



UNIVERSITY OF STRATHCLYDE, BUSINESS SCHOOL,
DEPARTMENT OF MANAGEMENT

DBA THESIS

HOW CAN LOCAL ENTREPRENEURSHIP BE FOSTERED IN MULTINATIONAL ORGANISATIONS?

~

A CASE STUDY IN SIEMENS ENTITIES.

JOE AMBERG

CONFIDENTIAL

Copyright © 2012 by Joe Amberg

Affirmation

This thesis is the result of the author's original research. It has been composed by the author and has not been previously submitted for examination which has led to the award of a degree.

The copyright of this thesis belongs to the author under the terms of the United Kingdom Copyright Acts as qualified by University of Strathclyde Regulation 3.50. Due acknowledgement must always be made of the use of any material contained in, or derived from, this thesis.

Signed:



Joe Amberg

Date:

April 21st, 2012

Table of Contents

1.	Introduction	1
1.1	Overall focus and context of this thesis	1
1.2	Research purpose, research question and aspects of relevance	3
1.3	Structure and main steps of the research	5
1.4	Study summary, findings and obtained contributions to knowledge	7
1.4.1	Pilot study	7
1.4.2	Main thesis	8
1.5	Subsequent structure of this thesis	11
2.	Literature Review	13
2.1	Relevant research fields to be reviewed in detail	14
2.1.1	Corporate entrepreneurship	16
2.1.2	Strategic entrepreneurship and proposed models of corporate entrepreneurship	17
2.1.3	Corporate Venturing (CV)	19
2.1.4	Intrapreneurs and Intrapreneurship	20
2.1.5	Venture creation, achieved performance and growth	22
2.1.6	Aspects of Internationality	22
2.1.7	Subsidiaries, granted mandates and subsidiary initiative	24
2.1.8	Entrepreneurial orientation (EO) and entrepreneurial management (EM)	27
2.1.9	Motivation and decisiveness	30
2.1.10	Legitimacy	33
2.1.11	Trust	34
2.1.12	Capabilities, domain knowledge and learning	34
2.1.13	Long term orientation	36
2.1.14	Entrepreneurial process, ambidexterity and slack resources	37
2.1.15	Industrial environment and competitive advantage	40
2.1.16	Governmental influences and policy	41
2.1.17	Research on specific enablers, barriers and triggers for CE	41
2.1.18	Empirical studies on how to foster entrepreneurship in practice	43
2.2	Achievements and open fields in entrepreneurship research	45
2.3	Derived conceptual research framework and research questions	47
2.4	Summary	51
3.	Methodology and data analysis	52
3.1	Methodology and methods as applied in comparable research	52
3.2	Epistemological and methodological positioning	53
3.3	Study design and respective case selection	56
3.3.1	The longitudinal “real-time” case of the Shinwha acquisition and integration	57
3.3.2	Criteria for, and selection of, further cases	58
3.3.3	Case 2: the SMART project	61
3.3.4	Case 3: the SP new setup	62
3.4	Data collection and data analysis	63
3.5	Case specific data sources	71
3.6	Feasibility considerations and cultural issues	73
3.7	Ethical aspects, conflicts of interest and potential risks	73
3.8	Research limitations by the chosen methods	76
3.9	Summary	77
4.	Case descriptions	78
4.1	Siemens AG, the business unit Fire Safety and its history	78
4.2	Key elements of Siemens processes and organisations	81

4.3	Innovation at Siemens: the <i>top+</i> and <i>3i</i> programs	84
4.4	The <i>Siemens Leadership Framework</i> and the <i>top talent</i> program	85
4.5	Case 1: The acquisition and integration of Shinwha Electronics.....	87
4.6	Case 2: The SMART project	90
4.7	Case 3: The SP new setup	92
4.8	Summary	94
5.	Findings.....	95
5.1	Definition, relevance and current levels of entrepreneurship	95
5.2	Organisation and processes	98
5.2.1	Existence, perception and relevance of processes	98
5.2.2	Ambidexterity management and slack resources.....	101
5.2.3	Compliance and respective company regulation and rules	104
5.2.4	Exclusive sales rights per country	106
5.2.5	Proposed actions to foster entrepreneurship.....	109
5.2.6	Summary.....	110
5.3	Aspects of granted mandates	111
5.3.1	Findings from the Shinwha case.....	112
5.3.2	Findings from the SMART project.....	114
5.3.3	Findings from the SP new setup case	116
5.3.4	General findings and proposed actions of improvement.....	116
5.3.5	Summary.....	120
5.4	Aspects of long term orientation.....	121
5.4.1	Vision, mission and strategies	122
5.4.2	Periods of service in key executive positions and achievement judgments.....	125
5.4.3	Further related findings.....	127
5.4.4	Summary.....	128
5.5	Interactions of researched key aspect.....	129
5.6	Findings on further aspects as emerged from the field research.....	131
5.6.1	Employee selection, capabilities and career making.....	131
5.6.2	Risk and risk averseness	134
5.6.3	Culture, cultural difference and diversity.....	135
5.6.4	Trust and motivation.....	137
5.6.5	Entrepreneurial achievement recognition, rewards and incentives	139
5.6.6	Decisiveness.....	141
5.6.7	Summary.....	144
5.7	Interactions of emerged aspects and revealed patterns	144
5.8	Current main sources for entrepreneurial change	145
5.9	Summary	146
6.	Discussion.....	148
6.1	Elements of entrepreneurial orientation	148
6.2	Allowance, recognition and reward of entrepreneurial activity.....	153
6.3	Aspects of Trust.....	157
6.4	Organisation and processes	159
6.4.1	Entrepreneurial process, ambidexterity management and slack resources.....	161
6.4.2	Management support	164
6.4.3	Capabilities and employee selection.....	166
6.4.4	Organisational complexity	168
6.5	Granted mandates	170
6.6	Long term orientation.....	172
6.7	Relevance of identified factor interactions and factor patterns	175
6.7.1	Interactions within one organisational level.....	175
6.7.2	Interactions throughout all organisational levels	179

6.8	Linkages between recommended actions and organisational levels and processes	180
6.9	Summary	182
7.	Implications	184
7.1	Organisational implications of recommendations	184
7.2	Implications for practice of researched Siemens entities	186
7.2.1	Vision, mission and overall strategy	186
7.2.2	Subsidiary mandates and the systems house approach	189
7.2.3	Firm processes	190
7.2.4	Human resource management	192
7.2.5	Managerial practice	194
7.3	Implications to firm practice in general	195
7.3.1	Identified general patterns among critical elements and potential implications	195
7.3.2	Implications from identified single elements	198
7.4	Implications for theory	201
7.5	Summary	204
8.	Conclusions	206
8.1	Restatement: review of research carried out and its implications	206
8.2	Contributions to knowledge	211
8.3	Limitations of the research carried out	213
8.4	Potential future research	214
	Appendix A – Bibliography	217
	Appendix B – Summary of the Pilot Study	236
	Appendix C – Derivation of Relevant Fields of Involved Literature	239
	C.1 – Initial map of relevant aspects	239
	C.2 - An organising framework of main research streams	240
	Appendix D – List of collected data	246
	Appendix E – Interview Partners and their relevant roles	249
	Appendix F – Participant information and consent forms	250
	Appendix G – Questionnaire scheme for the semi-structured interviews	252
	Appendix H - Study findings on how to foster CE / intrapreneurship	255
	Appendix I – Coding Structure	259
	Appendix K – Data Displays	261
	K1 – Understanding of the terms “entrepreneurship” and ”entrepreneur”	261
	K2.1 – Organisations and Processes – Reported key issues	263
	K2.2 – Organisations and Processes – Ambidexterity management aspects	265
	K2.3 – Organisations and Processes – Ambidexterity management aspects – Cluster analysis	268
	K2.4 – Organisations and Processes – Reported top action items	269
	K2.5 – Organisations and Processes – Reported top action items - Cluster analysis	271
	K3.1 – Granted Mandates – Reported key issues	272
	K3.2 – Granted Mandates – Reported key issues – Cluster analysis	274

K3.3 – Granted Mandates – Proposed top action items	275
K3.4 – Granted Mandates – Proposed top action items – Cluster analysis.....	276
K4.1 – Long Term Orientation – Reported key issues	277
K4.2 – Long Term Orientation – Reported key issues – Cluster analysis	279
K4.3 – Long Term Orientation – Proposed top action items	280
K4.4 – Long Term Orientation – Reported top action items– Cluster analysis	282
K5.1 – Interactions between aspects	283
K5.2 – Interactions between aspects – Cluster analysis.....	285
K5.3 – Importance of key aspects – Cluster analysis	287
K6.1 – Further reported issues – Findings and action items	288
K6.2 – Further reported issues – Cluster analysis	292

List of Figures

Figure 1-1 – The main study in the context of all carried out work packages and deliveries.....	6
Figure 1-2 – Reporting sequence of key aspects throughout the chapters.....	12
Figure 2-1 – Elements and workflow of the review.....	13
Figure 2-2 – Aspects reviewed in detail.....	15
Figure 2-3 – The entrepreneurial process: core aspects and key factors of influence.....	38
Figure 2-4 – Derived overall conceptual framework.....	48
Figure 2-5 – Conceptual framework focussed on the proposed subsequent research elements...	50
Figure 3-1 – A four tier model for key research philosophy aspects.....	53
Figure 3-2 – Overall research concept.....	57
Figure 3-3 – Selected cases in the context of the business unit Fire Safety.....	61
Figure 3-4 – Context and interactions of data collection and analysis.....	64
Figure 3-5 – Example of data coding with NVivo.....	70
Figure 3-6 – Ethical aspects, possible risks and conflicts of interest.....	75
Figure 4-1 – Relevant Siemens organisation and its predecessors.....	79
Figure 4-2 – Siemens Reference Process House framework definition.....	82
Figure 4-3 – Overall Siemens Matrix Organisation as of 1.1.2009.....	83
Figure 4-4 – Capability reference profile examples: division CEO, senior consultant.....	86
Figure 4-5 – Context of motivation for the SMART initiative.....	91
Figure 4-6 – Fire Safety Roadmap to “real” M3.....	92
Figure 5-1 - Integration and differentiation of Siemens Fire Safety R&D locations.....	114
Figure 5-2 – SMART use-case definition with involved activities, actors and their roles.....	115
Figure 5-3 – Certification concept for branches and employees.....	119
Figure 5-4 – Interactions between researched key aspects as seen by interviewees.....	130
Figure 5-5 – Interactions between aspects and towards resulting entrepreneurial activity.....	145
Figure 5-6 – Drivers for entrepreneurial activity from outside the business unit Fire Safety ...	146
Figure 6-1 – Critical factors and their interactions in the context of a CE model.....	177
Figure 6-2 – Drivers for entrepreneurial activity throughout entity layers of a conglomerate ..	180
Figure 7-1 – “One Siemens” definition triangle.....	188
Figure 7-2 – Proposed management process expansion to include opportunity recognition....	191
Figure 7-3 – Found critical factors, interactions and clustering.....	197
Figure 7-4 – Factor pattern in the context of the CE model of Kuratko et al. (2004).....	204
Figure 8-1 – Initial map of elements found relevant for further investigation.....	240
Figure 8-2 – Organising framework of entrepreneurial research streams and perspectives.....	242

List of Tables

Table 2-1 – Comparison of motivational factors in entrepreneurship.....	31
Table 2-2 – Top ten aspects relevant to foster entrepreneurship in established firms.....	45
Table 3-1 – Case summary: the Shinwha acquisition and integration	58
Table 3-2 – Case summary: the SMART project.....	62
Table 3-3 – Case summary: SP new setup	63
Table 3-4 – Derived research sub-questions.....	66
Table 3-5 – Case specific data sources.....	72
Table 6-1 – Two clusters: “inward” and “outward” aspects.....	160
Table 6-2 – Summary on recommended actions and affected firm levels.....	181
Table 7-1 – Assignment of recommended actions to subsequent sections on implications	185
Table 8-1 – Interview Partners and their relevant roles	249
Table 8-2 – Detailed questionnaires for all involved interview participants	254
Table 8-3 – Study findings on how to foster CE / intrapreneurship.....	258
Table 8-4 – Coding structure	260
Table 8-5 – Understanding of entrepreneurship	262
Table 8-6 – Organisations and Processes – Reported key issues.....	264
Table 8-7 – Ambidexterity management aspects.....	267
Table 8-8 – Ambidexterity management aspects – Cluster Analysis.....	268
Table 8-9 – Organisations and Processes – Reported top action items	270
Table 8-10 – Organisations and Processes – Reported top action items - Cluster analysis.....	271
Table 8-11 – Organisations and Processes – Granted Mandates – Reported key issues	273
Table 8-12 – Granted Mandates – Reported key issues – Cluster analysis	274
Table 8-13 – Granted Mandates – Proposed top action items	275
Table 8-14 – Granted Mandates – Proposed top action items – Cluster analysis	276
Table 8-15 – Long Term Orientation – Reported key issues.....	278
Table 8-16 – Long Term Orientation – Reported key issues – Cluster analysis.....	279
Table 8-17 – Long Term Orientation – Proposed top action items.....	281
Table 8-18 – Long Term Orientation – Reported top action items – Cluster analysis.....	282
Table 8-19 – Interactions between aspects	284
Table 8-20 – Interactions between aspects – Cluster analysis	286
Table 8-21 – Importance of key aspects – Cluster analysis.....	287
Table 8-22 – Further reported issues – Findings and action items.....	291
Table 8-23 – Further reported issues – Cluster analysis.....	292

Abbreviations

BAU	B uilding A utomation; one of the business units of the Building Technologies division of Siemens, offering integrated management stations for command and control
BRIC	B razil, R ussia, I ndia and C hina
BT	B uilding T echnologies; a Siemens division within the industry sector, comprising the business units BAU, FS, CPS and SES.
CCTV	C losed- C ircuit T ele V ision, video cameras and respective monitors within a closed system, typically used in higher security areas, shopping malls etc.
CE	C orporate E ntrepreneurship, please compare section 2.1.1
CPS	C ontrol P roducts and S ystems, one of the business units of the Building Technologies division of Siemens, engaged in the heating, ventilation and air condition business (compare HVAC)
CxO	Summary term for the board level of a firm, comprising its chief officers CEO , CFO , COO etc.
EO	E ntrepreneurial O rientation, please compare section 2.1.8
FS	F ire S afety; one of the business units of the Building Technologies division of Siemens, offering products and solutions in fire detection and fire extinguishing
HQ	H eadquarters, referring to the organisational parts carrying the overall business responsibility
HRM	H uman R esource M anagement
HVAC	H eating, V entilation and A ir C onditioning. Term is used for the respective industry and its products.
KPI	K ey P erformance I ndicator; like turnover, return on sales, or profit
KR	Indicating organisational function from South Korea
MNC	M ultinational C orporation, please see MNE
MNE	M ulti N ational E nterprise, referring to firms performing business in more than one country.
PEP	P roduct E volution P rocess, the specific process implementation of product lifecycle management (PLM) of the Siemens division Building Technologies
PLM	P roduct L ifecycle M anagement, one of the core business processes (please compare Figure 4-2 in section 4.2)
PM	P roduct M anagement, or P roduct M anager
SCM	S upply C hain M anagement, one of the core business processes (please compare Figure 4-2 in section 4.2)
SES	S ecurity S olutions; one of the business units of the Building Technologies division of Siemens, offering integrated management stations for command and control
SMART	S imple, M aintenance-friendly, A ffordable, R eliable and T imely. Siemens definition for products aimed at lower end world markets (please compare chapter 4).
SME	S mall and M edium sized E nterprises. European Commission defines a company up to 250 employees and EUR 50 million turnovers as an SME (2003/361/EC).
SP	S ecurity P roducts, part of the business unit organisation Fire Safety
VAP	V alue A dded P artner: partners the Fire Safety business unit sells its products to when not delivering turn-key solutions directly to end customers

Glossary

Corporate Entrepreneurship	“Corporate entrepreneurship is the process whereby an individual or a group of individuals, in association with an existing organization, create a new organization or instigate renewal or innovation within that organization” (Sharma and Chrisman 1999:16)
Corporate Venturing	“Corporate venturing refers to corporate entrepreneurial efforts that lead to the creation of new business organizations” (Sharma and Chrisman 1999:17)
Cynicism	"An attitude characterized by frustration, hopelessness, and disillusionment, as well as contempt toward and distrust of business organisations, executives, and other objects in the workplace" (Andersson 1996:1395).
Diversity	The “condition of having or being composed of differing elements, [...] especially the inclusion of different types of people (as people of different races or cultures) in a group or organisation.” (Merriam Webster Dictionary, last accessed 2.2.2011).
Decisiveness	“Having the power or quality of deciding”, and deciding in a “resolute and determined manner” (Merriam Webster Dictionary, last accessed 2.2.2011)
Engagement	“Personal engagement is the simultaneous employment and expression of a person's "preferred self" in task behaviors that promote connections to work and to others, personal presence (physical, cognitive, and emotional), and active, full role performances.” (Kahn 1990:700)
Entrepreneurship	<i>Please compare the many facets of entrepreneurship as outlined in the literature review in chapter 2, and the understanding of the interview participants as documented in Table 8-5</i>
Entrepreneurial opportunities	The situations in which new goods, services, raw material, and organisation can be introduced and sold at greater than their cost of production. (Casson 1982, Venkataraman 1997)
Firm performance	Represented by sales growth, market share and profitability (Lumpkin and Dess, 1996a), in relation to competitors.
Granted mandates	Authority to decide on firm resources, investments, served markets etc. as granted by MNE headquarters management to subsidiary managements. Granted mandates may be defined by -> <i>subsidiary roles</i>
Innovativeness	Refers to “the seeking of creative, unusual, or novel solutions to problems and needs.” (Ireland, Kuratko and Morris 2006:26)
Institutional duality	Perceived level of conflicts created by different requirements for an entity by local law, regulations and rules on one side; and international law and regulations including company guidelines.
Intrapreneurship	Comprises three specific aspects within an existing organisation: (1) the individual characteristics of the entrepreneur; (2) the different types of new venture formation, emphasizing aspects of company fit and enabling functions; and (3) organisational aspects of such entrepreneurial activities in general. (Antoncic and Hisrich 2003)
Legitimacy	“Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions.” (Suchman 1995:572) Primary use in this thesis: the legitimacy of executives to run an entity / the business of an entity as perceived by the respective employees.
Long-term	“[T]he tendency to prioritize the long-range implications and impact of

orientation	decisions and actions that come to fruition after an extended time period” (Lumpkin, Brigham and Moss 2010:241)
Organisations and Processes	Referring to all structural arrangements of the firm potentially affecting entrepreneurial activity.
Performance	<i>see firm performance</i>
Proactiveness	“Proactiveness is concerned with anticipating and then acting in light of a recognized entrepreneurial opportunity. Proactiveness demands that firms tolerate failure and that employees be encouraged to persevere in their efforts to exploit opportunities that can be the source of innovation, competitive advantage, and first-mover benefits in marketplace battles.” (Ireland et al. 2006:26)
Risk	Risk reflects “the degree of uncertainty and potential loss associated with the outcomes which may follow from a given behaviour or set of behaviours.” (Forlani and Mullins 2000:309)
Risk-taking	“[T]he willingness to commit significant levels of resources to pursue entrepreneurial opportunities with a reasonable chance of failure” Ireland (Ireland et al. 2006:26)
Subsidiary	“[A] semi-autonomous entity [of an MNE] with entrepreneurial potential, within a complex competitive arena, consisting of an internal environment of other subsidiaries, internal customers and suppliers, and an external environment consisting of customers, suppliers and competitors”(Birkinshaw, Hood and Young 2005:227)
Subsidiary initiatives	Initiatives taken by the subsidiary management towards changed or new business to strengthen the position of the subsidiary within the internal MNE context (internal markets) as well as on the external markets.
Subsidiary role	The perceived role of the subsidiary based on the four roles of national organisations as proposed by Bartlett and Ghoshal (1989): Black Hole, Strategic Leader, Implementer, or Contributor. Roles can be differently defined for elements of the value chain like manufacturing, R&D/PM and sales.

Abstract

Answering the many calls for more empirical research in the domain of corporate entrepreneurship, this thesis presents an exploration of potential activities apt to foster entrepreneurial activity in Siemens AG. Siemens is widely considered an industrial conglomerate and one of the oldest companies among the top global players, ranked 40th in the Global 500 Fortune list of 2010. In 2009, Siemens' top management identified a severe lack of entrepreneurship throughout the company as a critical issue, and as a new key action in the strategic planning of 2010 to 2014. In this context, this thesis addresses the question: "How can entrepreneurship be strengthened within local Siemens organisations?" Based on a preliminary literature review and pilot study, the research focusses on aspects of structural arrangements, temporal orientation, and mandates granted to local subsidiaries and their relationships in fostering local entrepreneurship among the multinational's subsidiaries.

Within Siemens, three cases were investigated. First, the acquisition and integration of Shinwha Electronics in South Korea, explored in the pilot study, was further analysed. A business venturing endeavour explicitly declared as "entrepreneurial", sponsored by the top management and taking place entirely in the Siemens existing organisation of Fire Safety was taken as the second case. The carve-out of the security business – consisting, significantly, of two "failed" acquisitions – was selected as the third case. These three cases represent a unique combination: the first case revealed differences in entrepreneurial behaviour by contrasting existing Siemens entities with the entrepreneurial acquired firm; the second case was informative about "genuine" entrepreneurial activity taking place entirely within the Siemens entity; and the third case illustrated the limitations to business opportunity recognition and exploitation in the Siemens context.

In the Siemens context, the findings identified five specific areas of practice that were key to fostering or impeding corporate entrepreneurship: (1) a weak emphasis on business innovations and opportunity recognition on the sales side, (2) the insufficient scope of current subsidiary mandates, (3) the need to extend the established Siemens culture of mature, well specified processes of business exploitation to exploration, (4) a revised set of criteria used by human resources in recruitment, promotion, training and rewards, and (5) a greater emphasis on long term orientation and management decisiveness. Contributions to theory include the extension of existing conceptual models on corporate entrepreneurship to offer a more complete picture of factors affecting corporate entrepreneurship at different levels of organisation within conglomerate multinational enterprises.

Acknowledgements

First of all, my thanks go to my doctoral supervisor Sara McGaughey. She provided me invaluable guidance through the realms of academic research and outstanding support in improving my work. The created atmosphere of trust and inspiration was essential for me to succeed in this challenging endeavour. Without her prodding and provoking me into new areas of thoughts, this thesis would not have been possible to write.

I also wish to thank the co-advisor of my dissertation, Marina Biniari, who repeatedly dedicated her time to the review of my thesis drafts. Furthermore, I am grateful for all the valuable knowledge conveyed in the research seminars at Strathclyde University and for the support of the administrators and directors of postgraduate research students in the Department of Management.

This study would not have been possible without the support of practitioners and the provision of the empirical data. I am particularly thankful to all my interview partners at Siemens AG who dedicated their time and knowledge to this dissertation. Furthermore, the many discussions with friends, inside and outside the firm, helped significantly to clarify and evolve particular issues within the dissertation.

Finally, my thanks go to my family for the steady encouragement and the acceptance of dedicating almost all my weekends in the last three years to researching and writing this thesis.

“Modern companies must survive in a fast-paced, highly threatening, and increasingly global environment. [...] Companies find themselves having to continually redefine their markets, restructure their operations and modify their business models.” (Morris, Kuratko and Covin 2008:iii)

1. Introduction

This introduction chapter outlines the foundations, structure, targets and main outcomes of this thesis. Section 1.1 addresses the overall focus of the thesis and the personal and firm context in which it was carried out. The purpose of the research, the research question and its relevance is depicted in section 1.2, followed by the description of the overall process of this doctoral study, its elements and main deliveries in section 1.3. Key research findings and contributions to firm practice and theoretical knowledge are summarised in section 1.4. Finally, the structure of the thesis is described in section 1.5.

1.1 Overall focus and context of this thesis

When looking at corporations from a life cycle perspective, firms are born, grow up to maturity, but sooner or later stagnate in their activities, and finally decline and die (Hoy 2006). From a macro economic point of view, these cycles of birth and death of companies can be interpreted as an ever ongoing and even required process of rejuvenation. But for the stakeholders of a specific firm, such a stagnation, decline and death could mean a partial or complete loss of respective stakes. Entrepreneurship¹ theory and practice was initially focussed on identifying and explaining aspects and mechanisms primarily related to the birth and growth of new firms, and most of its research is still predominantly occupied with the nascent, independent entrepreneur starting a new business. Researchers in the specific domain of corporate

¹ The term “entrepreneurship” is derived from the French verb *entreprendre*, meaning “to do something” or “to undertake.” Compare <http://www.econlib.org/library/Enc/Entrepreneurship.html> - last accessed in December 2009

entrepreneurship² set out in recent decades to investigate activities in innovation, corporate venturing³ and strategic renewal to sustain competitiveness in established firms and to prevent stagnation, decline and death.

Within this context, this thesis examines such phenomenon of corporate entrepreneurship within Siemens AG to derive knowledge apt to strengthen the sustainability of the firm in practice, and to contribute to respective theory in the context of comparable multinational enterprises (MNEs). Siemens AG – founded in 1847 as Siemens & Halske AG by Werner von Siemens – represents today one of the oldest companies among the top global players⁴. Widely considered an industrial conglomerate, Siemens is active in three specific business fields: the generation, transmission and distribution of electrical energy; diagnostic and therapeutic products and solutions in healthcare; and industrial manufacturing, transportation, building automation and lighting systems. Especially in the five years prior to this thesis, the firm showed significant symptoms of business stagnation by weak business performance⁵ and a huge bribery scandal⁶ indicated severe shortcomings in company guidance. As a consequence, key company managers including the chairman and the CEO were replaced in 2007. A similar development of turnover

² Corporate entrepreneurship is “the process whereby an individual or a group of individuals, in association with an existing organization, create a new organization or instigate renewal or innovation within that organization” (Sharma and Chrisman 1999). Please see the glossary for the definition of key terms.

³ Corporate venturing “refers to corporate entrepreneurial efforts that lead to the creation of new business organizations” (Sharma and Chrisman 1999:17)

⁴ Ranked 40th in the Global 500 Fortune list 2010 (ranking is done by turnovers). A more detailed description of the company is provided in chapter 4.

⁵ When comparing share price developments between 2003 and 2008 (end of year), Siemens share price declined by 17.7%, having comparable firms like ABB (+148%), Alstom (+153%), Emerson (+13%), or Schneider (+2%) performing significantly better (German stock index DAX increased by 19.7% over the same period)

⁶ Siemens used a slush fund of more than €1.3bn to win overseas contracts in telecom and power business from 2001 to 2007. By the end of 2008, the case was settled with involved authorities at a total cost of around US\$ 2.5bn. Further compensation payments to competitors are expected, making the case the biggest bribery scandal in history. Compare <http://www.guardian.co.uk/business/2008/dec/16/regulation-siemens-scandal-bribery>

stagnation, decreased profitability and repeated top management exchange took place in the Siemens business unit Fire Safety⁷ in which I have been working since 1988.

In this climate of crisis and change, I was appointed integration manager for the acquired Shinwha Electronics⁸ in South Korea in 2008. Unfortunately, the acquisition and integration of two similar companies⁹ – also privately owned before and perceived as highly entrepreneurial and profitable – into the Siemens conglomerate was finally judged by the managers who were involved at the time as failures. This constellation of business stagnation at Siemens, failed integrations of acquired companies, and the imminent endeavour of undertaking another comparable firm integration led to the idea of carrying out a doctoral thesis in parallel to my work as integration manager. The first target was to identify relevant firm performance levers through a pilot study based on a single case study of the Shinwha integration (please see Appendix B for the summary). As one of the main outcomes, this pilot study confirmed the relevance of entrepreneurial activity for achieving firm performance in the researched context and, especially, a significant gap of such activity when comparing the involved Siemens entities with Shinwha Electronics.

