management Update" report and meeting.	Diagnostic use only for employees in international sales offices (DeltaCo's scaling unit) and Business Operations.

Tab. 113: Use at different organizational levels at case studies

B11 Performance management system change

	AlphaCo	BetaCo	DeltaCo
Shared growth vision	Yes, growth vision strongly drives motivation for change	Yes, growth vision strongly drives motivation for change	Yes, growth vision strongly drives motivation for change
Founders' experience	Yes, especially CEO experience results in proactive change	Yes, especially CEO and COO experience drives change	Yes, especially the COO's role results in proactive change
Growth strategy	Yes, PMS changes implement growth strategy, especially due to increasing number of decentral diagnostic centers	Yes, PMS changes implement strategy and focus on customers	Yes, PMS changes implement strategy and focus on customers, especially due to more decentral international sales offices
Growth in employees	Yes, information, coordination and control needs increase	Yes, information, coordination and control needs increase	Yes, information, coordination and control needs increase
Hiring middle managers	Yes, especially Head Finance and Head Personnel & Academy	Yes, especially CFO and interim manager for business intelligence	Yes, to some degree, although management is established
Support functions	Yes, especially Finance, HR and Knowledge & Quality	Yes, especially finance, HR and business intelligence	Yes, especially HR and business intelligence
Venture capital	No, investor is strategic and not involved in management	Yes, investors push for and control changes to performance mgmt.	Investors are rather hands-off, but provide knowledge network
Managerial chaos	No antecedent	Some managerial chaos, yet a rather weak antecedent	No antecedent
Reaction to competition	No antecedent	No antecedent	To some degree COO sees PMS as a competitive advantage
External legitimizing	No antecedent	To some degree PMS legitimizes towards strat. Investor	No antecedent

Tab. 114: Antecedents to performance management system change at case studies

	AlphaCo	BetaCo	DeltaCo
Vision & mission	Stable	Stable	Stable
Key success factors	Stable	Stable	Stable
Organization structure	Middle management level; Growth supporting functions; Rules, procedures & policies; Growth in scaling units	Middle management level; Growth supporting functions; Rules, procedures & policies	Growth supporting functions (re-org. of business intelligence team); Rules, procedures & policies; Growth in scaling units
Strategies & plans	Strategic management process ("OGSM 2016 Workshop Series")	Strategic management process ("Strategy Offsites")	Strategic management process ("DeltaCo Strategy Week")
Key performance measures	Strategic performance measurement system ("AlphaCo Process House")	Strategic performance measurement system, including report and dedicated meeting ("BetaCo Strategic KPI System")	Strategic performance measurement system, including report and dedicated meeting ("DeltaCo Growth Cycle")
Target setting	Target setting process is to be reviewed and re-designed (part of "OGSM 2016")	Target setting process ("Objectives & Key Results")	Target setting process ("Objectives & Key Results")
Performance evaluation	Performance evaluation on employee and functional level ("Performance Mgmt Process")	Performance evaluation on employee and functional level ("Feedback Process")	Performance evaluation on employee and functional level ("Talent Management Matrix")
Reward systems	Stable and formalized ("No frills approach")	Stock option plans for managers and key employees ("ESOP")	Bonuses are eliminated with the exception of sales and managers
Info flows, systems & networks	Information system for accounting and an additional information system for knowledge management; Regular meeting schedule	Information systems for accounting, human resources and business intelligence; Introduction of "Weekly Management Update" meeting	Information system for business intelligence; Re-design of "Management Call Operations"

Tab. 115: Outcomes of performance management system change at case studies (selected practices)