1.2 Research purpose, research question and aspects of relevance

Independent from, but in parallel to the pilot study research, the Siemens top management identified at the start of 2009 a severe lack of entrepreneurship in the company as an important issue, thus defining the strengthening of local entrepreneurship¹⁰ as a new key action item in the strategic planning of Siemens AG for 2010 to 2014. By combining the aims of this Siemens initiative with the results from the pilot study, it was decided to focus the main study entirely on aspects of entrepreneurship, and the derivation of potential activities to foster it. The relevance of entrepreneurial orientation and behaviour for delivered firm performance – and thus for firm survival in the long run – has been confirmed by many studies and in different contexts already

⁷ Compare chapter 4 for a detailed description of the organizational structure, business focus and history. Respective business figures are classified as confidential and not cleared for publication here.

⁸ As described in detail in section 4.5. The take over took place 1st of May 2008.

⁹ Bewator Ltd., Sweden, 2005; and iMetrex Ltd., India and Ireland, 2007

¹⁰ The initiative is combined with a decentralisation of global headquarter functions of businesses, residing today almost exclusively in Germany. This re-localisation of headquarter functions towards the main global centres of the respective businesses led also to a focus on “local” entrepreneurship, even if the concrete business responsibility may remain global.

(e.g. Covin and Slevin 1990, Zahra 1993b, Zahra and Garvis 2000, Lumpkin and Dess 2001, Birkinshaw et al. 2005, Kuratko, Covin and Garrett 2009, Rauch et al. 2009). Taking this focus and combining it with the strategic initiative of Siemens AG the research question of the main thesis was defined as:

RQ: “How can entrepreneurship be strengthened within local Siemens organisations?”

The relevance of doing such research was also supported by the emerging status of the domain of corporate entrepreneurship research and practice as identified by the literature review in chapter 2. The academic field of corporate entrepreneurship is perceived as not yet providing solid and integrated theory applicable for the identification and implementation of such fostering activities in practice.

The research scope was further refined based on the results of the pilot study (please see Appendix B), the decomposition of the main research question, and the subsequent literature review. This led to an organising framework of aspects built around the selected three core elements to be researched: (1) structural arrangements of the firm affecting entrepreneurial activity (i.e. organisational setups and processes), (2) granted authority by MNE headquarters management to local entities to decide on firm resources, investments, served markets etc. as granted to subsidiary management (i.e. granted mandates), and (3) time orientations towards prioritizing decisions and actions that come to fruition after an extended time period (i.e. long term orientation)¹¹. This combination of elements was identified as most relevant in the researched company context, while also addressing significant knowledge gaps in the extant literature. Related to this element selection, a set of research sub-questions was derived and further developed, expanded and investigated in the field.

The main aim of this study was, and is, to inform the practice of entrepreneurship in the context of the researched Siemens organisations, with findings transferable to comparable firm environments. The research employed an embedded case study design, in which the entrepreneurial behaviour of three local entities within the larger Siemens multinational enterprise was compared. The unit of analysis – or that which was compared – was the local entity. However, the study employed multiple levels of analysis, considering, for example, the impact of individuals’ characteristics, local entity characteristics, Siemens-wide systems and processes, and the broader environment. Findings related to the fostering of corporate

¹¹ Please compare the glossary for the definition of key terms.

entrepreneurship were further developed into concrete propositions for action within Siemens. To maximise the probability of the implementation of these proposals, per-se, and the potential for leverage effects, it was also important to embed the proposed activities into already existing or planned initiatives, processes and structures as far as possible.

As contributions to theory, the aim of the study was to discuss existing theory in the context of the researched cases, to comment on the relevance, appropriateness and applicability of existing concepts and frameworks, and to identify possible transferability of the findings beyond Siemens AG towards similar constellations of globally dispersed firms. Furthermore, frameworks and relationships between various factors affecting corporate entrepreneurship were derived from the research findings to further inform theory building beyond this study. No comparable studies in this field could be found, suggesting that this study of corporate entrepreneurship represents a unique combination of aspects in the configuration of a multinational firm with its headquarters and subsidiaries.

1.3 Structure and main steps of the research

The initial aim of the thesis – and thus of the first literature review and the subsequent pilot study – was the field of mergers and acquisitions, with a specific focus on the acquisition of a highly entrepreneurial small company by a conglomerate like Siemens, and key mechanisms and especially involved factors towards subsequently achieved firm performance. More precisely, the first literature review (please see element ‘a’ in Figure 1-1; the figure provides the summary on process steps and deliveries of the overall study) was focussed on subsequent firm performance as measured by sales growth, market share and profitability of acquired companies in the context of multinational firms like Siemens as serial acquirers. Out of the review, a conceptual framework towards factors identified as potentially most relevant for delivered firm performance was derived to inform the subsequent pilot study research.

A core element of the pilot study (b) was the field research using the Shinwha Electronics acquisition and integration as a single case, paralleled by my tasks as integration manager for this entity. Out of the field research results, a set of ten relevant factors was identified and aggregated into an interaction model linked to resulting firm performance (please see Appendix B for the summary). One of the elements showing large discrepancies between Siemens entities and Shinwha turned out to be the involved entrepreneurial orientation. The start of a strategic initiative at Siemens AG towards “fostering entrepreneurship in local Siemens entities” in parallel to the pilot study proceedings led to the decision to focus the main study on aspects of

involved corporate entrepreneurship, and the identification of activities most apt to foster entrepreneurship in local Siemens entities like the integrated Shinwha Electronics.

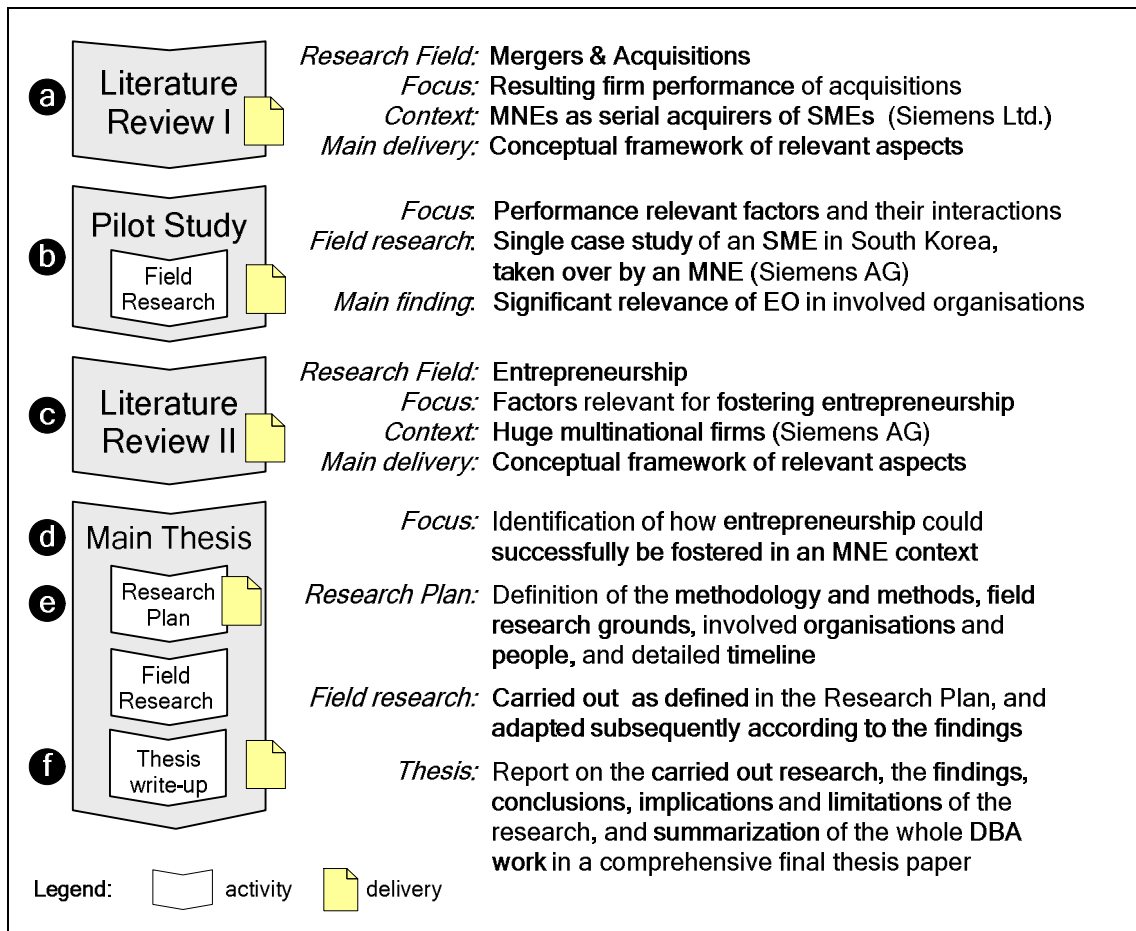


Figure 1-1 – The main study in the context of all carried out work packages and deliveries

Therefore, the second literature review (c) was focussed on relevant elements in the domains of entrepreneurship research, covering corporate entrepreneurship (or intrapreneurship) as well as many basic dimensions like entrepreneurial orientation (please compare chapter 2 for the full review). Again, a conceptual framework towards factors identified as potentially most relevant for fostering entrepreneurship in local entities of multinationals like Siemens was derived (as contained in Appendix C) to inform the subsequent main study research focus. As the first step of the main thesis (d), the literature review results and the previous findings from the pilot study about the feasibility of field research within Siemens entities were used to derive detailed research questions, and set up a detailed research plan (e). As the key elements of it, methodology and methods to be applied, and potential cases most apt for the planned research were derived, and a set of detailed research questions was deduced and further developed into a questionnaire structure (as contained in Appendix G). The interview participants were identified

(please compare Table 3-5 in section 3.5, and Appendix E), and a detailed time line for the field work was set up. The field research took place primarily as planned, with 15 semi-structured interviews totalling more than 23 hours (please compare Appendix D for more details), and several iterations on secondary data identification.

The main thesis in hand (f) reports on the research, the findings, conclusions, implications and limitations of the research, and summarises the whole DBA work in a comprehensive final paper. The main findings and contributions identified from this process are summarised in the next section. The further structure of the rest of this thesis is explained in section 1.5.

1.4 Study summary, findings and obtained contributions to knowledge

Since this study was carried out in two steps, the reported overall findings and contributions to knowledge will be preceded by a short summary of the pilot study and its outcome representing the first phase (a more comprehensive summary on the pilot study can be found in Appendix B).

1.4.1 Pilot study

The pilot study investigated the acquisition and integration of Shinwha Electronics in South Korea by the Siemens business unit Fire Safety in the form of a single case study. This research focus was especially motivated by the failure of two comparable acquisitions and integrations by the same business unit in previous years. The research was framed on the theoretical side by the fundamental paradox of ever increasing transaction volumes in international mergers and acquisition despite a quite constantly reported majority of these transactions failing to deliver added value. The main aim of the study was to identify the relevant factors for delivering firm performance by the new subsidiary created from the acquisition, in the given context of multinationals repeatedly buying small to medium sized companies (also referred to as serial acquirers).

Informed by a conceptual framework derived from earlier literature, performance relevant factors were identified and also analysed for potential interactions. A framework identifying relationships or interactions was developed from the data, comprising four clusters of closer interactions, and a set of interactions among these clusters. As one of the key interactions, a significant and mutual relationship between entrepreneurial orientation (EO) and resulting firm performance in the researched context was identified, thus confirming a similar finding of a most recent Meta study on EO and business performance research (Rauch et al. 2009). Furthermore, the pilot study revealed severe differences in entrepreneurial orientation between

the employees in the acquired company and the researched Siemens organisations. In fact, it turned out that these differences in exercised entrepreneurship could be interpreted as the main reason for the acquisition of Shinwha, since the development of a comparable business of Siemens, started in 2000, clearly failed. Based on these results, it was decided to focus the main study on the domain of entrepreneurship, with the potential fostering of activities for entrepreneurship in local Siemens entities being the expected main contribution to firm practice.

1.4.2 Main thesis

Within the main study, in total three cases were investigated. As the first case, the firm acquisition and integration in South Korea (already explored in the pilot study) was further analysed to gain insights from longitudinal, real-time research. A business venturing endeavour explicitly declared as “entrepreneurial”, sponsored by the top management and taking place entirely in the existing organisation of Fire Safety, was taken as the second case. And as the third case, the carve-out of the security business – consisting, significantly, of the two “failed” acquisitions (Bewator Ltd. in 2005 and iMetrex Ltd. in 2007) was selected. These three cases represent a unique combination: the Shinwha case revealing the differences in entrepreneurial behaviour in contrast with the Siemens entities; the second case informing on “genuine” entrepreneurial activity taking place entirely within the Siemens entity; and the carve-out case illustrating the limitations to business opportunity recognition and exploitation in the Siemens context.

The case analysis was undertaken based on semi-structured interviews with function owners of key business processes in the involved entities, some observations, and significant amounts of secondary data. Further dimensions beyond the given research focus, revealed as being relevant by the case data, were included in the findings report and the resulting discussion. Already existing firm initiatives or activities apt to support derived subsequent actions to foster entrepreneurial behaviour were specifically considered within the phases of data gathering, discussion and derivation of implications to increase the probability of successful implementations.

Contributions to practice

Contributions to practice have been derived in two fields: first as a set of activities apt to foster entrepreneurship within the Siemens AG entities as researched; and, second, identification of the degree of transferability of this created knowledge to comparable firms.

Contributions to the practice of involved Siemens entities can be grouped into five specific areas. First, the current company vision, mission and overall strategy was found to address aspects of new business venturing based on business innovations and respective opportunity recognition on the sales side rather weakly. Second, granted subsidiary mandates are currently too limited and should be expanded, in the context of the implementation of the initiated systems house approach and respective entity certifications, towards the set-up of dispersed headquarters responsible for specific products and solutions globally. Such a transformation is expected to enable more local new business venturing activities based on the direct reinvest of local profits, thus representing an extended delegation of business competence as well as providing required “seed money” from operations. Third, the well-established culture of having mature processes in business exploitation should be expanded towards candid entrepreneurial opportunity recognition by defining and implementing a respective management process. Fourth, fostering activities are seen as required in the area of human resource management. Long term achievements, substantial business domain knowledge, and entrepreneurial notion and capabilities have to be more influential in employee selection, training and promotion in future. Applied incentive systems should provide significantly more stimulation for pursuing entrepreneurial initiatives especially with extended time periods of achievement judgment, and reduced relevance of targets potentially hindering entrepreneurial behaviour (like short term profit maximisation goals). Finally, managerial practice has to integrate and facilitate the intended entrepreneurial spirit in daily life. More emphasis has to be given to longer term target definitions, distinct business priorities and thus exercised management decisiveness.

These implications for Siemens practice were subsequently reviewed towards a further transferability to firm practice in general, and systematic limitations of such “natural generalization”. The specific industrial environment providing investment goods, and a prevailing process orientation forced by standards and customer expectations, were found as key characteristics of the Siemens’ context that will affect the transferability of the findings.

Contributions to theory

Contributions to theory were derived in three distinct fields. First, the research allowed for judgment of the applicability and completeness of existing theory through the examination of previous study findings and respective models and theory. Second, a model of interactions among factors relevant for entrepreneurial activity was derived and interpreted towards specific multi-factor patterns (or configurations; Miller 1986, Miller 1996). Third, these patterns were integrated within the CE model of Kuratko, Hornsby and Goldsby (2004), thus revealing potential mechanisms, so far not described, for creating inertia to entrepreneurship within the firm, and related effects throughout the vertical layers of organisational entities existing in huge conglomerates such as Siemens AG. These contributions will be described in more detail in the next paragraphs.

Knowledge related to the applicability and completeness of existing theory was especially obtained for the chosen research focus on the phenomenon of corporate entrepreneurship in a vast multinational entity. The concept of entrepreneurial orientation, and especially the aspect of risk (taking risk or being risk-averse), proved to be a key element. The strongly linked aspects of dealing with uncertainty, being decisive and obtaining authority to decide, however, would deserve a more inclusive theory to comprehensively explain the phenomenon observed and interactions of relevant factors in practice. The integration of opportunity recognition (or creation), exploration, and subsequent exploitation into a description of entrepreneurial process that also contained key aspects of relevant environmental factors was found to be highly applicable, greatly facilitating interpretations and explanations. However, no such process integration could be found in existing literature.

Furthermore, two specific multi-factor patterns emerged from the field research. As a first pattern, a dominant “firm-inward oriented” behaviour was found, based on the prioritization of business exploitation, doing primarily incremental technical innovations within existing product and market approaches, and applying well defined processes. As a second pattern, identified specific factors hindering entrepreneurial activity were integrated in the model of CE as proposed by Kuratko et al. (2004). It combines the cited effects of inward orientation with short-term orientation as driven by incentive systems, employee selection and career programs, significant risk avoidance towards entrepreneurial endeavours, and entrepreneurial indecisiveness. By adding the missing recognition and reward mechanisms for entrepreneurial

endeavours, a specific pattern potentially inert to entrepreneurial strategies as well as to the entrepreneurial outcomes, emerged.

Last, the case findings indicate that conglomerates like Siemens consist of a layered structure of firm entities (e.g. sectors, divisions, business unit) – as created by its internal entities arranged in tiers – creating an additional dimension of factor interactions. Current models of corporate entrepreneurship, however, typically comprise simply an abstraction of “the firm” as a whole. The extension of these models would allow for further explanations of entrepreneurial inertia on the lowest layer of the structure of a conglomerate. This finding could also be linked to the research on similar structures in large governmental organisations, and especially the investigation of aspects of persistent bureaucracy. Furthermore, potentially important effects of replicated principal-agent effects throughout the various organisational layers could be researched in such an expanded model.

1.5 Subsequent structure of this thesis

Informed by the research domain and the research question of the study as outlined in this chapter (element a; please compare Figure 1-2 hereafter for the resulting overall structure) and the pilot study results (b), chapter 2 provides a literature review of research, theory and findings from practice in key areas of entrepreneurship identified as relevant for the given context (c). The derived conceptual framework comprising the aspects selected for my field research can be found in section 2.3 (d). This framework and the selected aspects informed the subsequent research design and especially the case selection and a set of derived research sub-questions (e, please see chapter 3 on method). Thereafter, the case descriptions (f, chapter 4) are followed by the case findings reported along the dimensions of the conceptual framework as well as additional unanticipated findings (g, please see chapter 5). The discussion on the research results (h) and recommendations for specific actions can be found in chapter 6. Implications for practice in Siemens entities, firm practice in general, and towards theory (i) are drawn in chapter 7. Finally, a restatement of the research and its results, a summary on achieved contributions to knowledge, considerations on limitations of the research, and possible directions for future research are presented in chapter 8 (k).

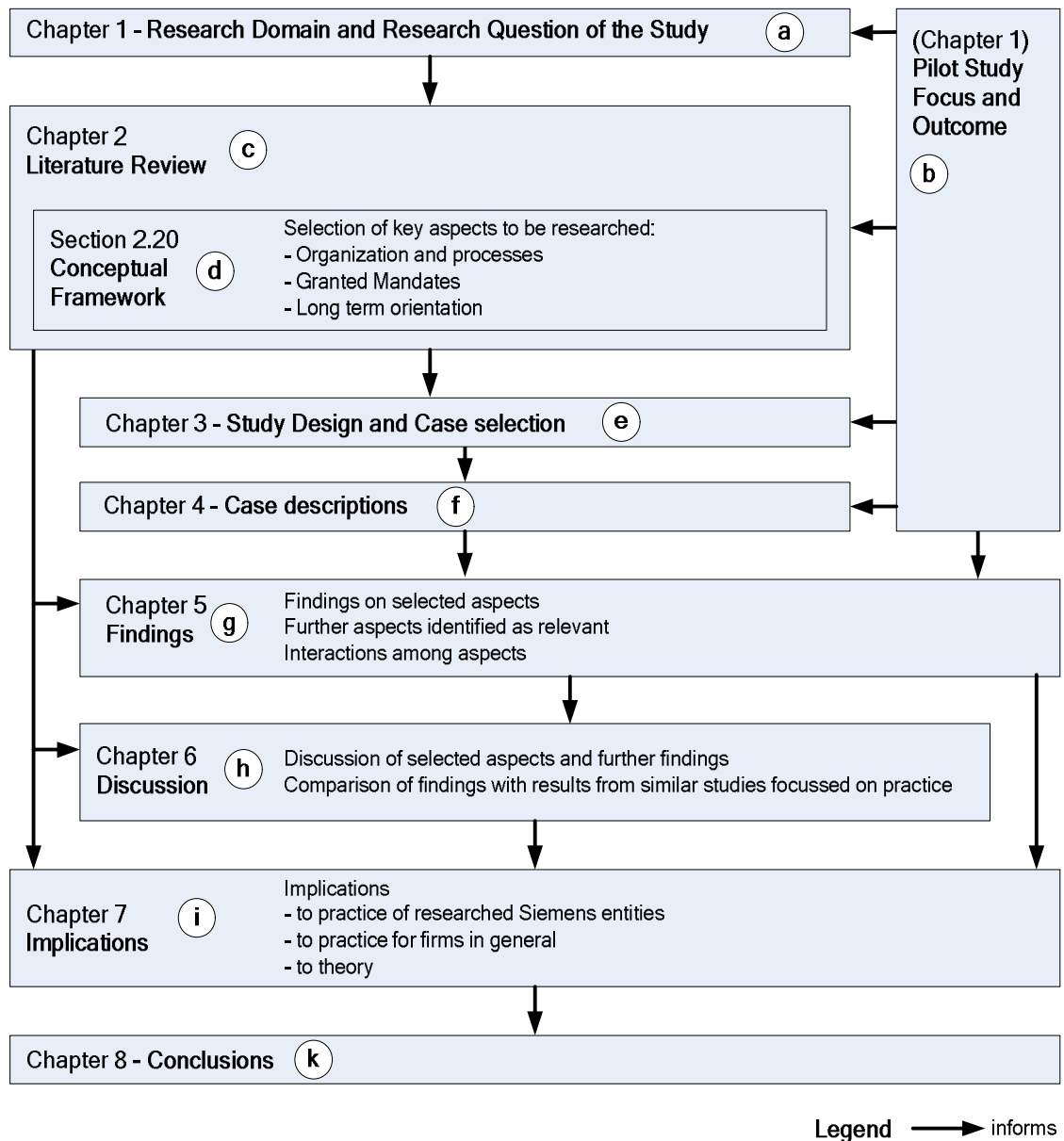


Figure 1-2 – Reporting sequence of key aspects throughout the chapters

2. Literature Review

The first chapter gave a brief overall summary of this study. Chapter two provides a detailed look at existing literature relevant for answering the research question, and the subsequent derivation of a conceptual research framework and a set of research sub-questions. The review is especially guided by the following two questions: What are the relevant factors and mechanisms for established multinational firms and their subsidiaries to behave entrepreneurially? And what respective theoretical concepts and findings from practice relate most closely to the research objective here?

The literature review started with the decomposition of the elements of the research question, and the identification of fitting findings from the pilot study phase to create an initial map of relevant aspects to be covered. To avoid missing important concepts in entrepreneurship relevant for answering the research question, main theories and current main research streams throughout the whole domain of entrepreneurship were thoroughly identified and summarised in a second step into an organising framework. The detailed reporting of these first two steps of the analysis has been separated into Appendix C to increase the readability of the main thesis here.

Out of this overall set of main theories, current research streams, and the initial map of aspect, the elements relevant to answer the given research question were derived and argued for (please see section 2.1 and Figure 2-2). The subsequent reviews of the these aspects are given in sections 2.1.1 to 2.1.18 and

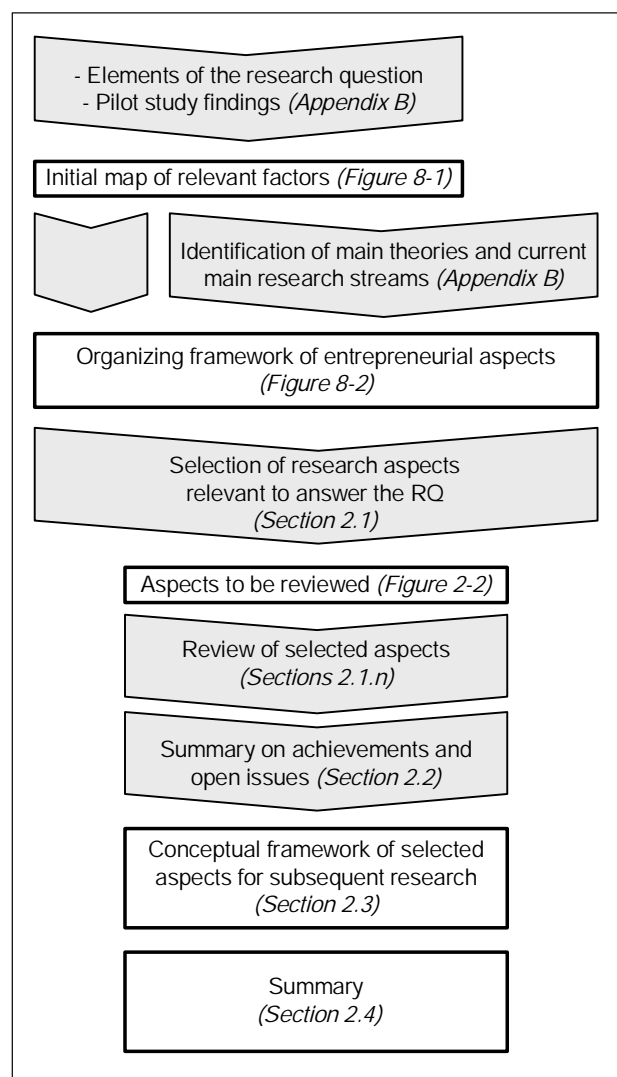


Figure 2-1 - Elements and workflow of the review

include elements of theory (definitions, concepts, schools of thought, etc.) as well as practice, and the identification of potential inconsistencies and gaps in the literature. An overall summary on general achievements and open fields in entrepreneurship research is provided in section 2.2. Out of all these elements, a conceptual framework of aspects seen as most relevant and apt to answer the research question was derived (please see section 2.3).

2.1 Relevant research fields to be reviewed in detail

As outlined in the introduction, an organising framework of all potentially relevant elements, theories and main research streams throughout the whole domain of entrepreneurship was set up first (please see Appendix C and Figure 8-2 within for all the details). To derive a set of aspects potentially most relevant for answering the given research question and also allowing for a feasible study, this broad field was required to be narrowed down. This selection of aspects is argued in detail hereafter, and is based on the overall structure of elements as given in Figure 8-2.

Since this study is rooted in the context of established companies, the concept of corporate entrepreneurship or strategic entrepreneurship (also referred to as intrapreneurship or corporate venturing; represented by aspect n in Figure 2-2 providing the summary) was taken as the starting point for the review, including also aspects of involved firm structures (r, please see sections 2.1.1 to 2.1.4). New venture creation in MNEs (part of aspect o; but excluding the not involved aspects of independent start-ups, family businesses, “born globals” and SMEs) was to be analysed towards obtained venture performance and growth (p, please see section 2.1.5). Since Siemens consists of a huge network of headquarters and globally dispersed subsidiaries, the aspects of internationality (or transnationality; e and s) and thus the growing research on subsidiaries of MNEs had to be subsequently discussed in sections 2.1.6 and 2.1.7. The aspect of firm resources focussed on employees (r) was covered in several other contexts (especially by the sections on internationality and thus cultural diversity, and by employee capabilities), whereas the venture capital aspect was seen as less relevant in the researched Siemens context (but discussed in the context of subsidiary initiatives).