B12 Strength and coherence

	AlphaCo	BetaCo	DeltaCo
Consider multiple stakeholders	Yes, investor, founders, customer groups, employees.	Yes, investors, founders, customers, suppliers, employees.	Yes, investor, founders and executives, customers, employees.
Measure efficiency, effectiveness and equity	Yes, AlphaCo measures efficiency and effectiveness, focus is on efficiency, yet I do not observe equity measures.	Yes, BetaCo measures efficiency and effectiveness, focus is on effectiveness, yet I do not observe equity measures.	Yes, DeltaCo measures efficiency and effectiveness, yet I do not observe equity measures.
Capture financial and non-financial outcomes	Yes, AlphaCo uses financial and non-financial key performance measures.	Yes, BetaCo uses financial and non-financial key performance measures.	Yes, DeltaCo uses financial and non-financial key performance measures.
Provide vertical links between strategy and operations	Yes, latest since the project for the "AlphaCo Process House" and the introduction of the "OGSM 2016 Workshop Series".	Yes, latest since the project for the BetaCo Strategic KPI System and the introduction of the OKR goal setting system.	Yes, latest since the project for the DeltaCo Growth Cycle and the introduction of the OKR goal setting system.
Provide horizontal links across the value chain	Yes, horizontal links in diagnostic centers and by AlphaCo Information System; generally, rather vertical links.	Yes, horizontal links due to BetaCo Strategic KPI System and the Weekly Management Update meeting and report; generally, rather vertical links.	Yes, horizontal links due to DeltaCo Growth Cycle, Management Call Operations, established middle management.
Provide information on external environment	<i>No practice exclusively and explicitly assumes this function.</i>	<i>No, except of customer insights, no practice exclusively and explicitly assumes this function.</i>	<i>No, except of customer insights, no practice exclusively and explicitly assumes this function.</i>

Tab. 116: *Chenhall's (2003) criteria for evaluating strength and coherence at case studies*

PMS component	PMS component	AlphaCo	BetaCo	DeltaCo
Vision & mission	Key success factors	complements	complements	complements
Vision & mission	Strategies & plans	complements	complements	complements
Vision & mission	Key performance measures	complements	complements	complements
Vision & mission	Performance evaluation	complements	complements	complements
Key success factors	Organization structure	complements	complements	complements
Key success factors	Strategies & plans	complements	complements	complements
Key success factors	Key performance measures	complements	complements	complements
Organization structure	Strategies & plans	complements	complements	complements
Organization structure	Key performance measures	complements	complements	complements
Organization structure	Target setting	complements	complements	complements
Organization structure	Performance evaluation	complements	complements	complements
Organization structure	Reward systems	complements	complements	complements
Strategies & plans	Key performance measures	complements	complements	complements
Key perf. measures	Target setting	complements	complements	complements
Key perf. measures	Performance evaluation	complements	complements	complements
Target setting	Performance evaluation	complements	complements	complements
Target setting	Reward systems	complements	complements	complements
Performance evaluation	Reward systems	complements	complements	complements

Tab. 117: *Interdependencies between performance management system components at case studies*