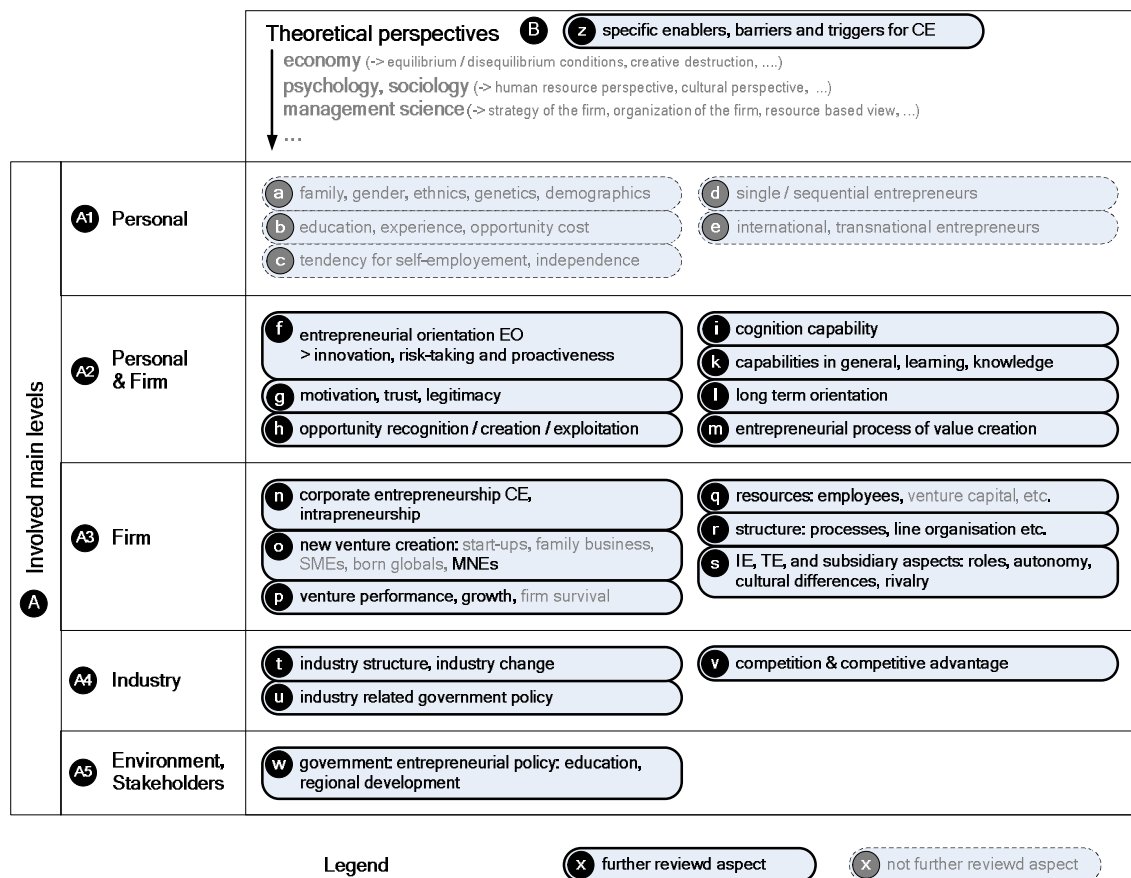


Figure 2-2 – Aspects reviewed in detail

A key foundation of this research domain is certainly the concept of entrepreneurial orientation EO in its personal and firm context (f), and linked aspects of motivation, trust and legitimacy (g; please see sections 2.1.8 to 2.1.11). The review of related required capabilities including cognition (i) and respective knowledge and learning (k) are contained in section 2.1.12. These aspects were reviewed with a focus on the “corporate” entrepreneur, omitting the aspects of self-employment and independence (c) or personal opportunity cost (part of b), since these are specifics of independent entrepreneurs. As a further element relevant for entrepreneurial endeavours on a personal and firm level, involved aspects of long term orientation (l) were reviewed (please see section 2.1.13). Linked to it, and representing also a core element of entrepreneurship theory, opportunity creation, recognition and exploitation (h) and the closely linked perspective of respective entrepreneurial processes (m) were considered (please see section 2.1.14).

Relevant environmental aspects towards fostering entrepreneurship in MNEs were also reviewed: facets of industry structure and industry change, related effects from competitive

advantage theory (t and v; please see section 2.1.15), and governmental policy in specific industry fields (u) with an emphasis on entrepreneurial education and regional development (w; please see section 2.1.16). The vast area of theoretical perspectives (B) comprising underlying research domains was especially considered towards studies explicitly focussing on specific enabling factors, barriers and triggers for corporate entrepreneurship (z, please see section 2.1.17). And finally, comparable studies on fostering entrepreneurship in practice were reviewed, as depicted in section 2.1.18.

2.1.1 Corporate entrepreneurship

Burgelman (1983a, 1984, 1985b, 1985a) can be seen as the founder of the research stream of corporate entrepreneurship CE, defining entrepreneurial activity as a natural and integral part of the strategic process in large, established firms “[...] by extending the firm’s domain of competence and corresponding opportunity set through internally generated new resource combinations” (1984: 154). Zahra proposed an expansion of the definition by including the aspect of strategic renewal: “Corporate entrepreneurship refers to formal and informal activities aimed at creating new business in established companies through product and process innovations and market developments. [...] Corporate entrepreneurship also entails the strategic renewal of an existing business” (1991: 262). The even more inclusive definition of CE by Sharma and Chrisman (1999:16) shall serve as the reference here: “Corporate entrepreneurship is the process whereby an individual or a group of individuals, in association with an existing organization, create a new organization or instigate renewal or innovation within that organization.” It thus comprises all activities of corporate venturing, strategic renewal, and innovation. However, authors still use a variety of other terms to refer to firm perspectives on specific entrepreneurial activities (like external or internal corporate venture, new venture creation, venture management or intrapreneurship) and there are many definitional ambiguities (Sharma et al. 1999). Following the definition above, CE is used here as representing all forms of entrepreneurial activity in established firms.

Studies using the CE label comprise many perspectives and hardly represent a consistent and well defined field of research. Several authors have complained about this significant heterogeneity of CE (Grégoire et al. 2006, Phan et al. 2009). A most recently developed framework trying to explain key mechanisms uses a vast set of 22 factors (Narayanan, Yang and Zahra 2009: 62). And “...there are still opportunities to introduce new theoretical perspectives and hence advance the field much further than we have heretofore seen” (Phan et al. 2009: 205). Looking at the “common denominators” of published CE studies, Burgers and Jansen (2008) found the three prevailing key dimensions of innovation, venturing and strategic renewal – thus

confirming the definition of Zahra (1991) as cited above. But throughout all CE articles, only the aspect of innovation seems to be shared constantly (Covin and Miles 1999: 47).

To further inform my study about findings relevant to foster corporate entrepreneurship within Siemens, proposed CE models are reviewed in more detail in the next section with a particular focus on firm strategy. The research stream on corporate venturing is reviewed in section 2.1.3, and specific aspects of the “intrapreneurs” are discussed in section 2.1.4.

2.1.2 Strategic entrepreneurship and proposed models of corporate entrepreneurship

Based on the definition of CE being an integral part of the strategic processes of a firm (Burgelman 1984:154) as one of the initiating thoughts, a research stream on “strategic entrepreneurship” (SE) emerging in recent years (Hitt et al. 2001, Kuratko, Ireland and Hornsby 2001, Ireland, Hitt and Sirmon 2003, Covin and Miles 2007, Ireland and Webb 2007b, Audretsch, Lehmann and Plummer 2009, Kuratko and Audretsch 2009, Schindehutte and Morris 2009, Hitt et al. 2011). Morris et al. (2008:194; cited in Kuratko and Audretsch 2009, and Ireland, Covin and Kuratko 2009) defined an entrepreneurial strategy of a firm “as *a vision directed, organisation-wide reliance on entrepreneurial behaviour that purposefully and continuously rejuvenates the organisation and shapes the scope of its operations through the recognition and exploitation of entrepreneurial opportunity*” (italics as given in the citation). Kuratko and Audretsch (2009:2) however argued that SE simply represents “the intersection of strategy and entrepreneurship”, and saw this as an emerging concept.

Content wise, the explanation of Covin and Miles (1999) of main strategic moves being closely linked to corporate entrepreneurship is much more informative even without applying the term strategic entrepreneurship there. The authors proposed an entrepreneurial relevance for four distinct strategic activities: (1) the sustained regeneration of the firm by continuously introducing new products and services or entering new markets; (2) the organisational rejuvenation by improving the competitive standing through altering internal processes, structures and capabilities; (3) strategic renewals by fundamentally altering how to compete in a specific industry regarding the markets and competitors; and (4) a domain redefinition by creating new product-market arenas not established so far at all. All four elements are seen as closely linked to respective concepts of competitive advantage like differentiation, cost leadership and quick response (Porter 1980, Porter 1985).

Looking at models trying to depict corporate entrepreneurship and related strategy more comprehensively, Guth and Ginsberg (1990) proposed one of the earliest frameworks integrating strategic management aspects into CE. In a given business environment as the arena, they argued for the strategic firm leaders with their characteristics, values, beliefs and behaviour driving the firm strategy and its structures, processes and beliefs (1990:7). Covin and Slevin (1991) linked firm performance to the construct of “entrepreneurial posture” that is characterised as firm, rather than individual, behaviour; thereby presenting an “organisational level” perspective. This entrepreneurial posture summarises all elements of entrepreneurial orientation EO (please compare section 2.1.8 for the detailed review on EO) but links it directly with investment decisions and strategic actions (1991:10). Thus, the key element in the model represents a mixture of the characteristics of entrepreneurial people – seen as existing on an organisational level by respective team characteristics – and the aspect of firm strategy. Furthermore, it is “generally argued that the structure of a firm follows from the strategy” (Morris et al. 2008:226), an assumption which is also reflected by most of the proposed CE models as discussed in subsequent paragraphs.

The most comprehensive CE-strategy model so far, by Ireland et al. (2009) – consolidated from the review of nine previously proposed CE models linked to firm strategy (Burgelman 1983b, Guth and Ginsberg 1990, Covin and Slevin 1991, Hornsby et al. 1993, Lumpkin and Dess 1996a, Floyd and Lane 2000, Kuratko et al. 2004, Kuratko et al. 2005b) – combined antecedents, elements and outcomes of corporate entrepreneurial strategy by considering organisation, top management and other employees in a recursively interacting network model. As a derived key implication for further research and practice, the authors suggested that ‘a bundle of “fits” [...] are necessary for CE success’ (2009:39). Such “bundles” (also referred to as “patterns” or “configurations”) of matching elements defining CE success or failure shall be a specific aspect considered in the research here, since fostering activities in practice can be expected to require whole sets of activities.

When comparing proposed generic models of corporate entrepreneurship integrating key aspects of firms and its subsidiaries (Burgelman 1983b, Guth and Ginsberg 1990, Covin and Slevin 1991, Lumpkin and Dess 1996a, Birkinshaw and Hood 1998, Covin and Miles 1999, Paterson and Brock 2002, Kuratko et al. 2004, Narayanan et al. 2009), there is no common set of proposed single elements identifiable, but at least a recurring set of major aspects: (1) external factors of the firm environment, (2) firm mission and strategy, (3) structural arrangements in

organisation and processes, and (4) manifold people-related aspects comprising elements of values, philosophy and culture, motivation and rewards, or granted autonomy and support.

By linking the first three aspects – firm environment, firm strategy and firm structures – four distinct structural configurations have been proposed as specifically relevant for explaining corporate entrepreneurship (Miller 1986, Miller 1996, Morris et al. 2008): a highly informal “simple” firm structure with power centralisation at the top, and low bureaucratization; a “machine bureaucracy” based on many formal rules, policies and procedures; a highly flexible “organic” structure with limited hierarchy and power decentralisation and prevailing in highly dynamic environments; and finally a “divisionalized” structure when looking at large conglomerates like Siemens. While a divisional structure was found as behaving highly bureaucratically as a whole, single divisions and its substructures may resemble many different structural types again (Morris et al. 2008). The configuration providing fewest stimuli for entrepreneurial activity seems to be the “machine bureaucracy” following primarily formal guidelines and plans, focussing on well established and controlled internal processes rather than on market developments, and concentrating power among top executives and process designers (Morris et al. 2008:226).

Looking finally at the manifold people related aspects, most CE models indicate the importance of the top management of a firm, especially in setting up and maintaining an entrepreneurial strategy and firm culture. The management itself is seen as driven by environmental factors of the respective industry, and also affected by the current firm strategy and culture in return. So the entrepreneurial vision, values and beliefs of the management and further key people foster the pursuit of new opportunity recognition and exploitation by also setting up appropriate internal processes, structures and capabilities. This aspect has also been considered under the labels “intrapreneurs” and “intrapreneurship”, and will be further reviewed in section 2.1.4.

2.1.3 Corporate Venturing (CV)

“Corporate venturing refers to corporate entrepreneurial efforts that lead to the creation of new business organizations [...]” (Sharma and Chrisman 1999:17) Thereby, new business may be created as autonomous or internal organisational entities, allowing a further distinction of “external” or “internal” corporate venturing activities. Miles and Covin (2002) advocated a further distinction by the presence or absence of investment intermediation, and proposed the relevance of four generic forms of new business organisations (based on direct or indirect investments, and set up as internal or external ventures). The main application of their concept

can be seen in the proposed framework for managerial decisions on various forms of CV, combining key venturing objectives with given management needs and biases. Three primary reasons are reported for the firms to pursue CV: to build an innovative (or entrepreneurial) capability; to create greater value from current organisational competencies or strategically expand the scope of operations and knowledge of the corporation; and to achieve quick financial returns (Miles and Covin 2002:35). Several authors even see the creation of an entirely new business as the key element of CV (Govindarajan and Trimble 2005, Kuratko and Audretsch 2009). CV includes also the investment in early growth-stage businesses created by external parties (external CV) and corporate venture capital (CVC) transactions (Phan et al. 2009).

A recently developed framework (Narayanan et al. 2009) tried to explain key mechanisms of corporate venturing based on a Meta analysis of CV studies. Out of 22 repeatedly cited factors, five key aspects were identified: (1) the environment of operation; (2) the organisational context as far as it is under the influence of the top management; (3) characteristics of the venture; (4) mediators of CV activity; and (5) economic outcomes of the venture. This study saw the elements of “top management support” and a “corporate strategy profile” as among the main antecedents of corporate venturing activity. The framework also integrates CE or Intrapreneurship as part of CV, thus underlining the lack of definitional clarity and unclear delineation of these terms again. Therefore, CV shall not be considered here as a separate concept, but rather as a subset or element of CE.

2.1.4 Intrapreneurs and Intrapreneurship

Even if studies labelled with “intrapreneurship” did not show up significantly within entrepreneurship research in recent Meta studies (Grégoire et al. 2006, Reader and Watkins 2006, Schildt, Zahra and Sillanpää 2006, Cornelius, Landström and Persson 2006, Keupp and Gassmann 2009), dozens of articles using the label were published over the last 40 years (e.g. Pinchot 1985, Geneen 1985, Duncan et al. 1988, Hisrich 1990, Carrier 1994, Koen 2000, Coulson-Thomas 2000, Olivier 2006, Bostjan 2007, Ebner et al. 2008). Typically, articles on intrapreneurship are not published in top tier journals; intrapreneurship, more often than not, is the synonym for corporate entrepreneurship, and shows some tendencies towards a practitioner oriented research focus. A recent article trying to define the term intrapreneurship claimed three distinct fields of investigation as idiosyncratic: (1) the individual characteristics of the intrapreneur; (2) the different types of new venture formation, emphasizing aspects of company fit and enabling functions; and (3) organisational aspects of such entrepreneurial activities in

general (Antoncic and Hisrich 2003). However, the authors conclude that intrapreneurship is, in fact, composed from the two concepts of entrepreneurial orientation EO (please compare section 2.1.8) and corporate entrepreneurship CE, and thus propose an “eight-dimensional concept” – which is just summarising the EO and CE dimensions – as the valid definition of the term (2003, 19-20). Interestingly, Antoncic and Hisrich proposed a “four-dimensional measure” defining intrapreneurship just two years earlier (2001), so the approach appears as rather unsettled thus far. Unfortunately these proposed models add few new insights into relevant mechanisms of entrepreneurship in established firms, are just defining (new) perspectives consisting of already existing elements, and rather underline, again, the open issues in research field definitions. Therefore, the review here will primarily focus on models and factors identified as relevant to foster entrepreneurial behaviour within these studies – regardless of the labels like intrapreneurship or corporate entrepreneurship used by the authors.

Turning to the intrapreneur himself, the aspect of complex organisational structures in large multinational firms was found to significantly impact his potential activity (further critical aspects of organisational complexity are discussed in section 2.1.14). “[M]atrix and functional, or ‘silo’, organisations can inhibit corporate entrepreneurship with respect to new business creation” (Sathe 2003, summarized by Christensen 2005). Furthermore, “bureaucratic barriers to innovation have to be countered” to become a successful intrapreneur (Kuratko, Montagno and Hornsby 1990). Especially installed systems of control are seen critically. “Many centralized companies with highly sophisticated control systems are, in fact, out of control” (Pinchot 2000:125). This is also interpreted as management putting too much emphasis on the doing in the sense of efficiency and control of daily operations instead of focussing on the business targets, long term goals and related effectiveness. As a consequence, the would-be intrapreneur may become a business manager primarily adhering to internal policies, structures, and plans (Reynierse 1997, Zahra, Hayton and Salvato 2004, Chell 2008, Brettel, Engelen and Heinemann 2009), thus not being driven primarily by a market orientation (Drucker 1954). Furthermore, the intrapreneur is, indeed, no independent entrepreneur, thus acting as an agent for his principal (Audretsch, Lehmann and Plummer 2009) with all the consequences following from such an agent role (aspects of entrepreneurial orientation and motivation will be further discussed in section 2.1.8). The divisional structure of a conglomerate like Siemens is even creating a replicated structure of such principal-agent relations, with CEOs acting as agents on the corporate level down to sectors, divisions, business units and country organisations.

2.1.5 Venture creation, achieved performance and growth

To rate the success of recurring new venturing in established firms, it is most popular to judge achieved firm performance (Sandberg and Hofer 1987, Zahra 1993b, Dess, Lumpkin and Covin 1997, Lumpkin and Dess 2001, Zahra and Hayton 2008, Kuratko et al. 2009). Firm performance is typically measured by sales growth, profitability and market share (Lumpkin and Dess 1996a). Unfortunately, several studies have found no performance differences between entrepreneurial and conservative firms (Jennings and Seaman 1994), or between imitation strategies and highly innovative “first mover” strategies (Nelson and Winter 1982, Dess, Lumpkin and McGee 1999). So, is there no performance advantage for entrepreneurial organisations, an effect also known as equifinality (Zahra, Jennings and Kuratko 1999a)?

A recent meta analysis of respective studies (Rauch et al. 2009) found evidence for significantly moderating effects of (1) the size of the business and (2) the type of industry towards resulting business performance. The smaller the organisation, the greater was the effect of entrepreneurial orientation (EO, please compare section 2.1.8) on firm performance. Categorising the researched industries into high-tech (computer software and hardware, biotechnology, electric and electronic products, pharmaceuticals, and new energy) and non high-tech firms, they found statistical significance for the assumption that the EO-performance relationship is stronger for high-tech businesses, since “[b]usinesses operating in dynamic industries where technology and/or customer preferences change rapidly are more likely to benefit from entrepreneurial initiatives”. These findings confirm the relevance of the factors “size” and “industry characteristics” found earlier (Lumpkin and Dess 1996a).

As a summary, the strongest effects of entrepreneurship towards resulting performance in an MNE-subsidary constellation can be expected if entrepreneurial mandates are granted to rather small subsidiaries which operate in dynamic industries. This shall be considered in the subsequent selection of case study targets in the methods chapter as well as the interpretation of the case findings.

2.1.6 Aspects of Internationality

Entrepreneurial activities can obviously unfold over national or ethnic borders – an inherent aspect to any multi-national firm like Siemens. The international entrepreneurship research (IE) tries to integrate aspects of international business (IB), entrepreneurship and strategic management; thus representing entrepreneurial activity “that crosses national borders and is intended to create value in organizations” (McDougall and Oviatt 2000: 903). Unfortunately, a

recent Meta analysis¹² of IE studies revealed a key focus on small and new ventures, the absence of any theoretical framework as a basis for the research, and no integration of IB theory with entrepreneurship (Coviello and Jones 2004, Keupp and Gassmann 2009). Furthermore, the vast majority of IE articles focus on one isolated level of analysis, thus creating no new knowledge about possible causal connections between social behaviour, resource provision, firm capabilities and resulting wealth creation (Gassmann and Keupp 2007). Most popular among these single aspect studies are the demographic and socio-cognitive backgrounds of entrepreneurs, represented by the concepts of the ethnic entrepreneur (EE, immigrating and assimilating), the transnational entrepreneur (TE, migrating from country to country and thus expanding his international network), and the returnee entrepreneur (RE, bringing back relevant knowledge to his country of origin for further entrepreneurial activity) (Drori, Honig and Wright 2009: 1006). In the rather small body of literature of IE research in the context of large and established MNEs, the aspect of getting more international is primarily about gaining and developing “foreign business opportunities” by expanded sales into new countries. Entrepreneurial international business based on established firms already being globally deployed and constantly leveraging from recurring entrepreneurial activities – as required in the research context here – has still to emerge as a coherent stream in the literature of international entrepreneurship. Potential avenues of research include the recombination of idiosyncratic idea and knowledge pools from specific regions towards new recognition and exploitation of entrepreneurial opportunities throughout the whole value chains, which appear not to have been addressed to date.

One of the key dimensions added by international entrepreneurial activities is, obviously, the variety of involved cultural levels and thus cultural differences between respective nations, regions or ethnic groups. Additionally, each MNE in itself represents a certain culture; defined by Hofstede¹³ as being entirely distinct from national cultures since “...organizational cultures are the collective programming of the mind that distinguishes the members of one organization from another” (2001: 391). Cultural knowledge, respective personal skills and personal attributes are required competences to successfully leverage from such IE configurations (Johnson, Lenartowicz and Apud 2006). Cultural distance (in values, language, and diversity of

¹² 179 articles on IE published in top tier magazines since 1994 were analysed

¹³ Gerd Hofstedes book about Culture’s Consequences was certainly a cornerstone in the development of cultural theory. He postulated five dimensions as being relevant for human culture when comparing them on the level of nations: (1) power distance, (2) uncertainty avoidance, (3) individualism and collectivism, (4) masculinity and femininity and (5) long- versus short-term orientation.

economic, political and legal systems of involved countries), and institutional ethnocentrism (as “the persistence of structures, processes and management mentalities imposed by the parent organization on overseas affiliates”, Hofstede 1980) can negatively impact international business venturing. But cultural differences can also be a key source of required heterogeneity of firm resources to create competitive advantage (Porter 1985). Adding such cultural diversity by cross-border mergers and acquisitions (or new venturing) can be seen, in itself, as an act of entrepreneurial opportunity identification and exploitation. A positive correlation between cultural distance and resultant firm performance was found in a study of 52 cross-border mergers¹⁴, with the positive performance effects attributed to “access to the target’s and/or acquirer’s diverse set of routines and repertoires embedded in national culture” (Morosini, Shane and Singh 1998: 137). However, this positive effect of “added cultural distance” towards firm performance seems only to exist up to some limits of increased complexity in management tasks (Hutzschenreuter and Voll 2008), and could not be confirmed when looking at the entrepreneurial orientation of individuals and teams (Rauch et al. 2009). Therefore, the relevance of culture may primarily lie in national and regional differences towards the fundamental entrepreneurial orientation of individuals and teams (this aspect is further explored in section 2.1.16) and has to be considered in the context of firm resource aspects.

2.1.7 Subsidiaries, granted mandates and subsidiary initiative

Since this thesis is aimed at identifying activities that foster entrepreneurship in local organisations of MNEs, granted entrepreneurial mandates to subsidiaries (also referred to as “branches”) are a key element to consider. The conceptualization of Birkinshaw et al. (2005) of such a branch “...as a semi-autonomous entity with entrepreneurial potential, within a complex competitive arena, consisting of an internal environment of other subsidiaries, internal customers and suppliers, and an external environment consisting of customers, suppliers and competitors” (2005:227) may serve as the reference definition here. Several specific subsidiary typologies have been proposed to depict their role in the MNE. Perhaps the most cited typology frame definition for subsidiaries, by Bartlett and Ghoshal (2002), uses the two dimensions “Strategic Importance of Local Environment” and “Level of Local Resources and Capabilities” to create four basic types of subsidiary positioning: (1) strategic leader, (2) contributor, (3) implementer and (4) “black hole”. A strategic leader represents high internal competence, is located in a strategically important country and is treated by headquarters as a legitimate partner in defining and implementing firm strategy. A contributor “captures the benefits of certain local

¹⁴ Based on the analysis of 52 cross-border M&A transaction between 1987 and 1992.

facilities or capabilities and applies them to the broader worldwide operations” (2002:123). But most of the subsidiaries are seen as just having “enough competence to maintain their local operations in a nonstrategic market” and thus play the role of implementers. Finally, a national organisation is considered a “black hole” if it should play the role of a strategic leader but lacks the competence to do so. This is seen by the authors as an unacceptable status of a subsidiary which has to be changed, preferably towards a position of strategic leadership.

Birkinshaw and Morrison (1995) proposed a distinction of three quite similar role types for subsidiaries, based on a review of research literature on role types, and their own empirical research: world mandate, specialized contributor and local implementer. The world mandate represents here “decentralised centralisation” like having the worldwide (or at least regional) responsibility for a specific product line including the whole respective value chain delegated to a subsidiary. The roles of specialized contributor and local implementer are comparable to the definitions of Bartlett and Ghoshal (2002). Birkinshaw found evidence for significantly improved performance of subsidiaries when operating with a “world mandate” for their specific business. With a closer look on the emergence of such a world mandate of a subsidiary, Birkinshaw et al. postulated three modes of formation: (1) “born” in the subsidiary by growing the subsidiary organically by the parent company, (2) “thrust upon” the subsidiary when bought (acquisition) from the parent and (3) “achieved” by the subsidiary by their own initiatives.

Subsidiary mandates can be seen as linked to the aspect of going for specific initiatives from the subsidiary side. Birkinshaw, as the main driving force behind the handy concept of such subsidiary initiatives as changing subsidiary roles (Birkinshaw 1997, Birkinshaw and Fry 1998, Birkinshaw and Hood 1998, Birkinshaw 1999, Birkinshaw and Ridderstråle 1999), defined it as “a form of corporate entrepreneurship, incorporating proactive and risk-taking behaviour, the use of resources beyond the control of the subsidiary, and the acquisition and use of power and influence” (2005:246). In a more recent article, Lu, Chen and Lee (2007) took up the concept and saw subsidiary initiatives as “entrepreneurial processes that find out the new way for subsidiaries to expand resources and to cultivate corporate resources” (2007:280). But is there any evidence that such entrepreneurial initiatives of subsidiaries lead finally to the ultimate target of enhanced firm performance? In a study of 24 subsidiaries of MNEs in Scotland, Birkinshaw et al. (2005:246) found evidence that “if the subsidiary is able to develop some autonomy, presumably through its entrepreneurial initiatives, it is much better positioned to start developing local suppliers and customers of its own, which may subsequently lead to a broader value-added scope.” The authors concluded that further investigations on autonomy, motivation

and culture as antecedents of entrepreneurial orientation would be required, especially under the aspect of the parent–subsidiary relationships (Birkinshaw et al. 2005).

Following up this thought, Birkinshaw also researched the parent companies' disposition towards subsidiary initiatives (positive or negative) in combination with the subsidiary stance towards entrepreneurial activities. Not surprisingly, only the coincidence of a positive attitude from headquarters towards subsidiary initiatives with an “entrepreneurial spirit” in a subsidiary could be expected to create a “synergetic and creative environment” (Birkinshaw 1995:36). Boojihawon et al. (2007) subsequently explored the characteristics of such “entrepreneurial cultures” in eight subsidiaries¹⁵ of MNEs active in the advisory sector in the UK and found significance for a “dispersed corporate entrepreneurship” (Covin and Slevin 1991, Birkinshaw 2000) based on a shared global vision, entrepreneurial orientation “consisting of cross-border innovative, proactive and risk-seeking behaviour” (2007:567), and an entrepreneurial MNE network management (Ghoshal and Bartlett 1990). The authors conclude that “it pays to be an energetic multinational subsidiary manager with a strong global vision; to attempt to nurture a subsidiary with an active entrepreneurial orientation; and to seek to cultivate an ability to manage the MNC network successfully with the objective of building team working and pursuing critical resources and learning” (2007:569). The postulated key role of the subsidiary CEO is also confirmed by three explorative case studies in German-owned subsidiaries in France (Dörrenbächer and Geppert 2008). The authors found a considerable impact of the subsidiary managers' personal interests on the subsidiaries' initiatives (and thus on the parent–subsidiary relationships), strongly linked with the socio-political and biographical background as well as the former career path and current career interests.

Birkinshaw and Hood (2001) proposed four specific MNE activities as being beneficial to foster subsidiary initiatives: (1) to provide seed money; (2) to request actively new business proposals from the subsidiaries; (3) to permit subsidiaries to operate as business incubators; and (4) to facilitate the development of international networks within the company. As an expansion to the last point, Dimitratos, Liouka and Young (2009) found evidence¹⁶ that external networking of entrepreneurial subsidiaries also positively correlates to subsequent economic success. Verbeke, Chrisman and Yuan (2007) reviewed the activities proposed by Birkinshaw and Hood, and pointed out the missing linkage to the specific types of CE (i.e. firm innovation, venturing, and

¹⁵ As researched in eight subsidiaries of multinationals being active in the advisory sector in the UK.

¹⁶ Based on a research of 264 MNC subsidiaries based in the UK.

strategic renewal): “[t]he previous suggestions may be appropriate for improving the internal efficiency of subsidiary venturing activities, but they are not necessarily appropriate for subsidiary renewal initiatives” (2007: 594).

In sum, the most relevant elements for the research, here, are the specific roles of local entities (subsidiary role), their activities to change and improve roles (by subsidiary initiatives) and the respective fostering of subsidiary activities from MNE headquarters management.

2.1.8 Entrepreneurial orientation (EO) and entrepreneurial management (EM)

Similar to the key role of entrepreneurial orientation and motivation of the independent entrepreneur, these factors can be expected as relevant in the field of corporate entrepreneurship. Looking at entrepreneurial characteristics of people and organisations, the significance of the concept of entrepreneurial orientation (EO) as a discrete and fundamental research stream has been confirmed by the vastness of more than 100 dedicated studies applying it to date (e.g. Miller 1983, Covin and Slevin 1986, Covin and Slevin 1989, Covin and Slevin 1991, Lumpkin and Dess 1996a, Lumpkin and Dess 1996b, Jantunen et al. 2005, Covin, Green and Slevin 2006, Lee and Williams 2007, Lumpkin, Cogliser and Schneider 2009). The basic “canon” of orientation dimensions of successful entrepreneurs – being innovative, risk-taking and proactive as proposed by Miller (1983: 771) – was primarily derived from earlier studies, and is reflected in the definition that an entrepreneurial firm “engages in product market innovation, undertakes somewhat risky ventures and is first to come up with ‘proactive’ innovations, beating competitors to the punch” (1983: 770). Proposed further relevant aspects like futurity orientation and competitive aggressiveness (Miller 1983, Venkatraman 1989), resource availability (Covin and Slevin 1991, Birkinshaw, Hood and Jonsson 1998, Alvarez and Busenitz 2001, Barney, Wright and Ketchen 2001) and autonomy (Birkinshaw et al. 1998, Boojihawon et al. 2007, Lumpkin et al. 2009) have been researched in various combinations, but without creating a generally accepted expansion of the initial EO set so far. Lumpkin and Dess declared the EO construct as “useful for characterizing and distinguishing key entrepreneurial processes” (1996a:136), and saw it “answer the question of how new ventures are undertaken, whereas the term entrepreneurship refers to the content of entrepreneurial decisions by addressing what is undertaken” (1997:1).

To operationalize the EO concept – especially in the context of corporate entrepreneurship – specific measurement scales were developed in recent decades like the “Enterscale”¹⁷ (Khandwalla 1977, Miller and Friesen 1978, Miller and Friesen 1984, Covin and Slevin 1986, Covin and Slevin 1989, Knight 1997). Based on it a further expanded “CE scale” comprising 25 indicators was derived (Zahra 1991, Zahra 1993b), followed by a further expansion towards a “Corporate Entrepreneurship Assessment Instrument (CEAI)” involving “84 Likert-style questions” (Hornsby, Kuratko and Zahra 2002). Thereby, the dimensions used in the most popular “Enterscale” primarily reflect the dimension summarised by the concept of entrepreneurial orientation (EO).

Within the EO concept, the aspect of risks (“taking risks” or being “risk-averse”) can be seen as going beyond the classical business focus on the probability of risk occurrence and the subsequent amount of loss caused by the occurred event seen as risk before (Yates and Stone 1992, Forlani and Mullins 2000). It is characterized in a more comprehensive way as the attitude toward risk and uncertainty of a potential entrepreneur (Shane 2003: 61, Acs and Audretsch(eds.) 2005: 37). Frank H. Knight (1885-1972) already proposed, in his dissertation about “Risk, Uncertainty, and Profit” (1921) in the context of entrepreneurship, a still widely accepted definition of risk as randomness with knowable probabilities – whereas uncertainty would represent randomness with unknowable probabilities. He postulated that the risk could be easily insured, whereas the entrepreneur primarily would bear the uncertainty of his economic endeavours.

The attitude towards taking risks has also been characterized by the term of risk propensity (Brockhaus 1980, Petrakis 2005, Ling et al. 2008), seen as a personal trait as well as an attribute of teams and organisations. Schumpeter (1934) proposed such an expansion of the original focus on individuals behaving primarily entrepreneurially towards firm-level entrepreneurship constructs. Miller hypothesized the non-entrepreneurial firm as “one that innovates very little, is highly risk averse, and imitates the moves of competitors instead of leading the way” (1983:771). He proposed a concept of distinction of simple firms, planning firms and organic firms. The definition of the planning firm as being a bigger firm construct, focussed on the “smooth and efficient operation through the use of formal controls and plans” (1983:770) is

¹⁷ The original „Enterscale“ questionnaire using eight dimension can be found in Appendix A of Knight (1997). It involves the aspects of innovation (setting up new lines of products or services, emphasis on R&D, technological leadership, and disruptive moves), proactivity, competitive aggressiveness, and taking risks.

maybe the most appropriate model for the researched Siemens entities. Not surprisingly, researchers postulate a significant relation of the maturity of a business or firm with the shown risk propensity towards new entrepreneurial endeavours. "Risk aversion is the sine qua non of mature businesses" (Sykes and Block 1989:164). This ambidextrous effect – the requirement to protect the running business by rules and controls minimising the involved risks, in parallel with new endeavours unavoidably linked to risks and uncertainty – will further be discussed in section 2.1.14.

The recommended addition of relevant factors of the organisation (i.e. size and structure of the firm, resources, culture, characteristics of the top management team, firm strategy and the respective processes) and the environment (i.e. dynamism, munificence, complexity and specific characteristics of the respective industry) of Lumpkin and Dess (1996a) can be seen as a cornerstone towards explaining firm performance as a result of entrepreneurship. Unfortunately, the resulting linear framework models no bi-directional interactions and iterations over time between these factors – but the existence and significance of such mechanisms is highly probable (Heinonen and Toivonen 2008).

The claimed moderating effect of the size of the organisation to EO reveals one of the key challenges for fostering entrepreneurship in established and large organisations. Current research results indicate high levels of desired and required individual autonomy, and innovative, proactive and risk seeking behaviour of successful entrepreneurs. But how can such attitudes unfold in MNEs for intrapreneurs not being in top management positions linked to high levels of decision autonomy? "A true corporate entrepreneur is not a follower, [...but...] managers are likely to restrict the activities of corporate entrepreneurs even though strong empowerment would be needed" (Heinonen and Toivonen 2008: 594). Seeing entrepreneurship in established companies as not being restricted to the top management team as the sole entrepreneurs (the case of Apple Inc. with CEO Steve Jobs as the visible corporate entrepreneur could be interpreted this way), opens up an important but barely researched field of top-down and bottom-up effects mutually influencing individual-level and organisational-level factors of fostering entrepreneurial behaviour (Heinonen and Toivonen 2008: 595).

"The study of a firm's entrepreneurial orientation is analogous to Stevensons and Jarillo's concept of entrepreneurial management in that it reflects the organizational process methods and styles that firms use to act entrepreneurially" (Lumpkin and Dess 1996a:139). This concept of entrepreneurial management (EM) focuses on the managers behaviour by using a continuum

from a opportunity seeking entrepreneur (or “promoter”) to a “trustee” focussed on effective management based on owned resources and current business. In this model, the entrepreneurial promoter pursues opportunities without regard for resources currently controlled (Stevenson and Jarillo 1990). The "mode of management" as proposed by Stevenson and Gumpert (1985) and Stevenson and Jarillo (1990) contained six dimensions: strategic orientation, commitment to opportunities, commitment to resources, control of resources, management structure and reward philosophy. Brown, Davidsson and Wiklund (2001) defined and tested an operationalisation of EM by adding the two additional elements of “growth orientation” and “entrepreneurial culture”, and constructed a scale of 20 items in total. The authors saw evidence from their empirical research on over 1200 SMEs that the combination of EO and EM dimensions provide a significantly more complete assessment of firm-level entrepreneurship. Unfortunately, this study is not yet complemented by other published research using the proposed EM scale or a combination of EO and EM dimensions (Sassmannshausen, Kuhn and Volkmann 2009). Furthermore, no results from empirical research on EM in MNEs exist.

2.1.9 Motivation and decisiveness

Research on personal entrepreneurial motivation as one of the involved aspects is published in the fields of psychology (Durand and Shea 1974, Miner, Smith and Bracker 1994, Baum and Locke 2004), human resource science (Shane, Locke and Collins 2003, Collins, Hanges and Locke 2004), and organisational science (Hostager et al. 1998); whereas entrepreneurial journals primarily focus on motivational aspects in various specific fields like technological inventions (Chell and Allman 2003, Marvel et al. 2007) or academics going for new ventures (Morales-Gualdrón, Gutiérrez-Gracia and Roig Dobón 2009). Two recent Meta studies on entrepreneurial motivation proposed similar models, categorising identified factors into general traits, and situation or task specific traits (Shane et al. 2003, Locke and Baum 2007). A common set of the general aspects of independence, need for achievement, drive and passion is complemented with the aspects of locus of control and vision (Shane et al. 2003), and self-confidence and tenacity respectively (Locke and Baum 2007). Self efficacy and goal setting are seen as task specific (or “situationally specific”) motives; as Locke and Baum see it for vision (please see Table 2-1 for the full comparison).

	<i>Shane et al 2003:274</i>	<i>Locke and Baum 2007:108</i>
General aspects	“General”	“General traits”
- <i>independence</i>	“Desire for independence”	“Independence”
- <i>self-confidence</i>		“General Self-Confidence”
- <i>achievement</i>	“Need for achievement”	“Achievement Motivation (conscious and subconscious)”
- <i>drive</i>	“Drive”	“Drive to Action (action focus, ambition, energy)”
- <i>passion</i>	“Passion”	“Egoistic Passion”
- <i>tenacity</i>		“Tenacity”
- <i>locus of control</i>	“Locus of control”	
- <i>vision</i>	“Vision”	<i>(please compare below)</i>
Specifics	“Task-specific”	“Situationally Specific Motivators”
- <i>self-efficacy</i>	“Self-efficacy”	“Self-Efficacy”
- <i>goals</i>	“Goal setting”	“Goals”
- <i>vision</i>	<i>(please compare above)</i>	“Vision”

Table 2-1 – Comparison of motivational factors in entrepreneurship
Sources: Shane et al. (2003), Locke and Baum (2007)

Further studies – also focussed on the independent entrepreneur – found evidence for the motivational relevance for extrinsic and intrinsic rewards including levels of independence and autonomy (Kuratko, Hornsby and Naffziger 1997) and the personal attitudes towards risk, effort, and again independence (Douglas and Shepherd 2000). Not surprisingly, this is a confirmation of the dimensions proposed as relevant by the EO concept already (please see the previous section). But unfortunately, most of the respective studies are treating the decision for employment as the opposite of going along an entrepreneurial path, thus completely omitting the aspect of corporate entrepreneurs combining both (Douglas and Shepherd 2000), and therefore being of little help in the context given here. In a recent study of the few on motivation in the context of CE, Monsen, Saxton and Patzelt (2007) analysed what encouraged 61 MBA part-time students to participate in new corporate ventures, and found evidence for the expected utility of the project’s incentive package. Focussing on the downside of applied CE and motivation, Shepherd, Covin and Kuratko (2009) researched the further aspect of grief recovery of those involved in a failed project. They saw substantial benefits for CE building self-efficacy in regulating such grief to maintain a high general willingness to pursue further entrepreneurial projects despite past failures.

Summarising all cited studies, the following motivational aspects seem to be of key relevance in the CE context: vision and goal setting (1), passion, drive and tenacity (2), self-confidence (or

self-efficacy) and low risk aversion (3), achievement motivation and respective incentives (4), and the aspect of entrepreneurial independence – maybe better rephrased as desire for autonomy (5). From a perspective of actively “motivating” employees to participate in a new venture, the research of Marvel et al. (2007)¹⁸ confirmed already cited aspects of providing rewards and accepting involved risks, and added the factors of required management support, existing resources including time, and an organisational structure that “provides administrative mechanisms that allow ideas to be evaluated, selected, and implemented” (2007: 755). However, the underlying research was only carried out with technical staff; and further and quite obvious actions like hiring employees with higher levels of entrepreneurial orientation to strengthen the entrepreneurial behaviour in a firm were not considered.

Arguably, being a combination of entrepreneurial orientation with passion, drive and entrepreneurial motivation, the aspect of entrepreneurial decisiveness is covered by studies focussing on the process of decision making, and the practices involved (Eisenhardt 1989c, Woolard 1995, Miner 1997, Miner 2000, Malach-Pines, Dvir and Yafe-Yanai 2002, Hisrich, Langan-Fox and Grant 2007). Decisiveness – among many other habits – is in general attributed to successful leaders (Bass 1990, Hisrich et al. 2007), and may prove especially significant when, in fast paced business environments, speed of decisions gives a competitive advantage towards exploiting entrepreneurial opportunities (Eisenhardt 1989c). “Speed, flexibility and decisiveness are central to entrepreneurship” (Woolard 1995). Decisiveness in the sense of taking decisions frequently and in a short time implies a considerable tolerance for ambiguity, thus taking such decisions on largely incomplete information (Cromie 1992). Making decisions under such conditions, however, is obviously strongly linked, again, to low levels of risk-averseness. Additionally, levels of cognitive biases and the application of heuristics in such decision making have been found significantly different for entrepreneurs compared to middle managers in MNEs (Busenitz and Barney 1997). Some authors argue for a systematic bias towards overconfidence of entrepreneurs (Busenitz and Barney 1997, Keh, Foo and Lim 2002, Forbes 2005, Wu and Knott 2006), defined by Forbes as the “tendency of people to overestimate the correctness of their initial estimates in answering moderate to difficult questions” (2005:624). So “overconfidence” could also be interpreted as just reflecting too high levels of self-efficacy and self-confidence – aspects already covered by the earlier discussion (please see Table 2-1). Potential effects of “overconfidence” are discussed controversially, from

18 The research was based on in-depth interviews with technical corporate entrepreneurs and human resource managers of 17 technology dependent business organizations in the US.

being seen as one of the ingredients distinguishing entrepreneurs from non-entrepreneurs to rather dysfunctional towards created firm performance.

2.1.10 Legitimacy

“Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions” (Suchman 1995:572). Alongside motivation, the effects of legitimacy also seem to be relevant to venture performance and entrepreneurial behaviour. Two specific aspects of legitimacy shall be reviewed here: the general effects of legitimacy (also labelled “organisational legitimacy”) to the firm and its performance, per-se, as a foundation, and the legitimacy perceived by employees in established firms to enter into entrepreneurial ventures as relevant in the context of the research question.

Suchman (1995) saw evidence for three primary forms of relevant organisational legitimacy: pragmatic (based on audience self-interest), moral (based on normative approval), and cognitive (based on comprehensibility and taken-for-grantedness). He concluded that “audiences perceive the legitimate organization not only as more worthy, but also as more meaningful, more predictable, and more trustworthy” (1995:575). Zimmerman & Zeitz (2002) argued that legitimacy – being in itself a resource to gain other (new) resources required for new ventures – can be built by specific strategic actions. Four proposed strategies shall lead to a better access to resources, an enhanced stability in the firm’s environment, and finally higher performance: conformity to given rules as a rather unavoidable prerequisite (1), deliberate selection of favourable environments (2), the manipulation of norms and values relevant for the firm (3), and the creation of new social context including rules, models and practices (4). These strategies – as well as the obtained legitimacy and resources – have then to be seen as being part of a circular process influenced by the resulting firm performance and growth (2002: 415).

Regarding the context of corporate entrepreneurship, Dickson and Weaver found evidence for firms being more likely “to adopt an entrepreneurial orientation when it is seen as a legitimate response and aligned with the normative, regulative and cognitive aspects of the institutions that make up the environment of the firm” (2008: 467). A quite intuitive finding: a general appreciation for entrepreneurial behaviour will encourage employees to engage in new ventures.

2.1.11 Trust

Trust as the "psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another" (Rousseau et al. 1998: 395) may also directly influence the proactivity of employees to engage in entrepreneurial actions. Trust seems to be a complex phenomenon or concept; it has been researched among individuals, groups, firms, and many types of organisations; and can be interpreted as either a cause, an effect, or a moderator of action (Rousseau et al. 1998: 393). Zahra et al. (2006) examined the functional roles of relational trust in established companies and found confirmation for its relevance as "a powerful ingredient for fostering activities needed for successful new business creation"; especially apt to overcome problems associated with social complexity, causal ambiguity, problems of informational asymmetry, and political tensions that may arise during such new business creation (2006: 555). Trust in firm contexts can also be rooted in created clan structures and longer stays in specific functions (Perrone, Zaheer and McEvily 2003).

However, there also seems to be the dysfunctional aspect of "overconfidence or lock-in effects in trust-based groups" especially when leaving the boundaries of their own firm; bearing the risk of malfeasance. Furthermore, the concept of "trust" may be mixed-up with calculated information exchanges based on a deliberate risk-analysis, and it may also be wise to distinguish between "low-trust" and "high-trust" environments by regions and industrial sectors and to act accordingly (Welter and Smallbone 2006). Overall, there seems to be, so far, an unsettled variety of aspects of trust in the context of new venture creation, with the respective research being emerging rather than mature.

2.1.12 Capabilities, domain knowledge and learning

Successful venturing in an established corporate environment is also based on respective capabilities; defined by Winter (2003) as "high level routine[s] (or collection of routines) that, together with its implementing input flows, confer upon an organization's management a set of decision options for producing significant outputs of a particular type" (2003: 991). Furthermore, successful firm competition has been found to be based on superior information and business domain knowledge (or "know-how"), and the ability to create new knowledge by learning (Kogut and Zander 1993). Applying a resource based view of the firm, Teece (2007) concluded that "competitive advantage [of a firm] can flow at a point in time from the ownership of scarce but relevant and difficult-to-imitate assets, especially know-how", but stated that sustainable advantage "also requires unique and difficult-to-replicate dynamic capabilities". He defined dynamic capabilities as the ability to react to fast changing firm

environments by building, integrating and reconfiguring competences, and concluded from his research that “enterprises with strong dynamic capabilities are intensely entrepreneurial” (Teece 2007:1319, compare as well Eisenhardt and Martin 2000, Jantunen et al. 2005). This finding seems quite intuitive since creating a new venture is, in itself, a dynamic process. However, to leverage entrepreneurial opportunities, a mix of “static” and “dynamic” capabilities may be required: static capabilities already representing the ability to manage new ventures and respective innovation and change, and dynamic capabilities reflecting the new content (new knowledge, new processes and approaches etc.) since “dynamic capabilities, or change capabilities, by definition, operate on other capabilities” (Hoopes and Madsen 2008:397).

Helfat and Peteraf (2003) proposed the renewal, redeployment or recombination of capabilities as preferable firm development scenarios, whereas capability replication would just keep the status-quo. Experience accumulation, knowledge articulation and knowledge codification are reported key learning mechanisms for capability development (Zollo and Winter 2002), and firms have to be prepared to acquire, assimilate, absorb and exploit new capabilities by respective investments (Zahra and Hayton 2008). This last aspect opens up an important issue in established firms also known as “the productivity dilemma”¹⁹ (Abernathy 1978, Benner and Tushman 2003): the ambidexterity of most effectively exploiting current business opportunities based on highly efficient routines at lowest cost, while simultaneously the exploration of new ideas – in contrast based on rather informal processes and being endeavours with uncertain results – is required to secure the competitive advantage of the firm in the longer run. Obviously, there may be significantly different capabilities required to successfully identify new entrepreneurial opportunities, compared to the successful exploitation of an existing business. If such entrepreneurial opportunities are defined as new combinations of existing information, cognition²⁰ capabilities are essential for discovery (Casson 1982, Gaglio and Katz 2001, Mitchell et al. 2004). There seem to be three distinct types of such capabilities: arrangements cognitions to discover required resources, assets and relationships; willingness cognitions to go for new ventures; and ability cognitions comprising required skills, knowledge and capacities needed to really create a new venture (Mitchell et al. 2002). Especially in established multinationals, respective capabilities are also reported to be required as team abilities to link new business venturing proposals with strategic decisions of top management teams (West 2007).

¹⁹ This aspect will be further discussed from a process perspective in section 2.1.14.

²⁰ Webster Dictionary defines cognition as the “psychological result of perception and learning and reasoning“ (last accessed February 2010)

Possibly the most informing part of current entrepreneurial cognition research is focussed on the pattern differences between entrepreneurs and non-entrepreneurs (Gaglio and Katz 2001), and the linked concept of entrepreneurial alertness (Kirzner 1973, Busenitz 1996, Minniti 2004, Grégoire, Williams and Barr 2007). Entrepreneurial cognition skills seem to be primarily rooted in previous entrepreneurial experiences and given individual characteristics. As a consequence, it seems most appropriate to argue for fostering corporate entrepreneurship in this area by primarily selecting employees accordingly, and to invest in a respective development by long term exposure to entrepreneurial activities. However, so far discussed individual entrepreneurial capabilities could be amended by many more qualities like imagination, foresight, self-knowledge, analytical skills, communication skills, organisational skills or practical knowledge (Casson 1982: 31), raising, again, the question about clear boundary definitions of the entrepreneurship research domain.

2.1.13 Long term orientation

Long-term orientation (LTO) could be defined as “the tendency to prioritize the long-range implications and impact of decisions and actions that come to fruition after an extended time period” (Lumpkin et al. 2010). Hofstede (2001) selected LTO, and its antipode short term orientation (STO), as one of the key attributes to define and research national cultures and their differences. Unfortunately, there are obviously several layers of “culture” involved in a firm reality (e.g. nation or ethnical group, firm, team, or individual), and there seems also little convergence among researchers so far about how to measure LTO (Lumpkin et al. 2010). On the level of firm management, LTO “can occur wherever top executives have the motivation and wherewithal to pursue the interests of the business in a farsighted and inclusive way” (Le Breton-Miller and Miller 2006:741). Following this idea, it may be most promising to judge LTO by the respective levels of time orientation of key executive individuals in concepts like perseverance (Hofstede 2001) on one side, and the amount of futurity activities in the firm strategy and respective long term investment plans on the other (Le Breton-Miller and Miller 2006, Lumpkin et al. 2010).

LTO has already been linked with corporate entrepreneurship in respective research early on, seen in the context of the well researched case of 3M as a characteristic of intrapreneurs: “[...] they want to change things, spend money, think long term [...]” (Fry 1987:4). Fry saw an entrepreneurial link by the “’patient’ money necessary for long-term projects that may require five to seven years of investment with no measurable return”, thus confirming the idea of judging the level of firm LTO by investment plans. In an even broader context, Hoy (2006) saw

evidence from family businesses run successfully over several generations that strategic corporate venturing (considered here as a form of CE) was breaking up the “predetermined” life cycle of “an organization to form, grow, mature, decline, and die.” Several authors took the idea of CE as the foundation of long term firm survival simply as granted (Hitt et al. 1999, Morris et al. 2009). More specifically, Ling et al. (2008:569) found evidence for a positive association of long term firm performance with CE; thus confirming the similar findings of Zahra and Covin (1995:44), which also concluded that “... the current results suggest that CE should not be viewed as a short-term ‘fix’, but as a long-term strategy for achieving superior financial performance. [...] As documented, CE activities may take many years to fully pay off.”

A most recent study of Lumpkin et al. (2010) tried to further clarify the interaction of LTO (and STO respectively) with the dimensions of entrepreneurial orientation EO. Carried out primarily in the context of family controlled businesses (FCB) but considering non FCB constellations as well, the authors derived from previous study results the proposition that LTO is positively associated with innovativeness, proactiveness, and autonomy. Especially in the FCB context, risk-taking and competitive aggressiveness are seen as rather negatively related, based on the assumption that family owned firms would specifically try to avoid risks to the reputation (by competitive aggressiveness) and the long term existence of the firm (by taking risks). However, higher levels of EO and LTO have both been linked to resulting stronger firm performance by many other studies. The various combinations of EO element settings which have been found to significantly enhance firm performance indicate that EO elements vary independently (Lumpkin and Dess 1996a). As a consequence, it may be too early to see mechanisms between LTO and EO as sufficiently researched to use derived propositions as solid grounds for the subsequent research here.

2.1.14 Entrepreneurial process, ambidexterity and slack resources

Mandatory prerequisites for entrepreneurship are, obviously, the existence of entrepreneurial opportunities, defined as the situations in which new goods, services, raw material, and organisation can be introduced and sold at greater than their cost of production (Casson 1982, Venkataraman 1997). Accepting both creation and recognition as sources of such opportunities (Hills, Lumpkin and Singh 1997, Alvarez and Barney 2007, Zahra 2008), which mutually influence each other (element a, please see Figure 2-3 hereafter for the resulting process chain), normally a fraction of initial opportunity ideas are chosen for further development and evaluated on feasibility and market potential (b). The extent to which perceived opportunities subsequently were exploited seems to be strongly linked with the attitude toward risk and

uncertainty of such a potential entrepreneur (Shane 2003: 61, Acs and Audretsch(eds.) 2005: 37). These aspects are already well reflected in the established concept of entrepreneurial orientation, and have also been discussed as part of entrepreneurial motivation (please compare section 2.1.8). To really act, or react, towards firm renewal, the beliefs of managers regarding the possibility of successful new resource combinations seem to be of key importance (Barr, Stimpert and Huff 1992) and are rooted in individual entrepreneurial values and prior experience (Ireland et al. 2009). Unfortunately, most of the respective studies have been carried out in the context of independent entrepreneurs, again, and no corresponding field research could be identified in the context of corporate entrepreneurship (Corbett and Hmieleski 2007).