	AlphaCo	BetaCo	DeltaCo
Vision & mission	Self-developed "AlphaCo Information System", software for collaboration and knowledge management, recruiting software	Product management for licensed e-commerce software	SaaS CRM solution, marketing partnerships solution, self-developed software "DeltaCo 360"
Key success factors	Self-developed "AlphaCo Information System", solutions for collaboration, flow charts and knowledge management recruiting software	Licensed e-commerce software, customer service software, SaaS solution for HR admin	SaaS CRM solution, marketing partnerships solution, customer service software, self-developed software "DeltaCo 360", solutions for recruiting and HR admin
Organization structure	Self-developed "AlphaCo Information System", web-based collaboration service, web-based project management and issue tracking tool, solutions for HR admin and recruiting, introduction of information systems by growth supporting functions	Licensed e-commerce software, customer service software, SaaS solution for HR admin, introduction of information systems by growth supporting functions	SaaS CRM solution, marketing partnerships solution, customer service software, solutions for recruiting and HR admin, introduction of information systems by growth supporting functions
Strategies & plans	Self-developed "AlphaCo Information System", web-based collaboration service, web-based project management and issue tracking tool	Licensed e-commerce software, customer service software, file hosting software, web-based issue tracking solution, collaboration software	SaaS CRM solution, marketing partnerships solution, customer service software,
Key performance measures	"AlphaCo Information System", web-based collaboration service, web-based project management and issue tracking tool, recruiting solution, information system for tax and accounting; solutions for collaboration, flow charts and knowledge management	Licensed e-commerce software, customer service software, file hosting software, Microsoft Office, web-based issue tracking solution, collaboration software, several solutions for accounting and financial planning, SQL	SaaS CRM solution, marketing partnerships solution, customer service software, cloud-based collaboration and productivity apps, web-based collaboration solution, solutions for accounting and travel expenses, two business analytics software solutions
Target setting	Web-based collaboration service, web-based project management and issue tracking tool; solutions for collaboration, flow charts and knowledge management	File hosting software, Microsoft Office, web-based issue tracking solution, collaboration software, solution for financial planning	Cloud-based collaboration and productivity apps, web-based collaboration solution, two business analytics software solutions
Performance evaluation	Web-based collaboration service, web-based project management and issue tracking tool; solutions for collaboration, flow charts and knowledge management	File hosting software, Microsoft Office, web-based issue tracking solution, collaboration software, solution for financial planning	Cloud-based collaboration and productivity apps, web-based collaboration solution, two business analytics software solutions
Reward systems	Web-based collaboration service, information system for accounting (payroll), solution for HR admin	Collaboration software, file hosting software, solution for accounting (payroll), solution for HR admin	Cloud-based collaboration and productivity apps, web-based collaboration solution, solution for accounting (payroll), solution for HR admin

Tab. 118: *Interdependencies of information systems and PMS components at case studies*

	AlphaCo	BetaCo	DeltaCo
Vision & mission	Cultural education process, all-hands meetings, "Onboarding Trainings", office design, social events	Cultural education process, "First Monday Meeting", onboarding trainings, "BetaCo Academies", office design, social events	Cultural education process, "All Hands", onboarding trainings "Management Update & Training", office design, social events
Key success factors	Same as for vision & mission	Same as for vision & mission	Same as for vision & mission
Organization structure	"Monday Meeting", "Management Team Meeting", "Quality Circle", office design	"Founders Weekly", "Weekly Management Update", office design	"Management Jour Fixe", "Management Call Operations", office design
Strategies & plans	"OGSM 2016 Workshop Series"	"Strategy offsites"	"DeltaCo Strategy Week"
Key performance measures	Founders "Monday Meeting", "Jour Fixes", "Management Team Meeting", "Quality Circle", investor meetings	"Founders Weekly", "Weeklies", "Weekly Management Update", "Investor Jour Fixe"	"Management Jour Fixe", "One-on-Ones", "Management Call Operations", investor meeting
Target setting	Founders "Monday Meeting", "Jour Fixes", "Management Team Meeting", "Quality Circle"	"Founders Weekly", "Weeklies", "Weekly Management Update", OKR meetings	"Management Jour Fixe", "One-on-Ones", "Management Call Operations", "Objectives and Key Results"
Performance evaluation	Founders "Monday Meeting", "Jour Fixes", "Management Team Meeting", "Quality Circle"; on employee level in diagnostic centers "Performance Management Process"	"Founders Weekly", "Weeklies", "Weekly Management Update"; on employee level "Feedback Process"	"Management Jour Fixe", "One-on-Ones", "Management Call Operations", "Management Call Product/Tech"; on employee level "Talent Management Matrix", "Career Development Talks", "Performance Evaluation"
Reward systems	Founders "Monday Meeting", "Jour Fixe", office design, social events	"Founders Weekly", "Weeklies", office design, social events	"Management Jour Fixe", "One-on-Ones", office design, social events

Tab. 119: *Interdependencies of information networks and PMS components at case studies*

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