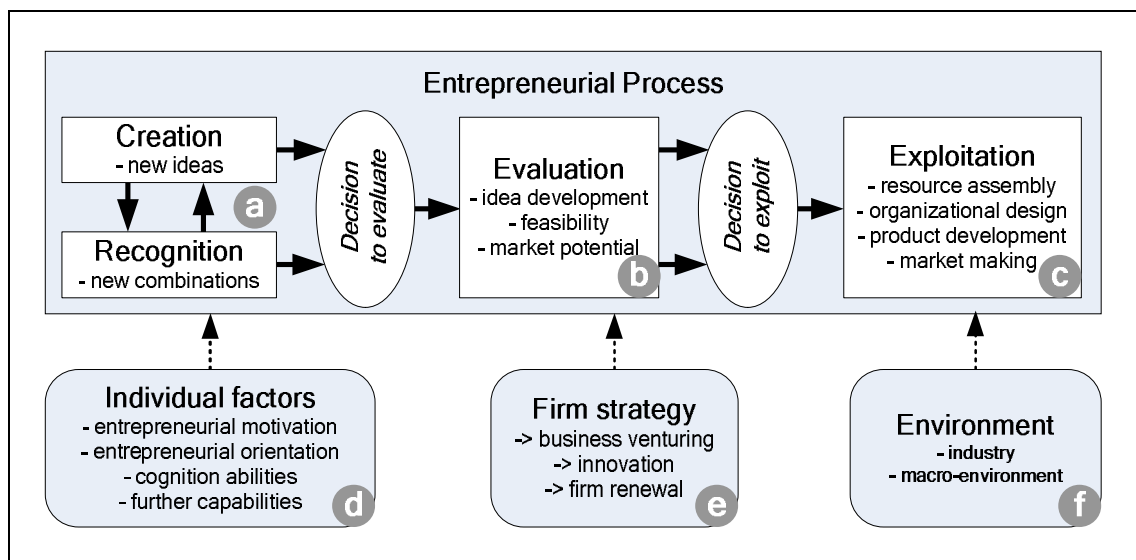


Figure 2-3 – The entrepreneurial process: core aspects and key factors of influence

To carry out opportunity exploitation, resource assembly, organisational designs, product development and market making are required as key activities (c). The most cited factors influencing this entrepreneurial process are individual factors like entrepreneurial motivation, EO, cognition and further abilities (d), firm strategy tendencies towards business venturing, innovation and firm renewal (e), and the given environment of the industry with its macro economic specifics (f; Lumpkin and Dess 1996a, Shane 2003, Shane et al. 2003, Alvarez and Barney 2007, Zahra 2008). Interestingly, all these process elements can be found in existing research literature – but without being configured into one complete process chain. Such a process model may be perceived as being somewhat of a practitioner perspective – indeed, it resembles the innovation process, based on an innovation funnel of ideas, found in many companies – and usefully configures core activities and factors required for established firms to act entrepreneurially.

The entrepreneurial process raises an important issue in established firms, known as “the productivity dilemma” (Abernathy 1978, Benner and Tushman 2003): the ambidexterity of most effectively exploiting established business based on highly efficient routines at lowest cost, while at the same time engaging in the exploration of new ideas, based on rather informal processes and with uncertain results, in order to secure the competitive advantage of the firm in the longer run. “New ventures flourish best in open, exploratory environments, but most corporations are geared toward mature business and efficient, predictable operations” (Garvin 2004). The concept of such ambidexterity has gained quite high attention among researchers in recent years (Birkinshaw and Gibson 2004, Gilbert 2006, Burgers and Jansen 2008, Im and Rai 2008, Cao, Gedajlovic and Zhang 2009, Mom, van den Bosch and Volberda 2009, Jansen et al. 2009, Raisch et al. 2009, Taylor and Helfat 2009, Andriopoulos and Lewis 2009) with a comprehensive review of the field done by Raisch and Birkinshaw (2008). It is also linked to the LTO perspective, as discussed in section 2.1.13: “For a company to succeed over the long term, it needs to master both adaptability and alignment — an attribute that is sometimes referred to as ambidexterity” (Birkinshaw and Gibson 2004:45).

The most cited single ingredient enabling innovation, firm renewal, and the absorption of respective potential failures is the existence of organisational slack (Rosner 1968:615). Nohria and Gulati defined such discretionary slack as “the pool of resources in an organization that is in excess of the minimum necessary to produce a given level of organizational output” (1996: 1246). Several studies confirm the relationship of slack and resulting firm performance as curvilinear: a certain amount of slack resources creates an optimum resulting performance via created innovation and firm renewal, whereas no, or even too much, slack provides weaker results (Bourgeois III 1981, Sharfman et al. 1988, Nohria and Gulati 1995, Tan and Peng 2003, Herold, Jayaraman and Narayanaswamy 2006). Furthermore, respective cognition abilities are required to identify entrepreneurial opportunities (an aspect that is discussed further in section 2.1.12 as one of the relevant capabilities).

As a second key factor, the influence of tight process management (e.g. ISO9000-2000 standardization, total quality management TQM, Six Sigma concept) on technological innovation and organisational adaptation has significantly increased in recent decades. Benner and Tushman (2003) argue that process management activities are beneficial for organisations in stable contexts, but are fundamentally inconsistent with innovation and change: “[P]rocess management activities must be buffered from exploratory activities and [...only] ambidextrous organizational forms provide the complex contexts for these inconsistent activities to coexist”

(2003: 238). This may be too harsh a judgment; process management may also be beneficial for successful innovation activities and new business venturing, but has to be adapted and optimized (maybe just simplified) for this purpose. And coming back to the concept of having slack resources: is there not a better approach in having “innovational resources” as part of the budgets and working according to a defined innovation process, instead of “hoping” that slack resources will come up one day with new products and businesses?

From a strategic perspective, the question of whether pursuing such a hybrid strategy (cost efficient exploitation of an established business while exploring new business based on innovation at the same time) really pays also arises, since Porter postulated that successful competitive advantage would lie in choosing either cost leadership or differentiation based on innovations, but not a mix (effect of being “stuck in the middle”: Porter 1985, Porter 1998). Recent research seems to confirm the superior performance of pursuing pure strategies (Thornhill and White 2007). However, for multinational corporations operating many businesses in parallel and in different maturity states of product life cycles, the ambidexterity of managing exploitation and exploration at the same time is obviously unavoidable. It is therefore important to understand the relevant elements (processes, organisational structures, involved culture etc.), the levels (whole firm, business units, individuals etc.) to be taken into account, and already identified promising approaches (internalisation versus externalisation etc.) to reach such hybrid targets successfully (Raisch and Birkinshaw 2008, Raisch et al. 2009).

2.1.15 Industrial environment and competitive advantage

The EO dimensions proactiveness and competitive aggressiveness (please see section 2.1.8) are linked to the relevance of involved industry environment and achievable competitive advantage therein, since proactiveness represents firm initiatives towards opportunities in the specific market, and competitive aggressiveness summarises firm reactions to competitive trends and demands that already exist (Lumpkin and Dess 2001). Lumpkin and Dess found evidence for the relevance of emphasizing proactiveness primarily in emerging new industries to anticipate all the new opportunities, whereas competitive aggressiveness becomes most important in mature industries by successfully responding to threats (2001: 446).

As a consequence, it seems appropriate to consider the status of the life cycle of a specific industry to select the most appropriate activities to foster entrepreneurship. Based on earlier research, Covin and Slevin (1990, 1991) argue that new ventures in emerging industries show the biggest entrepreneurial posture. However, this seems to be a question of the definition of

EO, with the aspect of competitive aggressiveness not acknowledged as being part of EO by all researchers. The specific industry life cycle status certainly influences the most appropriate forms of entrepreneurship and EO in a given company environment, and this aspect shall be considered as a possible lever in the conceptual framework informing the subsequent field research.

2.1.16 Governmental influences and policy

Adam Smith (1723-1790) long ago saw a link between entrepreneurial people pursuing their economic self-interests, the benefits created for the whole society by extended markets and increased price competitiveness, and an increased wealth for the society (Smith 1759, Smith, Strahan and Cadell 1776, Newbert 2003). Jean-Baptiste Say (1767-1832) defined the primary role of the entrepreneur as moving resources into more productive areas and taking the risk for new projects to advance the economy. Alfred Marshall (1842-1924) believed that entrepreneurship is the driving element behind organisations which coordinate the production factors of land, labour and capital. Not surprisingly, most governments see entrepreneurial activities as significant contributions towards economic development by renewing structures and creating new jobs. Supranational organisations like the OECD have been active in respective programs for many years, providing policy makers and the government with rich data about relevant indicators, and proposing promising approaches to foster entrepreneurial development of specific regions (OECD 2009, OECD and Leed Programme 2009, OECD, Programme and Stadtentwicklung 2009).

However, such programs are focussed on independent entrepreneurs and support the setting up of start-up firms. They thus aim at relief of the labour markets by the self-employment created. But even if there is no recognizable research on governmental fostering activities of entrepreneurship in a CE context, the indicators and respective statistical data provided are a key source for comparing countries and regions regarding a prevailing tendency towards entrepreneurial activity (e.g. percentage of population going for an own business, achieved growth and survival rates; OECD 2009). In the context of fostering local entrepreneurship, these studies are highly informative, providing selection criteria for regions with a significantly entrepreneurial culture to supply firm resources.

2.1.17 Research on specific enablers, barriers and triggers for CE

When looking for management research discussing the potential to foster entrepreneurial behaviour in established firms, a research stream in human resource management (HRM) seems

especially relevant (Kuratko et al. 1990, Jones and Butler 1992, Kuratko et al. 1993, Morris and Jones 1999, Hornsby, Kuratko and Montagno 1999, Kuratko 2005, Hayton 2005). Five dimensions are repeatedly cited from this HRM perspective for promoting corporate entrepreneurship: (1) providing rewards or performance appraisals for entrepreneurial endeavours, (2) support by upper management to facilitate and promote entrepreneurial actions, (3) respective resource availability in terms of time and money, (4) an organisational culture and structure supporting entrepreneurial action and learning, and (5) the ability and willingness of involved managers to take risks (Hayton 2005, Kuratko, Hornsby and Bishop 2005a).

Within the cited arena of culture and structure, a specific area of research on cynicism of employees towards their management and work environment has evolved in recent years (Guastello et al. 1992, Dean Jr., Brandes and Dharwadkar 1998, Wanous, Reichers and Austin 2000, Bommer, Rich and Rubin 2005, Stanley, Meyer and Topolnytsky 2005, Urbany 2005, Wu, Neubert and Yi 2007, Watt and Piotrowski 2008) “Many employees are highly cynical about the effectiveness of management and view large, bureaucratic organizations with disdain and contempt” (Feldman 2000:1286). Cynicism could be defined as “an attitude characterized by frustration, hopelessness, and disillusionment, as well as contempt toward and distrust of business organizations, executives, and other objects in the workplace” (Andersson 1996:1395). Some articles use popular Dilbert comics (Feldman 2000) or even the metaphor of “dementors²¹” for cynical management and other employees, and their deeds, to visualize the phenomenon (Denton and Campbell 2009). Such organisational cynicism is seen as a complex attitude including affective, cognitive and behavioural aspects, caused by lost trust in the management and the organisation, the feeling of being treated unfairly, and frustrated expectations (Bommer et al. 2005, Watt and Piotrowski 2008). The phenomenon has often been researched in the context of change situations, leading to several studies on organisational change cynicism (Buchanan, Claydon and Doyle 1999, Cutler 2000, Wanous et al. 2000, Bommer et al. 2005, Watt and Piotrowski 2008). Change situations have been found to cause higher levels of cynicism, and employees’ cynicism was found consistently to be negatively related to engagement²² with the firm (Watt and Piotrowski 2008), with higher levels of

²¹ “A Dementor is a Dark creature, considered one of the foulest to inhabit the world. Dementors feed off human happiness, and thus cause depression and despair to anyone near them. [...]”. In: “Harry Potter” by J.K.Rowling. Source: <http://harrypotter.wikia.com/wiki/Dementor>, last accessed 2011-01-08

²² Kahn (1990:700) defined personal engagement as “the simultaneous employment and expression of a person's "preferred self" in task behaviours that promote connections to work and to others, personal presence (physical, cognitive, and emotional), and active, full role performances.”

absenteeism, fluctuation, and the number of labour grievances filed (Wanous et al. 2000). As a first consequence, employees with low engagement disposition toward the firm can hardly be expected to act as inspiring corporate entrepreneurs undertaking new ventures. More severely, organisational changes arising from entrepreneurial endeavours have to be expected to increase levels of cynicism of employees. The most promising countermeasures include involvement in decision making and providing a good rationale for change based on the anticipated benefits of the intended change (Connell and Waring 2002).

Change resistance could be seen as one example in a set of studies explicitly addressing “barriers” (or “obstacles”) to entrepreneurship. Unfortunately, most of these studies are aimed at start-up or independent entrepreneurs and the respective macroeconomic context (Kouriloff 2000, Choo and Wong 2006, OECD and Leed Programme 2009, OECD et al. 2009). As one example from CE research in this field, reported barriers to middle managers trying to undertake entrepreneurial endeavours in established firms – found in systems, structures, policies and procedures, strategic direction, people, and culture (Morris and Kuratko 2002, Kuratko and Goldsby 2004) – seem simply to replicate those already well documented in other research streams. Similarly, most of the studies looking explicitly at triggering events (or “enablers”) for entrepreneurship are carried out in the field of nascent entrepreneurship. In the context of established firms, only generic findings like “entrepreneurship initiation has its foundations in person and intuition, and society and culture” (Morrison 2000:56) could be identified.

2.1.18 Empirical studies on how to foster entrepreneurship in practice

A selection of ten research studies, focussed specifically on how to foster entrepreneurship in established companies, has been further analysed for dimensions identified as relevant (Fry 1987, Kuratko et al. 1990, Brazeal 1993, Higgins 1995, Antoncic and Hisrich 2001, Dess et al. 2003, Hayton 2005, Christensen 2005, Fitzsimmons et al. 2005, Menzel, Aaltio and Ulijn 2007). Ten repeatedly occurring²³ key aspects have subsequently been derived from the study findings (please see Table 2-2 for the summary, and Appendix H for the detailed analysis). The most cited elements were the importance of appropriate organisational structures, followed by the requirement of achievement recognition based on appropriate reward or incentive systems, and an entrepreneurial firm culture reflecting the aspects of the willingness for change, shared goals

²³ Numbers of occurrences of a specific aspect are just indicative; and it has to be considered that for example a single citation could also be caused by only one researcher or research team having access to a specific setting revealing it.

of innovation, trust, freedom granted for entrepreneurial action, forgiveness for failures, and management proactivity towards innovation. Unfortunately, the cited aspect of appropriate organisational structures is not backed by a shared and precise definition; the studies cite a variety of potentially important organisational aspects²⁴. When applying the view of Marvel et al. (2007) – “[organisational structure] provides administrative mechanisms that allow ideas to be evaluated, selected, and implemented” – this may cover a wide field of activities comprising concrete line organisation, process definitions and respective competencies and responsibilities. Further on, top management support by explicitly provided sponsorships and coaching; provision of required resources; and process and control formalization including clear goal setting and harmonization with (non entrepreneurial) business processes, were cited by six studies as relevant to fostering entrepreneurship. The importance of people excellence, respective training and team building, appropriate communication means and information exchange facilitation were cited by four. Finally, two studies saw relevance for a required long term focus to foster entrepreneurial action and the acceptance and management of involved risks. Interestingly, the aspect of firm strategy did not show up explicitly in the ten analysed studies, but is presumably covered by the effect that cited factors are structures “following the strategy”, and the existence of such a strategy is already implied when looking at how to foster entrepreneurship.

As a key finding for the research here, the various aspects of organisational structure and its effects towards entrepreneurship need to be explored, especially since Siemens as one of the largest global firms is based on a multidimensional matrix of global headquarters, regional clusters and specific country organisations.

²⁴ e.g. aspects like: “conducive to intrapreneurial activities”, “organizations need some guidelines to direct or redirect resources towards establishing effective intrapreneuring”, “counter the bureaucratic barriers to innovation”, “structural freedom and support”, “flexible policies and procedures”, “concern for job descriptions”, “structural arrangements” like “venture groups, task forces, strategic business units; freedom to engage in projects of one’s own undertaking, and unofficial projects (e.g., bootlegging, skunkworks)”. Compare Appendix H for study details.

Rank	Aspect	# of occurrences	contained in analysed studies:
1	Fitting organisational structure	9	2, 3, 4, 5, 6, 7, 8, 9, 10
2	Reward (incentive) systems, achievement recognition	7	1, 3, 4, 5, 7, 8, 10
	Entrepreneurial (innovation) culture, including willingness to change, shared innovation goals, provided trust, freedom, forgiveness for failures, proactivity towards innovation	7	1, 3, 4, 5, 6, 7, 10
4	(Top) management support by sponsorship and coaching	6	1, 2, 5, 8, 9, 10
	Resources (time, people, money)	6	1, 2, 3, 7, 8, 10
	Process and controls (clear goal setting, formal controls, harmonization of entrepreneurial processes with normal business processes)	6	2, 5, 6, 7, 8, 10
7	People excellence and training; foster entrepreneurial teams	4	2, 4, 7, 10
	Appropriate communication means, information exchange	4	5, 7, 8, 10
9	Long term focus	2	1, 9
	Risk acceptance and risk management	2	7, 8

Table 2-2 – Top ten aspects relevant to foster entrepreneurship in established firms

2.2 Achievements and open fields in entrepreneurship research

The review confirms the notion that entrepreneurship research is “a widely dispersed, loosely connected domain of issues” (Ireland and Webb 2007, cited in Keupp and Gassmann 2009). Within these “issues”, entrepreneurial orientation EO is possibly the most solidly researched concept, also providing a quite stable operationalisation (Birkinshaw et al. 2005).

Looking at the economic foundation of entrepreneurship research, the disputes about the appropriateness of equilibrium or disequilibrium models (i.e. the neoclassical market theory versus the thinking in the tradition of the Austrian economic school) seem rather artificial, since the essence of entrepreneurship undoubtedly lies in the successful exploitation of new business ideas. Underlying assumptions about perfect competition based on perfect transparency of information have already been proven unrealistic by several economic studies in recent years. Similarly, the discussion about entrepreneurial opportunities as just being discovered, or also possibly being created, reveals different underlying models again rather than providing new insights. These discussions illustrate a significant dependence of entrepreneurship on many other disciplines, and several authors still doubt that entrepreneurship is a mature domain of its own (Low 2001, Grégoire et al. 2006). Not surprisingly, some authors see the most promising research of entrepreneurial phenomenon primarily in multi-disciplinary collaborations (Ireland and Webb 2007).

As a next key finding, a clear borderline between innovation and entrepreneurial activity seems to lack definition thus far in the literature. The entrepreneurial process as described in section 2.1.14 is almost identical to established innovation processes (“innovation funnels”) used today by many companies. Most of the proposed definitions of entrepreneurship include the aspect of innovation; however, none provides a clear delineation between entrepreneurial and innovative behaviour. It seems that in practice any combination of innovative or entrepreneurial antecedents and outcomes may exist; i.e. something developed as an incremental innovation may turn out to create even a complete new industry, and vice versa. Just to define the “creation of or entrance into a new business field” as the key characteristic of entrepreneurship would be far too simple; many highly entrepreneurial activities consist of new business approaches, recombination in value changes etc., but not creating or entering new markets.

Not surprisingly, most studies on entrepreneurship focus on independent and novice entrepreneurs, and respective venture creation. This leaves corporate entrepreneurship CE as the least settled perspective within entrepreneurship research. The most interesting elements within current CE research towards the given research question may be (1) the conceptualization of an employed intrapreneur and related challenges towards required autonomy, innovativeness, risk bearing and long term orientation, (2) the organisational context with aspects of ambidexterity and required slack resources when exploring new opportunities and exploiting a running business at the same time, (3) the dependence of a local organisation (i.e. subsidiary) on the granted business mandate by headquarters and the tightness of firm integration in general, and (4) the networks and alliances within and outside their own firm as possible sources fostering opportunity exploration and exploitation. For all these aspects, and many more, studies carried out typically focus on one single aspect only.

Looking at the given research context of actively fostering entrepreneurship in established companies, the top ten factors derived from empirical studies as listed in Appendix H and summarised in Table 2-1 of section 2.1.18 show quite a high accord among key elements. No integration of these elements into a comprehensive model of how to successfully foster CE seems to have been undertaken so far. Reasons may lie again in the rather unsettled issue of mutually accepted basic definitions with the entrepreneurship research domain and the many dimensions involved, like the type of corporate entrepreneurial activity and the specific characteristics of the respective industry. Few studies have researched the issue in an MNE-subsubsidiary context; so this provides an attractive field for new knowledge creation.

2.3 Derived conceptual research framework and research questions

In this section I explain how I derived from the above literature review and initial pilot study a conceptual framework that further refined my research focus and questions, thus guiding my research design and fieldwork. The vast field of entrepreneurial aspects as discussed in the previous sections was narrowed down and focussed on fields providing the potentially most relevant findings. This was done by taking into account the given research question, its elements, the findings from the pilot study (please see Appendix B for the summary), and the specific circumstances of the MNE-subsidary configuration in the researched Siemens entities. The 'types' of relevant organisations and businesses were taken as the initial selection criteria. The elements of EO, as the best researched concept of basic entrepreneurial factors, were used to further narrow down the field of investigation (please compare factor A in Figure 2-4 which summarises the whole framework as derived and explained hereafter). The three core elements of EO in the typical industry life-cycle from emerging to mature business tend to represent aspects relevant primarily for business in emerging markets. Thus, it was decided to exclude the additional EO aspect of competitive aggressiveness primarily related to mature markets (B, as reviewed in sections 2.1.8 and 2.1.15). The EO aspect of autonomy was included since this was found to be significant for entrepreneurial behaviour, especially in corporate contexts (reviewed in sections 2.1.7 and 2.1.8). Further on, most significant entrepreneurial characteristics are given in dynamic industries with rapid changes in technology and/or customer preferences (C), and rather small sizes of the respective business organisations (D, reviewed in sections 2.1.5). This selection defined the first area boundary proposed for the subsequent research (part I in Figure 2-4).

In a second step, the subsidiary was selected as the main focus since it represents the local organisation in which entrepreneurship is to be fostered. With it, the MNE headquarters, the other subsidiaries and the local (country) environment were identified as the main peers (please see the four core blocks in part II of Figure 2-4). The facet of tightness of integration (or amount of autonomy) within the whole MNE structure directly influences the degree of freedom of corporate entrepreneurs to decide and act (aspect a, reviewed in section 2.1.1). Linked to it, the specific business mandate given from the MNE management to a subsidiary (b, reviewed in section 2.1.7) is of key importance for the amount of granted responsibility and thus the autonomy for local decisions. This mandate may also reflect the general entrepreneurial posture within the whole MNE, an aspect which is also relevant within the subsidiary itself and the region in which it is located (c, reviewed in sections 2.1.6 and 2.1.16). The explicit investigation

of the entrepreneurial posture based on an operationalisation of the EO concept (like the “Enterscale” as discussed in section 2.1.8) was tested during the pilot study but proved not to be applicable in the chosen overall research setting (please find more details on this from a methodological point of view in section 3.4).

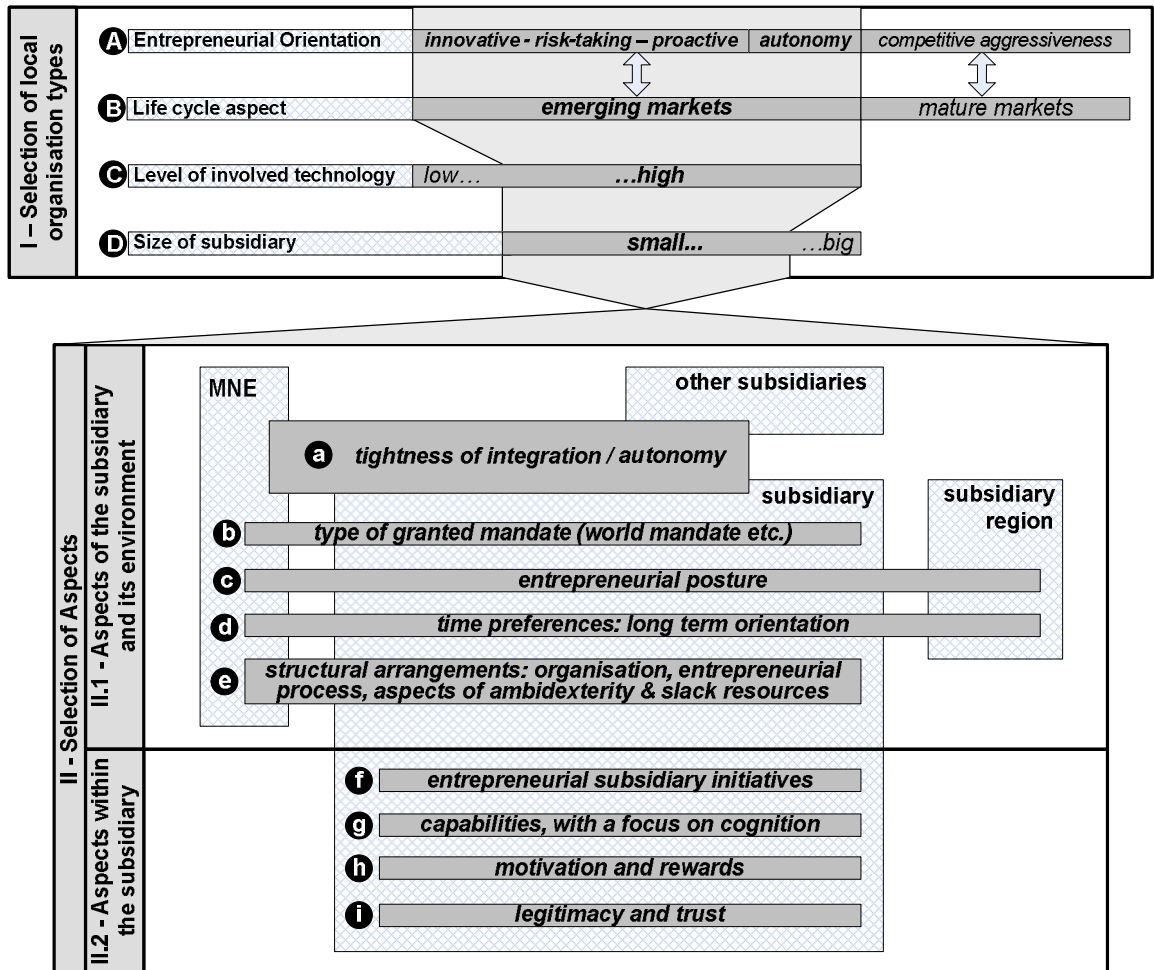


Figure 2-4 – Derived overall conceptual framework

Furthermore, the importance of long term orientation showed up in the pilot study as well as in the reviewed literature (d, reviewed in sections 2.1.12, 2.1.13 and 2.1.18). As a last key aspect, the organisational context, including aspects of the entrepreneurial process of opportunity creation/recognition and exploitation with its linked issues of managing the resulting ambidexterity and providing the necessary slack resources, is relevant (e, reviewed in section 2.1.12).

As the third step, key aspects within a subsidiary were derived. Entrepreneurial subsidiary initiatives directly reflect activities of the subsidiary management (f, reviewed in sections 2.1.1

and 2.1.7). Entrepreneurial capabilities, especially the cognition ability, are key to discovering (or deriving) new opportunities (g, reviewed in section 2.1.12). Furthermore, aspects of intrinsic and extrinsic motivation are driving entrepreneurial behaviour (h, reviewed in section 2.1.8) and should explicitly include aspects of the established reward systems (reviewed in sections 2.1.1, 2.1.6 and 2.1.8). Linked to motivation, aspects of trust and perceptions of legitimacy related to the key players are also relevant (i, reviewed in sections 2.1.10 and 2.1.11).

However, the selected aspects in Figure 2-4 were still far too voluminous to be substantially researched within this study. Therefore, key findings from the pilot study (carried out within the Siemens firm context) and the given focus of the Siemens initiative for fostering local entrepreneurship (the “SMART²⁵” project) provided additional guidance for further narrowing of the scope (please see Figure 2-5 hereafter for the subsequent summary). Moreover, since little entrepreneurship research has been carried out in the specific MNE-subsiary configuration so far, aspects involving headquarters as well as the local organisation were favoured to maximise the potential of the research towards new knowledge creation.

The review of aspects most relevant to foster entrepreneurship in established firms revealed the importance of appropriate organisational structure and processes (aspect e in Figure 2-4; reviewed in section 2.1.18). Within the Siemens entrepreneurship initiative, these aspects were also identified as critical, since current Siemens process definitions are perceived as hampering the ability for entrepreneurial action by their sheer extensiveness and a rigidity which demands high predictability of outcomes. Firm resources are almost entirely assigned to planned and budgeted endeavours, thus allowing almost no organisational slack for new initiatives. This complexity and rigidity led to the proposal “to set up [...] lean processes” to be applied in such entrepreneurial organisations, and the Siemens statement that “internal regulations should be at a minimum level to guarantee a lean, flexible and fast setup”²⁶.

As a second aspect, existing research in the specific context of MNEs and its subsidiaries revealed the significance of the granted subsidiary mandate in order to be successful (aspect b in Figure 2-4; reviewed in section 2.1.7). Reflecting this factor, Siemens defined world mandates

²⁵ Simple, Maintenance-friendly, Affordable, Reliable and Timely. Siemens definition for products aimed at lower end world markets. Compare section 3.3.3

²⁶ As documented out of a SMART initiative benchmarking in “Organization Benchmarking - key findings_V5.pdf”

for the entrepreneurial ventures to be newly established. Unfortunately, the existing multi-matrix organisation of Siemens (with European based headquarters responsible for business specific R&D, manufacturing and overall business success; country specific organisations integrating sales throughout all Siemens business domains; and cluster offices being responsible for the sales in whole regions again) is not synchronized with new (entrepreneurial) entities working as world entrepreneurs. Initial feedback from the Siemens SMART initiative indicated resulting responsibility conflicts in sales, and unresolved product portfolio planning conflicts between the established headquarter functions and the new “world entrepreneurs” (reviewed in section 2.1.7).

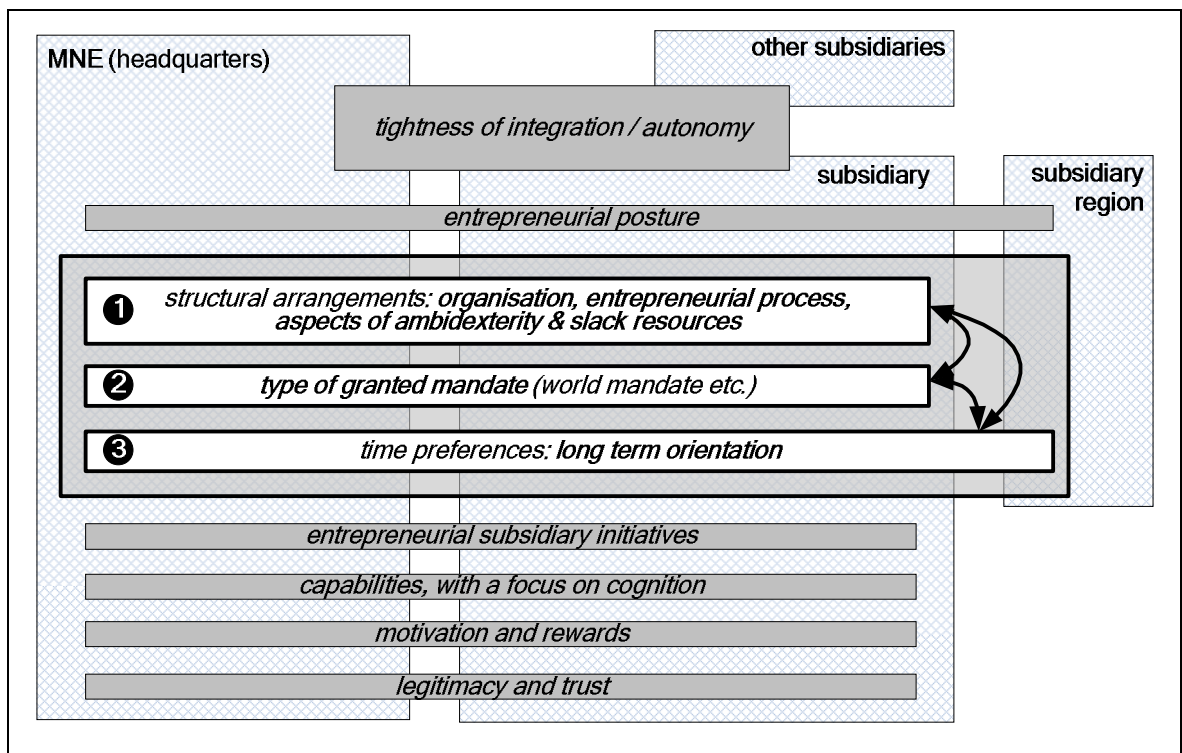


Figure 2-5 – Conceptual framework focussed on the proposed subsequent research elements

As a last key aspect to be selected, the pilot study revealed the significance of long term orientation, or rather its absence, especially in relation to serving in executive management positions long enough to lead entrepreneurial endeavours to success (reviewed in sections 2.1.1, 2.1.12, 2.1.13). In the investigated pilot study case of the attempted build-up of the new Fire Safety business in South Korea, the applied Siemens career model, primarily based on stays of respective “top talents” of only two to three years within a specific executive function (please see section 4.4 for more details), hampered the execution of a long-term plan significantly.

Finally, as shown in Figure 2-5, the relationship between these three focal factors is also of interest, as are the possible moderating effects of the further factors (i.e. tightness of integration versus granted autonomy, entrepreneurial subsidiary initiatives and capabilities – with a focus on cognition, motivation and rewards, legitimacy and trust).

The research focus of this thesis is thus captured in the following main research question and sub-questions. To reiterate, the primary research question is:

How can entrepreneurship be strengthened within local Siemens organisations?

More specific sub-questions further refine the research focus and include:

*How do the existing organisational structures and processes, the nature of the mandates granted to the local entities, and the absence of a long-term orientation enable or inhibit corporate entrepreneurship within local Siemens organisations? and
What relationships or interactions exist between the three focal factors?*

2.4 Summary

In this chapter, the relevant fields of literature were identified by the decomposition of the main research question, respective learning from the pilot study, reviews of comparable studies investigating firm practice in corporate entrepreneurship, and the investigation of existing literature on entrepreneurship. A derived framework of relevant fields in entrepreneurship research informed the structure and content of the subsequent and sequential review of single elements. Out of the review, aspects seen as most germane to the focus of this research, as well as the given firm environment, were selected and integrated into a conceptual research framework of elements to focus the subsequent research and frame specific sub-questions guiding the research. The means by which these research questions are explored is detailed in the following chapter.

3. Methodology and data analysis

This chapter outlines my methodological choices and provides a detailed account of the research methods applied. In addition to my role and the specific challenges faced by Siemens, the chosen methodology and methods of this thesis were primarily informed by comparable studies on entrepreneurship (please see section 3.1), and considerations of the foundations of social research approaches as outlined by Crotty (1998) and described in section 3.2. The research focus as defined by the conceptual framework and research questions derived from the literature review in the previous chapter (please see section 2.3) drove the identification and selection of cases most apt for field research (please see section 3.3). The steps carried out in data collection and analysis, and case specific data sources, are described in sections 3.4 and 3.5. Considerations on the feasibility of the planned research and potentially relevant issues of culture, ethics, risks and conflicts of interests are documented in sections 3.6 and 3.7.

3.1 Methodology and methods as applied in comparable research

To inform this study about a most appropriate research approach, the ten studies specifically focussing on how to foster intrapreneurship in practice (as reviewed in section 2.1.18) were further analysed for applied research methodology and methods. In this sample, four studies used case study methodology (from a single case up to five cases), four studies were based on literature reviews, and three studies applied surveys to larger samples of company executive respondents (one study combined survey and literature review). This significant use of case studies in empirical entrepreneurship research – as well as the application of qualitative analysis – has also been confirmed by recent literature reviews (Chandler and Lyon 2001, Grégoire et al. 2006, Davidsson and Wiklund 2007, Keupp and Gassmann 2009).

However, entrepreneurship research is “a widely dispersed, loosely connected domain of issues” (Keupp and Gassmann 2009); and several authors still doubt that entrepreneurship is a mature domain of its own (Low 2001, Grégoire et al. 2006). Some authors see most promising research of entrepreneurial phenomenon primarily in multi-disciplinary collaborations (Ireland and Webb 2007), and many disciplines are cited as relevant: “Accounting, anthropology, economics, finance, management, marketing, operations management, political science, psychology, and sociology are the disciplines we explore” (Ireland and Webb 2007:892). As one consequence of this diversity, a variety of qualitative and quantitative research methods are applied (Keupp and Gassmann 2009:612), also reflecting best practice in given disciplines. The methodology chosen

for a specific research focus primarily has to fit the research grounds and the chosen research questions.

3.2 Epistemological and methodological positioning

To define the epistemological²⁷ and methodological positioning of planned research, Crotty (1998) proposed a hierarchy of four elements, informing each other: ontology and epistemology, the theoretical perspectives taken, chosen methodology, and applied research methods. Adding ontology²⁸ as informing epistemology, as well as being informed by it²⁹, a four tier model emerges, used here as the reference for argumentation (please see Figure 3-1 hereafter for the summary).

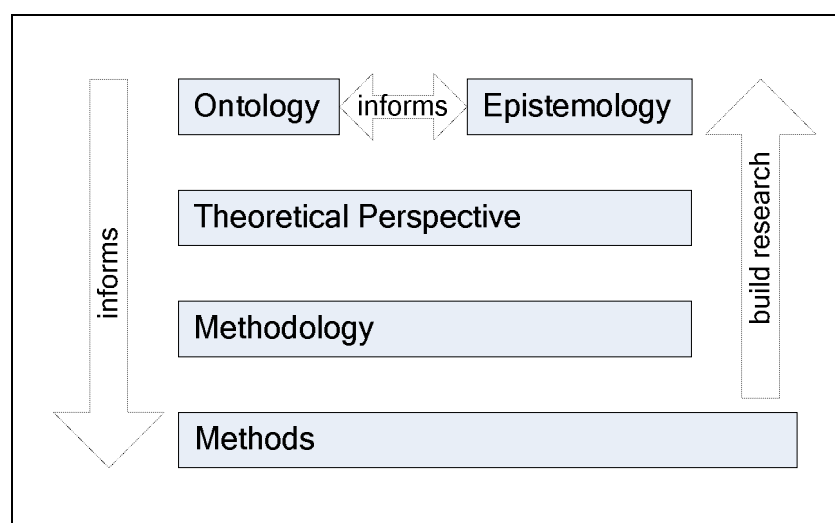


Figure 3-1 – A four tier model for key research philosophy aspects
(Source: adaptation of the model in Crotty 1998, pages 2ff.)

²⁷ Epistemology is “a branch of philosophy that investigates the origin, nature, methods, and limits of human knowledge” (American Heritage Dictionary, accessed 1st of February, 2011)

²⁸ Ontology is “the branch of metaphysics that studies the nature of existence or being as such” (American Heritage Dictionary, accessed 1st of February, 2011)

²⁹ Crotty (1998) sees ontology informing epistemology in that knowledge and the objects of knowledge are part of the world, whereas epistemology - since it includes analysis of claims to knowledge - sheds light on ontological claims. He argues that ontology begins when a claim is made about the nature of the world; and epistemology begins when an attempt is made to justify that claim. Other authors just argue for ontology informing epistemology.

On a basic epistemological scale with objectivism on one side, subjectivism on the other and constructionism as the connecting element (please compare Crotty 1998) the research here is carried out from a social constructionist position. The main aspects of the research field are social constructs, such as organisation, processes, or entrepreneurial orientation. The key phenomenon in corporate entrepreneurship could hardly exist as meaningful entities independently of human consciousness and experience since they are obviously fully embedded in the social world. Therefore, an objectivist position does not seem adequate. A pure subjectivist approach however, based on an ontological assumption of “reality as a projection of human imagination” (Morgan 1980:492) does not seem appropriate either, since corporate entrepreneurship phenomenon obviously exist beyond pure human imagination. Constructionism is “the view that all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context” (Crotty 1998:42) and “at once realist and relativist” (Crotty 1998:63). Therefore the main ontological assumption for the research here is reality as a social construction and a realm of symbolic discourse (Morgan 1980).

Turning to the next level, I interpret the “theoretical perspective” as the philosophical stance lying behind the methodologies to be applied. After dismissing objectivity as the epistemology to be used, positivism is hardly seen today as the appropriate perspective for constructionism. I am indeed interested in *Verstehen* (understanding, substantiated by empirical evidence) of the related human science phenomenon, in the way suggested by Max Weber (1864-1920), thus proposing interpretivism as the theoretical perspective to be applied. Interpretivists assume that human and thus social action, in contrast to the motion of physical objects, is inherently meaningful. Therefore, they are required to be aware of the potential meanings of particular social actions (like going for a new entrepreneurial endeavour) within a given context. Schwandt (2000) claimed the necessity to declare either that an action is based, to a certain extent, on intention, or that an action’s meaning can only be interpreted within the terms of the respective system of meanings in which it takes place. Crotty sees the interpretivist approach primarily looking “for culturally derived and historically situated interpretations of the social life-world” (1998:67). Since an interpretivist perspective is used, the context of the case company is important. At the same time, data framing and data collection is informed by an initial conceptual framework derived from the extant literature in the given field (Kuzel 1992: 43).

Regarding the selection of an appropriate research design, a mixture of methods reflecting different levels of involvement by the researcher in the field (from low to high) while considering the different philosophical stance of each study (positivist to social constructivism) as proposed by Easterby-Smith, Thorpe and Lowe (2002:57) shall be used as a reference here. To have my working environment as the key field for the research has also to be considered an important element. The access to this unique empirical setting makes case study research design favourable. Case studies also allow some freedom of choice regarding the level of the researcher's involvement (potential risks and conflicts that this may imply to the research is discussed in section 3.7). The application of a case study design is further indicated as appropriate by its significant use in comparable studies investigating the phenomenon of entrepreneurial behaviour in firms (please compare section 3.1). Applying case studies as the methodology allows the combination of several methods of data collection, data interpretation and subsequent knowledge creation, thus facilitating multi-method approaches and giving some freedom of choice regarding the level of the researchers' involvement.

The case study focus was informed by the previous pilot study (please see Appendix B for the summary), the second literature review, and derived research questions (please see chapter 2). So case study research was setting out with neither a "blank sheet", using approaches from grounded theory, nor with a selected theory simply to be tested. The recognition of patterns, themes and their relationships among constructs was primarily based on induction (Patton 2005, Eisenhardt and Graebner 2007). Case study methods as described by Stake (1995) and Yin (1994/2003) served as main guidance here. Case study focus is primarily on what and how things are done rather than on the aspect of how many, how much or how often (Yin 1994/2003). Most case studies are based on the research of one or very few cases, raising discussions of the kind of possible "generalizability" of derived knowledge. When arguing from a social constructionist position and an interpretivist perspective, the created contribution to knowledge by simply describing and analysing cases may be perfectly satisfying. Yin argued that results from case studies are "generalizable to theoretical propositions and not to populations or universes", and the validity and generality of the conclusions have to be carefully evaluated in a reflective and qualitative way³⁰, avoiding the application of criteria from quantitative research (1994/2003). Hereby, the validity of derived results may lie in the amount of "real access" to the experiences involved in the research setting, whereas the transparency in

³⁰ Qualitative methodologies focus on "naturally occurring, ordinary events in natural settings, on what 'real life' is like" (Miles and Huberman, 1994:10).

sense-making out of raw data supports the reliability of the arguments (Easterby-Smith et al. 2002:53). For readers already familiar with the field of entrepreneurial research or corporate entrepreneurship in practice, the reported findings may also contribute to naturalistic generalizations towards current and future practice (Stake 1995). Thereby, arguing out of a constructionist paradigm, “external validity is replaced by an empirical process for checking the degree of similarity between sending and receiving contexts. [...] [T]he burden of proof for claimed transferability is on the *receiver*” (Guba and Lincoln 1989:241). To allow for a maximised “generalization” or “transferability” of findings and conclusions, case contexts and case findings are described in detail, and data analysis is kept as transparent as possible by providing all derived data displays in Appendix K. Potential “generalization” or “transferability” of findings and conclusions, i.e. the applicability of created knowledge towards subsequent research and practice is further discussed in chapter 7.

The research focus for collecting field data was informed by a conceptual framework of key aspects as described in section 2.3. The selection of appropriate cases to accomplish the research with the intended focus is discussed and defined in section 3.3. The approaches in data collection and data analysis are described in section 3.4. To avoid common pitfalls, potential risks and shortcomings in primary data collection methods (observations, interviews, surveys etc.), related best practices are discussed and applied (Stake 1995, Yin 1994/2003).

3.3 Study design and respective case selection

The preliminary and exploratory pilot study on relevant performance factors in the context of MNEs as serial acquirers of SMEs was carried out as a single case study investigating the Shinwha Ltd. acquisition and integration. As a key outcome informing the main study, the entrepreneurial behaviour and activity was identified as specifically relevant to delivered firm performance. Furthermore, the pilot study case setting of Siemens Shinwha as a newly created subsidiary was found apt for the main study research as it represented the selected aspects of granted mandates, involved long term orientation, and processes and organisation. Undertaking the pilot study case and the field research data and results in the main study also allowed for a longitudinal “real-time” analysis. Such a combined research approach (please see Figure 3-2 hereafter for the summary) is informed by a case study methodology described by Dorothy Leonard-Barton (1990): the application of a “synergistic use of a single longitudinal case investigated real-time, combined with the analysis of replicated multiple sites retrospectively”. The combination may strengthen the internal and external validity of the research results by a certain “triangulation” of findings created by the varying specifics of the different cases

involved, thus representing a variation sampling (Guba and Lincoln 1989). However, the actual synergistic use of the previous pilot study findings primarily took place in the aspects being congruent with the subsequent focus of the main study.

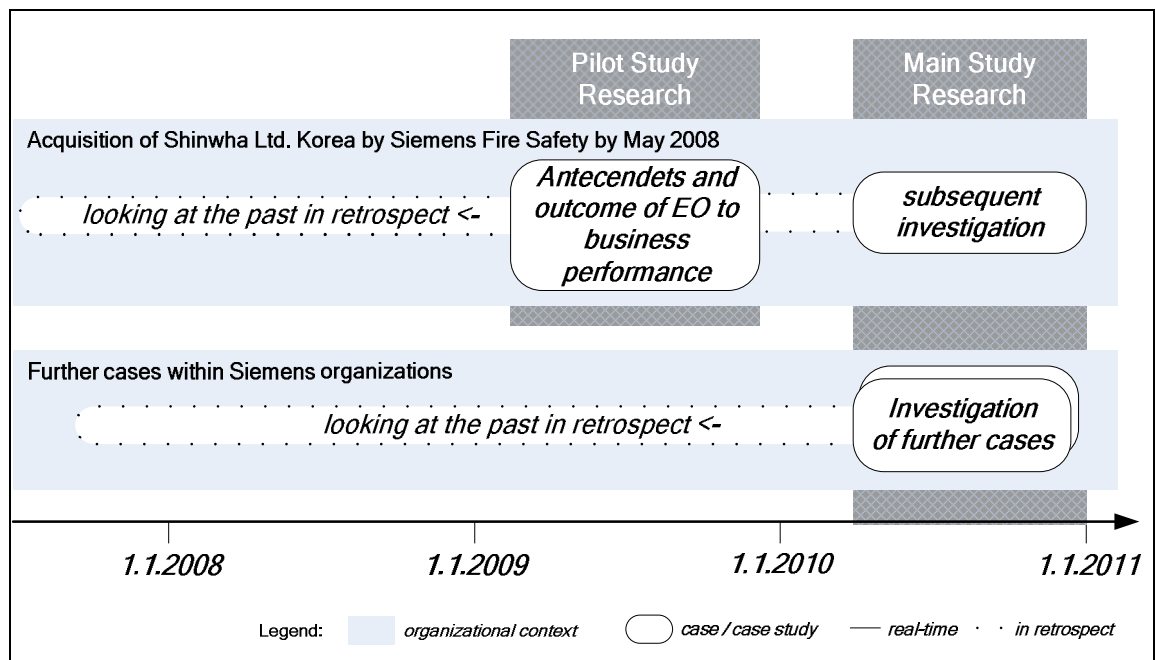


Figure 3-2 – Overall research concept

Hereafter, the case of the Shinwha acquisition and integration is described in more detail (please see Appendix B for a detailed description of the respective pilot study). Based on this context, the rationale for the subsequent selection of further cases is described in section 3.3.2.

3.3.1 The longitudinal “real-time” case of the Shinwha acquisition and integration

As discussed in the introduction of section 3.3, the main thesis leveraged from the previous pilot study and its findings (please see Appendix B for the summary) a real-time longitudinal research approach. Within the pilot study, the takeover of Shinwha Ltd (Korea) by the Siemens Fire Safety unit on 1st of May 2008 was researched towards the relevance and interaction of firm performance influencing factors – with a special focus on the aspect of involved entrepreneurial orientation and behaviour. The case study findings revealed entrepreneurial differences of relevant Siemens headquarters, Siemens Korea and Shinwha Ltd. management representatives and a significant correlation with the economic outcome for the company operations in the years before the deal, thus leading, finally, to the acquisition in 2008.

This case was intended to primarily reveal the “normal way of corporate entrepreneurship” at Siemens by contrasting the specific integration situation to the “entrepreneurial way” within the formerly independent SME Shinwha Ltd. Furthermore, the case was meant to specifically represent the entrepreneurial activities outside the official Siemens SMART³¹ initiative, and the management sponsoring of entrepreneurial behaviour. Subsequently and unexpectedly, the Shinwha integration developed into rather a critical case (Yin 1994/2003), since the economic development of the new entity did not live up to the expectations, and is currently considered by the Fire Safety management as a failed acquisition.

<i>Case name</i>	Shinwha acquisition and integration
<i>Case description</i>	Acquisition of Shinwha Ltd. (Korea), and its integration into the global Siemens Fire Safety organisation as well as the Siemens organisation in Korea.
<i>Main contribution</i>	Revelation of the “normal way of corporate entrepreneurship” at Siemens by especially contrasting its specific integration situation to the “entrepreneurial way” within the formerly independent SME Shinwha Ltd., alongside management sponsoring of entrepreneurial behaviour as given by the SMART initiative.

Table 3-1 – Case summary: the Shinwha acquisition and integration

3.3.2 Criteria for, and selection of, further cases

Siemens, as one of the worlds’ biggest MNE, is running a tremendous number of businesses representing all phases of the maturity life-cycle of industry and products. Siemens is perceived as significantly innovative (when measured by filed new patents per year and the successful launch of product innovations in existing business fields³²), but usually not known as specifically entrepreneurial in regards of going for new business venturing endeavours. As a

³¹ Simple, Maintenance-friendly, Affordable, Reliable and Timely. Siemens definition for products aimed at lower end world markets. Compare section 4.6 for a detailed description.

³² In fiscal 2010, Siemens announced 8,800 new inventions and listed 4,300 new patents. End of 2009, Siemens patent ranking was #2 at the European Trademark Office, and #13 at the US Patent & Trademark Office. Source: http://www.siemens.com/innovation/en/about_fande/patents/index.htm, last accessed 2011-02-02.

management reaction to this widely shared perception, over 200 SMART³³ projects have been started since 2007, aimed at the launch of specific new businesses in lower end markets as well as Asian-specific product adaptations and additions (depending on local languages and standards). However, the top management was satisfied with neither the speed of project implementation nor the rather limited scope of many projects, primarily focussing on product innovation aspects and local R&D and manufacturing optimizations. Therefore, Siemens CEO Peter Löscher presented to the top 300 Siemens managers at the yearly Siemens Business Conference in Berlin in October 2009 an additional SMART initiative explicitly aimed at “fostering local entrepreneurship”. The initiative was also a response to concerns about having 70% of all Siemens headquarters functions still located in Germany, while trying to run a truly global business. Peter Löscher asked the sector heads for a selection of twenty SMART projects to be expanded towards the establishment of a new headquarters function, responsible for the global business and located in Asia. All divisions were invited to apply for their running or planned SMART projects to be part of this initiative, and thus also to leverage from free-of-charge project support by the Siemens top+ management consulting team (please see section 5.6.5 for more details). These SMART projects represent, currently, the only identifiable actions declared as entrepreneurial endeavours and sponsored by top management.

Watching out for SMART projects most apt to be analysed for entrepreneurial aspects, detailed selection criteria consideration and a subsequent case selection have been carried out as part of the Research Plan (please see the introduction in chapter 1, and Figure 1-1). Aspects considered included degree of entrepreneurial focus of the endeavour, data accessibility, project maturity, involved steps of the value chain, intended business mandates, and potential type of case (e.g. typical, critical). A short-list of three cases – representing the three different sectors Industry, Energy and Healthcare of Siemens thus aiming at representation of the whole Siemens organisation – has been derived and aligned with the SMART initiative head office in Munich. Unfortunately, all subsequent efforts to collect primary and secondary data for the selected projects in Energy and Healthcare sectors proved to be of no avail. It was impossible to convince the respective project leads to spend any time for interviews, to help identifying further interview partners or to grant access to key secondary data. Furthermore, subsequent investigations about the maturity of these two projects revealed the emerging status of the endeavours, being still far away from building up a global business and an established

³³ The focus of these projects is set on SMART aspects: Simple, Maintenance-friendly, Affordable, Reliable and Timely).

respective headquarters organisation, thus promising little new knowledge in the researched context.

As a consequence, only the selected SMART project from the Fire Safety organisation could be leveraged as a second case to be researched (please see the subsequent chapter for the further case details). The impossibility of doing research outside the sector led to the decision to focus the further case selection considerations primarily on the specific organisational unit.

At the time these case selection considerations took place, Fire Safety top management declared the Security Products business (“SP”) within Fire Safety – built on two previously acquired companies (Bewator Ltd. in 2005, iMetrex Ltd. in 2007) – as void of any prospect to ever become profitable within the Siemens organisation. After years of consolidating the business by internal streamlining, and strengthening it with the two acquisitions, a project called “SP new setup” was therefore started in 2009 for the planned carve-out of the business into an independently run company, hopefully to be sold to a new shareholder in the best case. The additional selection of this “SP new setup” was seen as allowing for researching “maximum variation sampling” (Patton 2005) or a set of “polar types” of cases (Eisenhardt and Graebner 2007): the Shinwha case as a firm renewal activity by acquiring and integrating a new entity, the SMART project case representing new business venturing within the existing organisation, and the SP new setup as a business divestiture leading to the refocussed business of Fire Safety, and a new entrepreneurial setup for the subsequently independent small to medium sized entity. Looking at the cases from a Fire Safety entity perspective, case one represents the entrance of a formerly independent entity, case two an entrepreneurial activity within the existing Fire Safety entity, and case three the separation of integrated business into a new and independent entity (please see Figure 3-3 hereafter for the summary).

Within this setup, Shinwha was especially expected to reveal entrepreneurial behaviour in SMEs and effects of change when being transformed into an MNE entity. The SMART project should reveal mechanisms of entrepreneurial activity when launching a respective endeavour entirely embedded in the MNE. And the SP new setup illustrated the limitations of business opportunity recognition and exploitation within an MNE, and the subsequent (partially possibly “hoped for”) break up of it by a new SME setup.

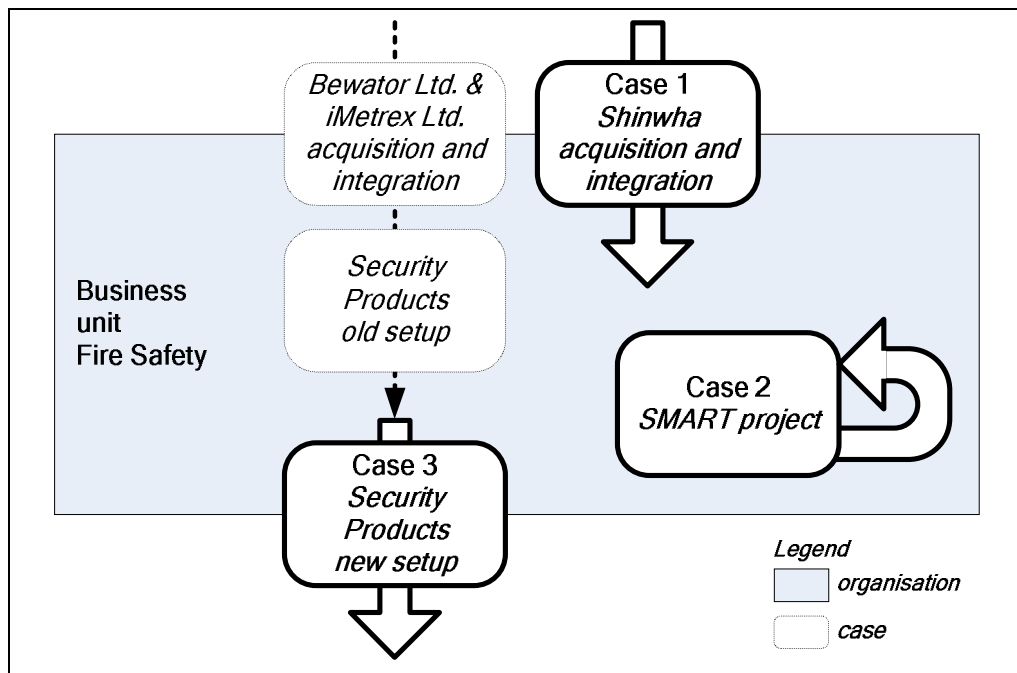


Figure 3-3 – Selected cases in the context of the business unit Fire Safety

3.3.3 Case 2: the SMART project

As outlined in the previous section, only the SMART project selected within the Industry sector (internally referenced as project “I-02”, and driven by the Fire Safety business unit) proved to be accessible for research and in a maturity status allowing for conclusions towards involved entrepreneurial aspects.

Started in 2007 in its China subsidiary, this project aimed at entering the low end markets of highly priced competitive fire detectors and fire panels not previously addressed by Fire Safety. A first project step taking place in 2007 and 2008 was focussed on setting up a local organisation in Beijing, defining target markets and required product features for the Chinese market, and the development of the products – mainly by simplifying and cost optimizing existing products. After the start of sales in China with respective new go-to-market setups, the project was expanded towards a global business scope with the establishment of a new headquarters organisation in Beijing responsible for the global profit and loss world-wide. By the start of 2011, product exportation to Russia and Brazil started and a new location in Beijing was used to centralise all respective activities. The case represents a successfully launched new business based on product innovation, the setup of a new organisational unit, and entering new markets world-wide.

<i>Case name</i>	SMART project
<i>Case description</i>	Entrance of low end fire safety markets by setting up a newly developed product portfolio, a global headquarters organisation in China and a product roll-out globally.
<i>Main contribution</i>	New business venturing activity entirely embedded within Fire Safety, with involved explicit management sponsoring, widely perceived as a successful entrepreneurial endeavour, comprehending product innovation, the setup of a new global headquarters and entering new markets world-wide.

Table 3-2 – Case summary: the SMART project

3.3.4 Case 3: the SP new setup

The SP new setup case represents a significantly entrepreneurial endeavour of splitting off the security products business (“SP”) of Fire Safety which was built on previous activities of the business unit in this field as well as the acquisition of Bewator Ltd. in 2005 and iMetrex Ltd. in 2007. The decision for a split off was justified by the Fire Safety management by the doubtful prospect of ever getting this business profitable within Siemens despite various internal streamlining and optimization actions. Since an attempt by the end of 2008 to sell the business directly to competitors also failed, the SP new setup project was started in 2009 for the restructuring and carve-out of the business into an independently run company, with the intention of it to be sold to a new shareholder as a best case scenario.

The SP new setup represents a critical case (Yin 1994/2003) of an unsuccessful business endeavour, when looking back on the failed attempts to make this business profitable by acquisitions and internal optimization. The case was meant to add perspective on limitations to entrepreneurial activity given by the organisational context of Siemens AG. It represents an alternative model, shedding many of the constraints imposed by being embedded in the Siemens context and leveraging from the advantages of a small and independent SME organisation in this field.

<i>Case name</i>	SP new setup
<i>Case description</i>	Acquisitions of Bewator (2005) and iMetrex (2007) by Fire Safety, a failed merger with similar operations, and the subsequent restructuring and carve-out into a new and highly independent legal entity.
<i>Main contribution</i>	Revelation of the limitations to corporate entrepreneurship within the Siemens context of complex MNE organisations, processes and rules.

Table 3-3 – Case summary: SP new setup

3.4 Data collection and data analysis

“One major feature [of well-collected qualitative data] is that they focus on naturally occurring, ordinary events in natural settings, so that we have a strong handle on what ‘real life’ is” (Miles and Huberman 1994:10). But how can the quality of the collected data be assured? (d; please see Figure 3-4 for the overview of all involved factors) What data can be collected in the sense of what already exists out there – and what data has to be “created” for the research? Generated data (“primary data”) always bears the risk of unintended bias by the researcher whereas already existing data (“secondary data”) may be very limited or may be created in ways, and for purposes, no longer known or not appropriate for the intended study. The relevant fields of data collection required for this thesis were informed by the initial scope given by the conceptual framework (b) derived from literature review (a) and thus theory driven at the outset (Glaser and Strauss 1967).

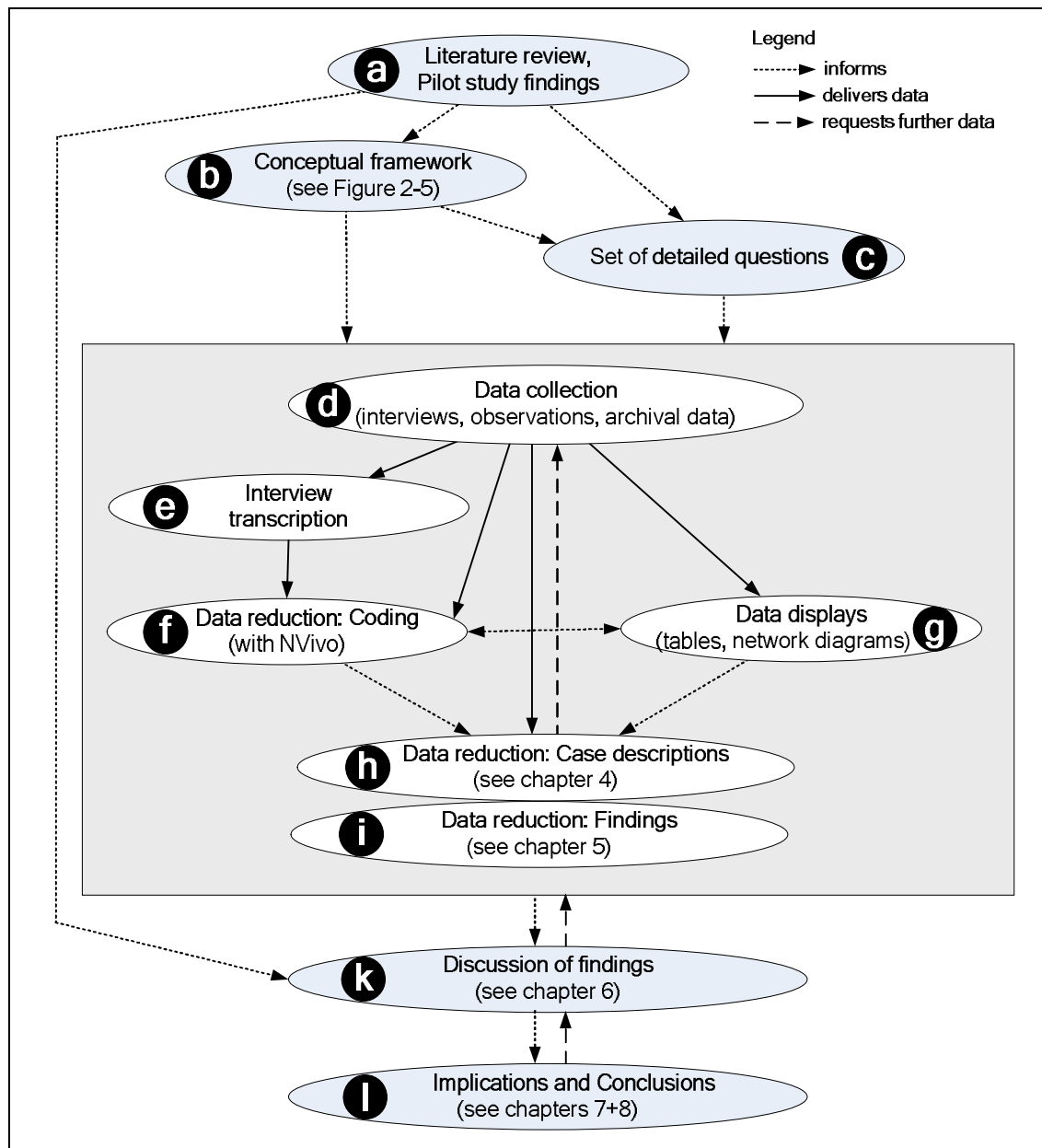


Figure 3-4 – Context and interactions of data collection and analysis
 (adapted from Miles and Huberman 1994:12, Figure 1.4)

But what actors and activities were to be investigated, and what data sampling methods used to maximise the richness and relevance of gathered data? The methods most frequently used in qualitative case study research to gain primary data are various forms of interviews, surveys and focus groups, and taking notes of observations. Interviews are seen as a preferred main primary data source when investigating episodic and infrequent phenomenon beyond everyday practice (Eisenhardt and Graebner 2007). Due to my lack of direct involvement in all three selected cases during the field research phase of the main study, and their geographical dispersion

(China, Korea, Sweden, Ireland, and India), no constellations for systematic direct observation or the setup of focus group work could be identified³⁴. It was decided to primarily focus on semi-structured interviews with executive managers who were responsible for comparable value chain elements within all three cases, and additionally include a key stakeholder from the SMART initiative as well as the overall human resource function at Siemens AG (please see section 3.5 for more details on the selection of the interview partners and their roles). Nevertheless, notes from opportunistic observations in the context of the cases were taken over the full period of the thesis study due to my immersion into the Siemens organisation as an acting senior manager. So the data collection (d) itself consisted of interviews, some observations and significant amounts of secondary data. A variation sampling was achieved by bringing in different views of actors and participants which included selecting the interview partners along all major value chain elements, and positive and negative instances within the selected cases (Guba and Lincoln 1989). So, by investigating three cases of different nature and multiple sources within, the research is considered to represent an amount of data triangulation, thus improving the completeness and reliability of the data towards the subsequent analysis (Eisenhardt 1989b).

Based on these considerations, the selected three core aspects – structural arrangements, granted mandates, and time preferences – were further detailed by formulating respective sub-questions (c) to inform the subsequent field research. However, since the field research was primarily taking place through interviews, it was decided to focus first on the individual understanding of the term “entrepreneurship” to allow for an interpretation of answers (research sub question RSQ1-1, please see Table 3-4 for the summary). Furthermore, participants were also asked for their perceptions about the relevance of entrepreneurship to Siemens entities (RSQ1-2) to give some foundation for their potential support of any recommendations to foster entrepreneurial activities that may emerge from this doctoral research.

³⁴ The pilot study included direct observations since I was part of the respective activities (compare Appendix B) Respective data was included into the main study findings due to the longitudinal character of the Shinwha case investigation.

RSQ-#	Research sub-question - Description
1. Understanding of the term “entrepreneurship”, and its perceived relevance	
1-1	What do you understand by the term “entrepreneurship” – do you see examples of “entrepreneurs” within the Siemens organisation?
1-2	How important is it – or would it be – to be entrepreneurial within Siemens?
2. Structural arrangements: organisational aspects, the entrepreneurial process, and involved ambidexterity and slack resources	
2-1	Which organisational aspects (like the Siemens matrix organisation, Siemens compliance rules, exclusive sales rights per country etc.) are relevant for entrepreneurial activities of subsidiaries? Which of these elements are perceived as hindering the entrepreneurial activities?
2-2	What kinds of definitions exist towards a local entrepreneurial process? Are these definitions different from the processes used for exploiting running business – and in which ways?
2-3	Are aspects of ambidexterity management and required slack resources addressed – and how? What are the effects towards entrepreneurial activities?
2-4	SMART initiative: how are proposed simplifications in organisation and processes defined and implemented (if any)? What is perceived as beneficial, where are the leaks?
2-5	What are current inhibitors and potential enablers in this field towards successful entrepreneurial activity?
3. Granted mandates – and resulting responsibilities and autonomy	
3-1	How are mandates of the subsidiaries defined? What kind of responsibilities and competences to decide are defined?
3-2	Who is informing – and who is informed - about granted mandates?
3-3	How precisely is the mandate defined? Is the preciseness of definition perceived as appropriate – which aspects are perceived as appropriate? Would it be preferable to have a more precise / a less precise defined mandate?
3-4	What are the gaps between these definitions and the perceived impact in practice? Are there fields of contradictions (of granted responsibilities and competences etc.) with other mandates existing?
3-5	Where are hurdles to overcome experienced within the Siemens organisations – and on the markets - when subsidiaries try to be global entrepreneurs?
2-6	In this field what are current inhibitors and potential enablers towards successful entrepreneurial activity (missing mandates, incomplete mandates, missing impact of provided mandate, etc.)?
4. Time preferences: aspects of long term orientation	
4-1	What are planned time horizons of headquarters and subsidiary strategies?
4-2	What are planned time horizons of headquarters and subsidiary innovations, new venturing and firm renewal activities?
4-3	What are typical periods of service of executive managers involved in the subsidiaries and in headquarters organisations? Are effects identifiable between the periods of service of involved executives and the intensity and success of entrepreneurial activities of subsidiaries?
4-4	What are relevant drivers towards longer (and shorter) time horizons of strategies, entrepreneurial activities, and the periods of service of involved key managers?
4-5	What are current inhibitors and potential enablers toward appropriate time horizons allowing successful entrepreneurial activities?
5. Interactions among the three key factors	
5-1	What kind of interactions can be identified among the three key factors?
5-2	What are the effects, and what is their identified relevance?
5-3	What could be derived from these factor interactions toward possible activities fostering entrepreneurial action?

Table 3-4 – Derived research sub-questions

Then, the selected aspect of relevant structural arrangements was unpacked. A first sub-question emerged regarding the influence of organisational complexity (like the Siemens matrix organisation, Siemens compliance rules, exclusive sales rights per country etc.) to entrepreneurial activities of subsidiaries (RSQ2-1). Linked to it, the existence and respective definitions of an entrepreneurial process, especially in the context of a local organisation, emerged as a further field of investigation. This included the aspect of potential differences to process elements solely aimed at opportunity exploitation (RSQ2-2). Since entrepreneurial action consists of opportunity recognition as well as subsequent exploitation, the resulting ambidextrous effects towards management and process have to be investigated to determine how this affects entrepreneurial activity (RSQ2-3). Taking the case of the SMART initiative (please see section 3.3.3 for the case selection rationale and section 4.6 for the case description) as the only identifiable endeavour being “officially” sponsored as an entrepreneurial activity by top management, simplifications in organisation and processes already implemented had to be identified and investigated for beneficial elements and remaining deficiencies (RSQ2-4). Finally, the current inhibitors and potential enablers of successful entrepreneurial activity were evaluated (RSQ2-5).

Looking at granted mandates as the second key field of investigation, it was decided to investigate the definitions of responsibilities and competences of local (subsidiary) mandates (RSQ3-1). Linked to this, the allocation of such mandates – who is informing, and who is informed – was expected to provide further insights (RSQ3-2). Next, the preciseness of mandate definition, the elements contained in the definition, and the perceived appropriateness of preciseness and details were selected as a further sub-question (RSQ3-3). Gaps between these mandate definitions and the perceived and evidenced impact in practice, and potential fields of contradictions (of definitions towards granted responsibilities and competences etc.) with other existing mandates were seen as relevant for the investigation (RSQ3-4). By expanding the scope again to global entrepreneurial activity of local organisations, hurdles to overcome within the Siemens organisations in the context of granted mandates were to be clarified (RSQ3-5). As a final sub-question, the current inhibitors and enablers related to mandates and successful entrepreneurial activity (e.g. missing mandates, incomplete mandates, missing impact of provided mandate), were explored (RSQ3-6).

The aspect of time preference was unpacked into five sub-questions. As a first element, time preferences in current business planning, headquarter and subsidiary strategies, and headquarter and subsidiary innovations, new venturing and firm renewal activities were to be identified

(RSQ4-1, RSQ4-2). The pilot study results already indicated the potential relevance of investigating typical periods of service by executive managers involved in the subsidiaries and in headquarters organisations, and correlations between these periods of service and the intensity and success of entrepreneurial activities (RSQ4-3). To understand the *status quo* of current orientations, as well as potential levers to change it, the relevant drivers towards longer or shorter time horizons of strategies, entrepreneurial activities, and periods of service of executives had to be understood (RSQ4-4). Finally, current inhibitors and potential enablers which would allow for time preferences most appropriate for successful entrepreneurial activities had to be identified (RSQ4-5).

Similar to the pilot study research, the research on the interactions between these three main factors was expected to provide additional knowledge on how to foster entrepreneurship successfully in firm practice. Therefore the kind of interactions (RSQ5-1) and the caused effects and their relevance (RSQ5-2) had to be identified. The insights gained on interactions were to be reviewed towards possible activities fostering entrepreneurial action (RSQ5-3). Beyond these research sub-questions prepared before the field research, it was clearly expected to gain knowledge on further relevant factors through primary and secondary data. These further aspects were to be integrated into the overall findings and derived implications and interactions among them discussed to detect potential multi-factor patterns typically relevant in all real life settings.

Out of the set of detailed research sub-questions a questionnaire structure was derived as part of the research plan. During the further decomposition of the sub-questions into a full set of specific interview questions, the potential applicability of survey-type instruments emerged. Around the core definition of entrepreneurial orientation in the context of corporate entrepreneurship, specific measurement scales like the “Enterscale” (Khandwalla 1977, Miller and Friesen 1978, Miller and Friesen 1984, Covin and Slevin 1986, Covin and Slevin 1989, Knight 1997), the “CE scale” (Zahra 1991, Zahra 1993a) or the “Corporate Entrepreneurship Assessment Instrument (CEAI)” (Hornsby et al. 2002) exist. The applicability of the Enterscale questionnaire (as the most used instrument) was tested during the pilot study and in a pre-phase of the main study, but found of little assistance towards the research question, mainly because of three adverse effects. First, participants were obviously not familiar with the elaborated concepts and respective terms, and the limited interview time did not allow for the sound explanation necessary for an informed participant judgment. Second, many participants openly stated they did to not have enough market and competition information to make judgments

relative to competitors. And third, the questions do not really address actual entrepreneurial activities taking place but, rather, the perceived individual notion of pursuing such endeavours. Therefore, it was decided to ask interview participants in the main field research for concrete, candid examples of entrepreneurship, comprising people and functions perceived as behaving entrepreneurially and examples of entrepreneurial activities taking place. Subsequently, the single aspects of the entrepreneurial orientation model such as risk averseness and decisiveness were covered as part of overarching questions dealing with processes, organisation, long term orientation etc. In a similar way, the operationalisation of the construct of Entrepreneurial Management (EM, please see section 2.1.8) by 20 specific questions (Brown et al. 2001) was not seen as directly applicable in the chosen approach of semi-structured interviews. Furthermore, no results on EM exist so far in an MNE context (Sassmannshausen et al. 2009) as a basis for comparisons.

The resulting initial, and quite comprehensive, structure was tested for its applicability with a first interviewee (please see section 3.5), and subsequently reworked by reducing the number of questions and optimizing their sequence. Based on the different roles of interviewees, applicable questions were selected for creating the concrete interview forms (please see Appendix G for the resulting questionnaire structure). Interviews were conducted either face to face or via Outlook Live-meetings. Questionnaires were handed over to the participants at the time of the interview. To clarify the construct of entrepreneurship, interview participants were first asked for their understanding of the term (please see section 5.1, and section K1 in Appendix K), and subsequently introduced to the model of entrepreneurial opportunity recognition and exploitation (please see Figure 2-3 in section 2.1.14) as a main reference for explaining aspects involved.

Following a monolingual approach (Welch and Piekkari 2006), all interviews were conducted in English, with non-native speakers whose command of English was at a high level (given that it is Siemens' corporate language). All interviews were audio recorded, and I subsequently transcribed them entirely (e). Data reduction as part of the analysis was done in several ways. NVivo was used as the main software tool for summarising, packaging and aggregating the obtained data by an evolving coding structure (f). This structure was initially based on the key components of the conceptual framework, and further expanded by new aspects emerging from the data (please see Appendix I for the resulting coding structure. These thematic codes were applied to the transcribed text, and a variety of analyses performed (e.g. searching for causal relationships, cluster analyses, etc; see Figure 3-5 for a coding example). Out of this analysis,

data displays (g; such as diagrams depicting interactions such as Figures 5-4 and 5-5 or the tables in Appendix K) and narrative descriptions (h, i) were evolved to summarise the identified elements and patterns of interactions.

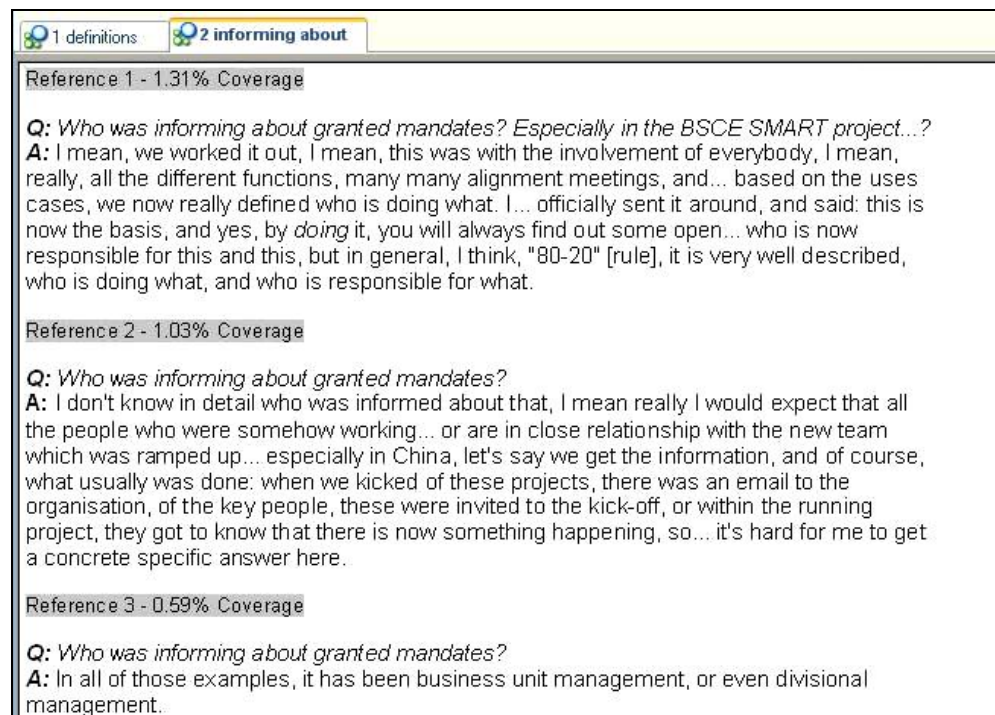


Figure 3-5 – Example of data coding with NVivo

A first cycle of data reduction by coding (f), derived data displays (g), and detailed descriptions of the cases and respective findings (h, i) led to further cycles of (mainly secondary) data gathering and subsequent analysis. Data displays (g) helped to reduce the “extended text” of the collected data and helped to deduce the key points of the analysis by building clusters, and making contrasts and comparisons within the case data towards relevant aspects of corporate entrepreneurship and activities to foster it further (please see Appendix K for data displays and the subsequent clustering). Given the nature of a written paper, the iterations between data collection, coding, displaying and reduction simply show up in the resulting outcome and cannot be depicted in interim steps.

As part of the discussion of the specific entrepreneurial aspects found within the researched cases (k), the comparison of the case findings with existing literature, including theory, models, and practical findings, was deliberately done after a first complete write up of the researcher’s own research results, in order to minimise biasing effects from other studies’ results towards the researcher’s cases. Specific propositions towards potential activities for fostering

entrepreneurial behaviour were derived from the findings (please see recommended activities RA-1 to RA-15 outlined in chapter 5 and summarised in Table 6-2).

Finally, the knowledge gathered allowed implications to be derived and conclusions drawn (1) towards recommended activities to foster entrepreneurial behaviour in local Siemens entities on the side of informing practice, and added new knowledge on a theoretical side (please see chapters 6 and 7).

3.5 Case specific data sources

To identify required interviewees, the set of functional owners, being relevant in entrepreneurial endeavours and creating a comprehensive coverage of the aspects to be investigated, was selected by using the Siemens Reference Process House³⁵ as a guiding structure. Functions from the general management (represented by CEO/CFO or overall project leads) and the key business process areas (i.e. R&D, product management and sales) were involved in the setup, operation and judgment of relevant organisational aspects, type of entrepreneurial mandate, and long term orientation to be investigated in this study. Additionally, human resource management played an important role regarding involved long term orientation and people capability aspects. Thus, key representatives of these functions have been selected for the interviews (please compare Table 3-5 for the summary³⁶).

Valid in all three selected cases, these specific entrepreneurial activity set-ups are surrounded by adjacent and superior organisations (e.g. other country organisations, and “direct” line management as represented by the Siemens business units, divisions, and sectors). Unfortunately, this opened up a potentially huge list of further people involved, especially when looking at the large number of local Siemens country organisations. To keep the quantity of interviews within a feasible level, the investigations were limited to the directly involved line management (in all three cases: from the respective business unit). The aspects of country

³⁵ The Siemens Reference Process House is the overall process framework to be used throughout the whole organization. It defines the three key business process areas Customer Relationship Management CRM (“sales”), Product Lifecycle Management PLM (“R&D and product management”), and Supply Chain Management SCM (“manufacturing”). This is accomplished by the overall Management Process (“general management”) and Support Processes (“human resource” functions, IT, controlling etc.).

Compare Figure 4-2 for a full overview.

³⁶ All names of interviewees changed for confidentiality reasons.

organisations, i.e. primarily the product sales from the local organisations into these countries, were reflected by local management and line management feedbacks. Also included were two representatives of the Siemens corporate management, as the initiators of the SMART initiative and the definitions of the Siemens human resource models.

Organisations and Roles		Interviewees by cases			Siemens AG overall perspective
		Case 1 Shinwha acquisition and integration	Cases 2 SMART project	Case 3 SP new setup	
Headquarters	CEO/PL	Peter Mueller			Ralf Dunkel
	R&D, PM, Sales	Michael Bosshard	Karl Huber	Jan Traber, Connie Clark	
	HRM	Hans Meier			Sandra Amrein
Local entity	CEO/CFO/PL	HW Kim	Karl Huber	John Davis	
	former CEO/CFO/PL	<i>Daniel Bertok</i> <i>OK Park</i>		Keiko Safaia	
	R&D, PM, Sales	SH Wong, <i>YK Lim</i>	Yao Wang Paul Amstutz	Robert Schmid	
Secondary Data		financial reports (monthly, quarterly, yearly)			
		project planning & reports			
		employee surveys			
		management reports			
Legend: PL = project lead, PM = product management, HRM = human resource management, R&D = Research and Development; <i>Names in italic: interviewees within the pilot study</i>					

Table 3-5 – Case specific data sources

Secondary data sources comprised the financial reports (monthly, quarterly, yearly) of the researched projects and business units as well as Siemens AG, project planning and reports, employee surveys (regular and project specific), and specifically created management reports (especially reporting the SMART project advancement).

All three cases take place within the organisation of Building Technologies division. The majority of interviewees are not only engaged in one specific case but are also active in many further proceedings of the business units, the division, or even the top corporate level. Therefore, the views and information provided by respondents may also include knowledge and experiences beyond one specific case. To reveal case specifics, interview questions were explicitly designed to focus on the case of interest, and the report on the findings indicates to which extent respondents' answers could be clearly assigned to specific settings.

Since it was the main focus of the thesis to identify activities and factors that could foster entrepreneurial behaviour within the Siemens organisation in future, many of the participant responses cannot be assigned to one specific case only but reflect patterns existing throughout the entire Fire Safety business unit, the Building Technologies division or even Siemens AG.

3.6 Feasibility considerations and cultural issues

My role as a member of the Strategy and Business Excellence team at Siemens Fire Safety carried no direct involvement in the SMART project and the SP new setup (cases two and three) or the ongoing business activities at Siemens Shinwha during the main thesis research (case one). So my position avoided possible conflicts of being actor and investigator at the same time, but provided the necessary authority (in combination with the communicated role as a researcher) to investigate the given context.

Fortunately, almost all relevant data like documents and meetings were held in English, leaving simply some informal discussion in headquarters held in German. Since German is my mother tongue, I was able to translate respective notes to achieve a data base fully held and processed in English.

But, what were possible challenges in creating and interpreting the results in respect of cultural differences? Fortunately, I have worked with all interviewees planned for case one (Korea) and case two (China) for years, and also on site in Asia. Additional insights to judge interactions in the cultural context were documented for Korea by following the five dimensions of Hofstede (2001) and respective measured values as part of the pilot study (please see Appendix B for a comprehensive summary). As a main learning, feedback from the Asian side to management activities was typically much more positive than from the European side, thus representing a constant bias in answers. Additionally, negative statements are made in different ways in Asian culture, requiring a differentiated analysis also considering body language where applicable since a spoken “yes” could easily be inverted by the physical behaviour.

3.7 Ethical aspects, conflicts of interest and potential risks

A researcher is required to carry out his studies in an ethically “correct” manner, avoiding conflicts of interest and minimising potential risks. The following considerations were used to identify these aspects as far as relevant in advance of the field research, and definitions and provisions were subsequently derived to act accordingly.

Ethics is a branch of philosophy which deals with the aspect of moral duty and obligation, based on moral values and relevant for individuals as well as groups. Ethics could roughly be structured into three specific fields: (1) descriptive ethics empirically investigating moral beliefs of people, (2) meta-ethics as the study of the meaning of moral language and the metaphysics of moral facts, and (3) the wide field of normative ethics which investigates “how one ought to act morally” (Velasquez 2002, Beauchamp and Bowie 2004, Jennings 2006; and Merriam-Webster Dictionary). In the context of international business and management, “[b]usiness ethics is the applied ethics discipline that addresses the moral features of commercial activity” (Zalta 2008). The whole internal and external environment of a firm can be seen as “ethically” relevant: employees with their personal values, interests and rights, shareholders, customers, competitors, government and society (Jennings 2006:39-40).

To identify the concrete challenges of ethical behaviour, a potential area of conflict of interests and risks, all involved parties were identified first. Siemens AG took part as my employer as well as providing the selected research ground. Some of its employees (hereafter called “participants”) served as interview partners, and were “observed objects” and sources of secondary data. Members of the University of Strathclyde acted as the academic supervisor. This left, finally, me acting in the roles of a senior manager as well as a researcher. But what aspects were these parties bringing which had to be considered whilst carrying out the study – and might they also have been of conflicting nature? A first perspective, given by business ethics and the guidelines and rules of conduct of Siemens AG (a, please see Figure 3-6 for the summary) comprised financial aspects (f), risk management and damage avoidance (c), and keeping data confidential (e). Second, the University of Strathclyde “application form for university ethics committee” (b) required reflection and definition of aspects of involved ethical questions, confidentiality (e), potential risks and hazards (c), financial funding (f), and participant consent (d; please see Appendix F for the respective form). Third, Siemens Fire Safety management stated its interest in obtaining results from the study for use in further management practice (k); the University expected a pilot study as well as a DBA thesis (m) and my professor would like to jointly publish a derived article in a scientific magazine (n). Finally, participants expected adequate information about the study, their role and rights (d), confidentiality of critical information (e), risk management and damage avoidance, wanted to bring in their experience and convictions (h) and were interested in the results of the study or parts of it (i). Diverging financial interests (f) are the most cited area of conflict about business ethics in the literature. Fortunately, there was no personal financial interest rising from the side of my DBA studies since I obtained no funding. Nor did I have any prospect to obtain any

funding from the final results or being promoted to a better paid job at Siemens afterwards. Linked to the financial perspective is the aspect of time spent (g). Working full-time for Siemens, the company expected no working hours to be spent on the study. At the same time, I tried to deliver a professional piece of research within the expected time frame. This dual work load was covered by sabbatical days spent for doctoral seminars in Glasgow (defined in a written mutual agreement), the usage of a significant backlog of vacation days (around 50) and my weekends, primarily reserved for the study.

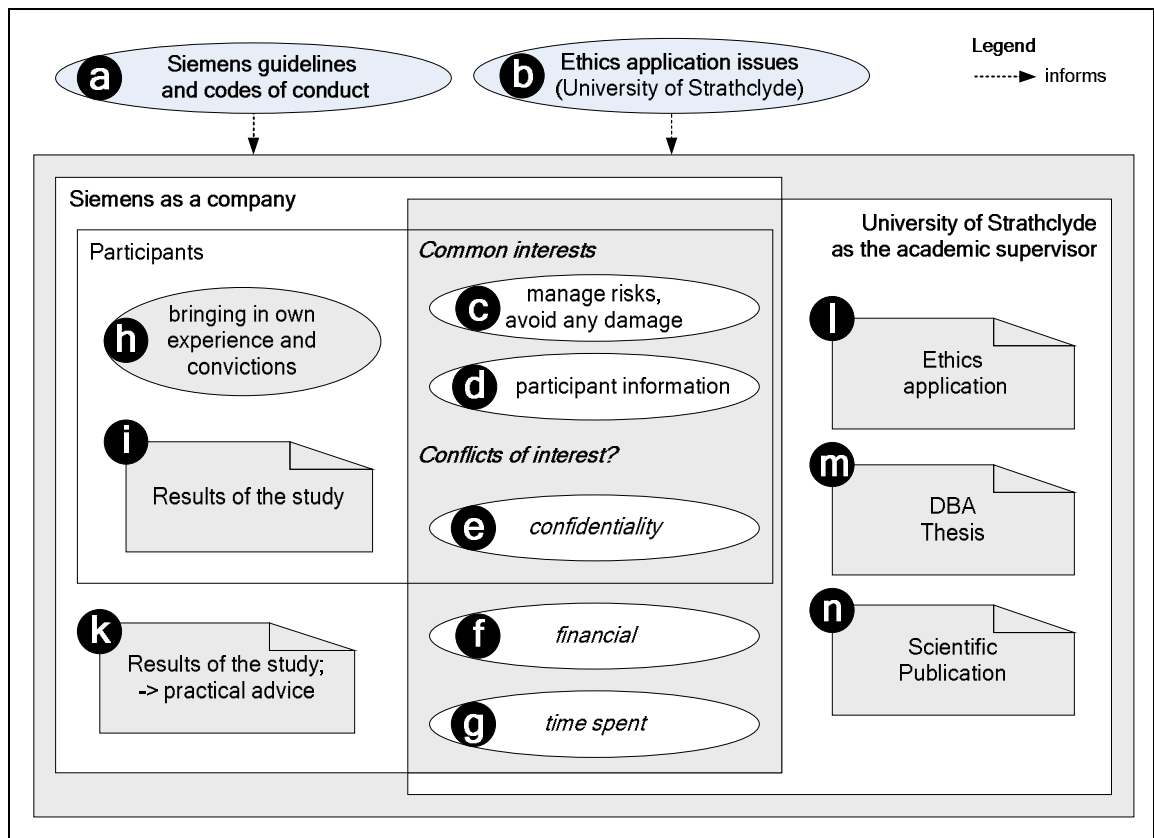


Figure 3-6 – Ethical aspects, possible risks and conflicts of interest

As a next aspect, I saw the risks to be managed (and respective damages to be avoided, c) primarily in the shared experiences and revelation of private thoughts and feelings of participants, and confidential business data relevant for competitors. For both aspects, provisions for keeping confidentiality (e) were put in place to avoid tracking down sensible contributions to respective persons and leakages of crucial business data. The full thesis was specified as confidential and shall be accessible only for directly involved supervisors and examiners of Strathclyde University. Participants will have access to their own contributions for review purposes. Furthermore, participants were informed of their right to withdraw at any time

should the process feel uncomfortable to them (participant information, d, please see next paragraph). My supervising professor was additionally offered as an independent point of contact for participants. Publication of business figures followed the rules given in the respective Siemens guidelines. There was no access to research data other than for named researchers and supervisors (please see ethics application, l). Electronic data was stored digitally in a secure password protected location with anonymity ensured. Hard copies were stored in a protected private location.

Participant information (d, please see Appendix F for the form) covered the aspects of agreed procedures regarding data gathering, storage and withdrawal; the general context of the study; and explicit rights of interview partners. However, people also contributed to observations and archival data creation without being explicitly informed in a formal procedure. Within this study, possible observations were recorded by notes only and, thus, did not require participant consent as required by law for audio or video recordings.

3.8 Research limitations of the chosen methods

In section 3.2 I outlined some caveats regarding the chosen case study methodology, specifically in relation to the nature of generalisability and transferability of case study findings. Here I outline several limitations of the chosen research methods.

The carried out semi-structured interviews represent the view of 15 top and middle managers from Europe and Asia. As a first limitation, the potential “real but hidden entrepreneurship” in the organisation could have been missed. To partly overcome this, questions were added towards persons in the organisation perceived as specifically entrepreneurial, and primary and secondary data was analyzed to identify potential entrepreneurial endeavours taking place beyond planned activities. Second, the interview answers have to be expected to contain (even unintentional) bias (Tuchman 1981). Data from interviews were therefore complemented with significant amount of secondary data to achieve a certain triangulation by multiple data sources (Denzin 1978). Third, cultural differences among interviewees, and interviewees and me as the researcher may have affected the understanding and interpretation of answers (Hofstede 1980). This was considered by choosing Asian interviewees who are familiar with a European culture of addressing challenges openly as far as possible (although this inevitably also introduced a certain bias). Fourth, the chosen monolingual approach using English as the sole language of primary (and secondary) data may have limited the possibilities of non-native speakers for delineating details and providing authentic and “rich” responses exhibiting “subtle nuances”,

thus potentially just “repeating company policy and falling back on jargon” (Welch and Piekkari 2006:428). However, all interviewees were fluent English speakers (as given by English as the corporate’ language). For the interview questions, an “international” English devoid of dialect, idioms and colloquialisms was used ‘to reduce the impact of interviews that are “linguistically dysfunctional”’ (Welch and Piekkari 2006:429). Furthermore, distortion and inaccuracies of answers caused by language translations could be avoided.

Finally, a potential conflict of interest of me as a researcher and manager (please compare the previous section) may have impeded the willingness of interviewees to give feedback openly. However, being a member of the organisation for many years gave me a deep knowledge of its operations and history, thus providing a significant advantage in interpreting the data. There are often such trade-offs in qualitative fieldwork.

3.9 Summary

This chapter outlined the chosen case study methodology and respective qualitative methods of data gathering and interpretation, seen as most fitting to the chosen research questions. The appropriateness of the ontological and epistemological stance of social constructionism is discussed, along with the decision to use interpretivism as the theoretical perspective. The chapter explained the rationale of setting out with neither a “blank sheet” nor a selected theory simply to be tested. The case selection was explained in the context of the previously derived research framework, the selected key aspects within, and the possibilities and limitations given by the company environment. The description of steps carried out in data collection through interviews, some observations and significant amounts of secondary data with outlined case-specific data sources was followed by a description of the steps, methods and tools used in the data analysis and data representation. Finally, potentially relevant issues of culture and cultural differences, ethics, risks and conflicts of interests were identified and discussed.

The next chapter provides overall descriptions of the three investigated cases outlining firm histories, current business fields, and the main organisational aspects.

4. Case descriptions

The previous chapter described the applied methodology and methods of the research, the case selection, the data analysis process, and involved aspects of feasibility, ethics and risks. This chapter contains the overall descriptions of the three investigated cases. Since all three cases took place within Siemens AG and the business unit Fire Safety therein, the firm with its history, the current business fields within which it operates, and main organisational characteristics will be depicted first (please see section 4.1). Core elements of its process and organisational definitions are then described in section 4.2. The specific Siemens programs and definitions linked to innovation – “top+” and “3i” – are discussed in section 4.3, followed by a summary of the Siemens Leadership Framework and the respective “top talent” program in section 4.4. Main aspects of the specific cases are described in sections 4.5 to 4.7 to frame the detailed reports of findings given in the next chapter. Finally, a short summary of this chapter is provided in section 4.8.

4.1 Siemens AG, the business unit Fire Safety and its history

Siemens AG offers many products, solutions and services in the fields of general industry, healthcare, and energy generation and distribution. These businesses are consequently run by three respective sector organisations operating globally³⁷. Within the industry sector, a building technology division integrates the Siemens offerings in fire safety, security, and building automation by four specific business units (please compare Figure 4-1 for the structural overview). The business unit Fire Safety (FS) represents the activities in the market of electronic products and solutions used to detect and suppress fires, as well as the product business in two adjacent fields of electronic security (i.e. access control and anti intruder systems). The business unit Security Solutions (SES) provides its customer solutions based on the respective products of Fire Safety, and Building Automation (BAU) provides solutions for heating, ventilation and air conditioning mainly based on the products obtained from the business unit Control Products and Systems (CPS). Headquarters of all Building Technology organisations are located in Zug, Switzerland. The business units focus on their specific area of market offerings as well as on combined solutions comprising all disciplines, called “total building solutions”.

³⁷ Organization as valid until March 2011 (as per 1st of April 2011, a further sector was founded)

Historically, the Building Technology division represents, primarily, the industry sector of Elektrowatt AG, taken over by Siemens at the end of 1997, with some similar but much smaller activities of Siemens added. Within Elektrowatt, Cerberus AG represented the business in fire safety and security products and solutions. Cerberus AG emerged as a spin-off from ETH³⁸ in 1941, industrializing the break-through invention of the ionisation detection principle by the Swiss Dr Walter Jaeger and Dr Ernst Meili in the same year – the first mechanism identified to detect fire aerosols electrically (Meili 1990). By the mid 1990s, this market had become a multi-billion dollar business worldwide with additional products for extinguishing fires automatically, and Cerberus AG gained the world market leader position in this field. Key for market growth was the establishment of strong national and international regulations, declaring such equipment mandatory in most types of publicly accessible buildings.

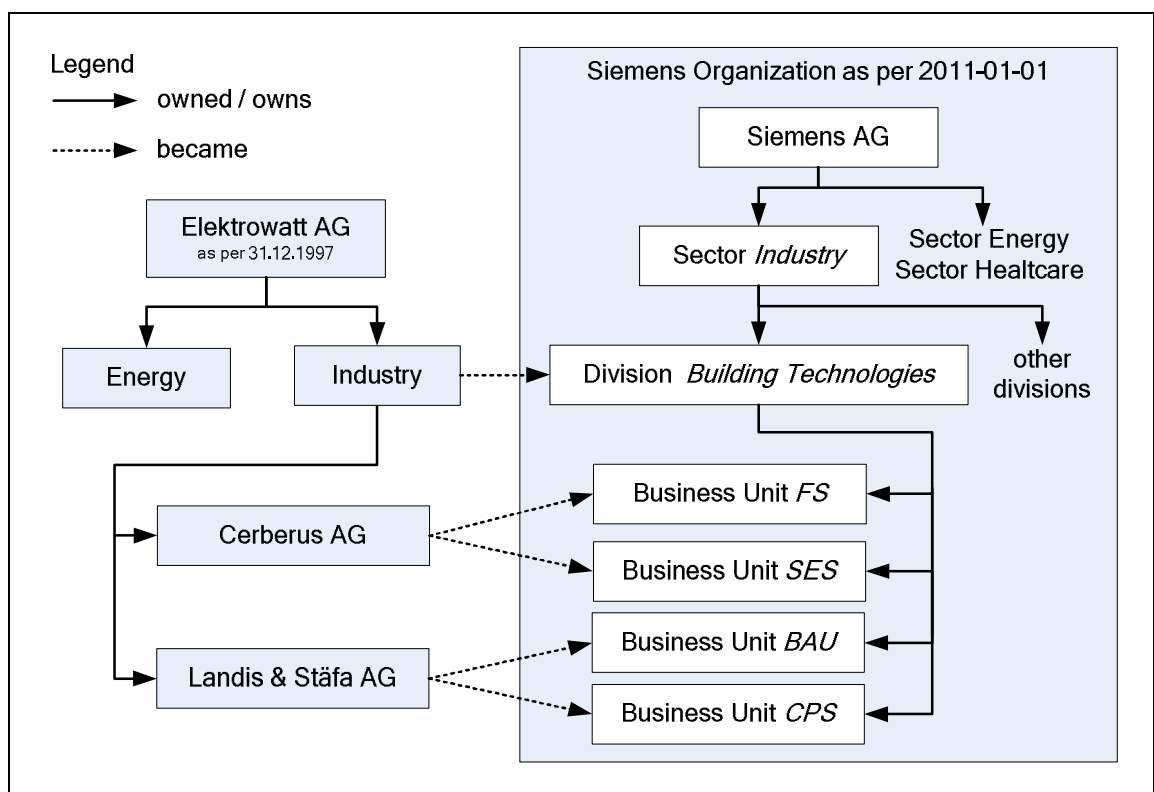


Figure 4-1 – Relevant Siemens organisation and its predecessors

Since the 1980s, Cerberus AG was also active in the adjacent business of various fields of electronic security products and applications. Key products and solutions were offered in the

³⁸ Eidgenössische Technische Hochschule, Zürich, Switzerland

areas of access control systems, intruder detection and CCTV equipment³⁹. Cerberus AG was subsequently split into the business unit Fire Safety (representing all fire safety activities, product management, R&D and manufacturing of security products) and the business unit SES (comprising all solution activities in Security applications). Similarly, the former Landis & Stäfa AG – offering products and solutions for heating, ventilation and air conditioning in buildings – was split into the business units CPS (comprising the product management, R&D and manufacturing) and BAU (comprising solution activities).

Cerberus AG was considered world market leader in the fire safety business since the mid 1990s, with UTC⁴⁰, Tyco⁴¹ and Honeywell⁴² as its closest competitors on a global scale. The subsequent Siemens Fire Safety business unit lost its leading role in recent years, dropping at the start of 2011 to position three behind the new global leaders UTC and Tyco⁴³. In fact, the fire safety industry is considered to have been in consolidation since the end of the 1990s, with bold acquisition moves by UTC, Tyco and Honeywell. As the biggest acquisitions in recent years, Honeywell bought the main parts of Novar Plc. (UK) in December 2004 for US\$ 2.3 billion, and the GE Security division was sold for US\$ 1.8 billion in November 2009 to UTC. Despite having been part of the due diligence of almost all of the bigger acquisitions taking place in these years, Fire Safety did not manage to buy any of the competitors' activities (aside from the acquisition of Shinwha Electronics in South Korea representing a local business). Reported key factors for failing were slow internal decision making in the bidding process, and the difficulty of convincing the Siemens top management of the necessity of significant investments. This is especially attributed to the perceived unimportance of the fire safety business by created turnovers, profits and strategic importance in the context of the overall Siemens operations.

A further key challenge for Fire Safety is an ongoing change in its industry towards significantly higher stakes of extinguishing products and solutions (i.e. automatic fire

³⁹ Closed-Circuit Tele Vision, video cameras and respective monitors within a closed system, typically used in higher security areas, shopping malls etc. This business field has been closed with the “SP new setup”.

⁴⁰ United Technologies, compare <http://www.utc.com>

⁴¹ Tyco International Ltd., compare <http://www.tyco.com>

⁴² Honeywell International Inc., compare <http://honeywell.com>

⁴³ As reported by external market intelligence firms like Memoori Business Intelligence Ltd. (<http://memoori.com>)

extinguishing by natural gases, chemical gases, water, and combined systems) in the overall fire safety business, representing around 60% of the existing total market turnovers. With only 5% of current turnover of Fire Safety created in this field, no profitable business in this segment could be achieved. Even worse, a major business shift from old fashioned water sprinkler facilities towards high-tech water mist systems⁴⁴ – increasing the market attractiveness and profitability margins fundamentally – has so far been missed by Fire Safety almost completely due to lack of products and market access. Additionally, IT companies like IBM and Cisco started to enter the business fields of involved software and networks on the side of fire detection. Fire extinguishing technologies and products, however, are much harder to copy for IT firms. Therefore comprehensive fire safety product portfolios and solutions still represent a high market entry barrier.

4.2 Key elements of Siemens processes and organisations

All business processes within Siemens AG are part of the Siemens “Reference Process House” frame work definition. Key process areas therein are the customer relationship management (CRM, 1), the Supply Chain Management (SCM, 2), and the Product Lifecycle Management (PLM, 3), accomplished with an overarching Management Processes (4), and additional Support Processes (5, please see Figure 4-2 hereafter for the summary). The framework also defines four levels of further refinement, thus allowing the adaption to specific business types and business needs. The implementation down to concrete and detailed activities and document templates is division-specific. But so far, only comprehensive processes for PLM⁴⁵ and SCM have been defined and rolled out at Building Technologies division, with a rather weak definition for SCM – and no defined activities for the Management Process.

⁴⁴ Water mist systems use highly elaborated valve technologies blending air and water into a fog, thus requiring much less water for the same extinguishing impact as pure water based sprinklers.

⁴⁵ The BT implementation is called Product Evolution Process (PEP) and covers all steps (plan, define, realise, commercialize/operate, phase-out; and the overarching portfolio management) with detailed descriptions of process steps, roles, responsibility etc.). To allow optimized processes in small and simple as well as large and complex projects, three different types of PEP are provided: “PEP real tiny”, “PEP tiny”, and “PEP standard”.

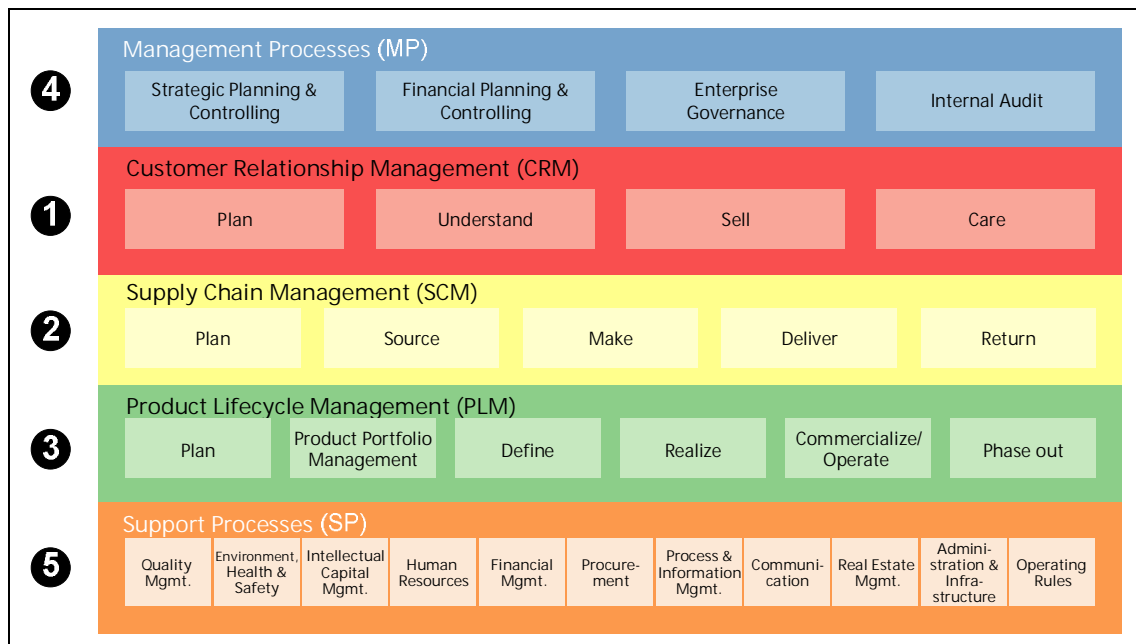


Figure 4-2 – Siemens Reference Process House framework definition⁴⁶

Using this Reference Process House definition as the basis, and interpreting it as the value chain definition⁴⁷, the building technology division defined a three-level concept as the core approach to define its organisation, with the supply chain management referred to as the “level-1”; the Product Lifecycle Management as “level-2”, and customer relation management – or “sales” – as “level-3”. Headquarters and subsidiaries are directly responsible for level-1 and level-2 functions, whereas customer relationship (level-3) is done within country organisations, with an overarching organisation coordinating the sales activities of all business segments within a specific country. A subsidiary in a specific country can be combined with the sales function (e.g. Fire Safety Korea) or the organisations can exist separately (with separated heads of organisation, e.g. Fire Safety China). Additionally, country organisations are interacting with cluster organisations which summarise business control in twenty distinct geographic regions world-wide and offer centralised business services (please see Figure 4-3 for an overview of the described organisational entities and their relations, and compare the previous section for the

⁴⁶ Last assessed October 28th, 2010, at <https://processworld.siemens.com>

⁴⁷ The Reference Process House development based on the value chain definition of Porter as the starting point of definition.

context of Siemens sectors). Siemens process definitions are significantly more stable over time than the organisational setup⁴⁸.

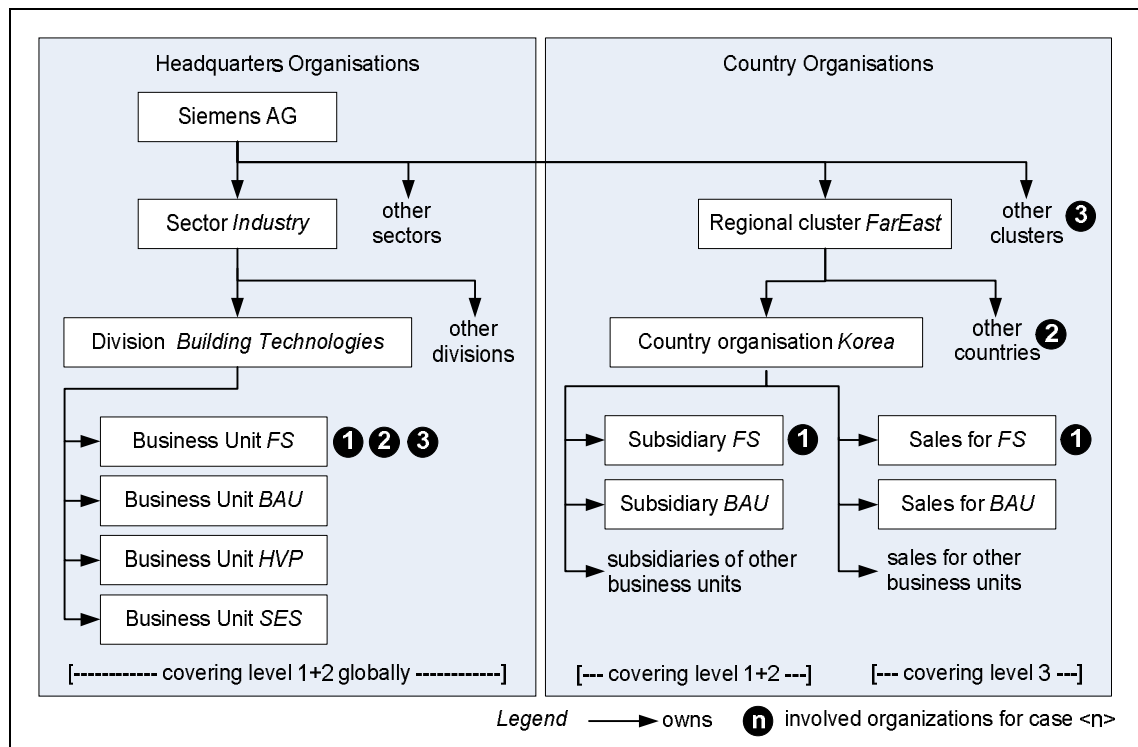


Figure 4-3 – Overall Siemens Matrix Organisation as of 1.1.2009

When using the created chart to outline the organisational parts involved in the three cases researched (indicated by the numbers 1 to 3), the business unit headquarters is always a part. In the country organisations, the Shinwha acquisition case (1) involves the subsidiary and sales organisation in Korea, the SMART⁴⁹ project (2) takes place in the respective organisation in China, whereas the Security Products (SP) new setup (3) includes various European subsidiaries and sales organisations.

⁴⁸ Siemens Process House definition lasts for more than 15 years already, whereas the last fundamental organizational changes – the establishment of cluster offices or the foundation of SMART headquarters – just took place in the last two years.

⁴⁹ Simple, Maintenance-friendly, Affordable, Reliable and Timely. Siemens definition for products aimed at lower end world markets.

4.3 Innovation at Siemens: the *top+* and *3i* programs

Two specific programs especially relevant for the entrepreneurial behaviour and activity within Siemens AG are described here to give the context for subsequent findings and discussion.

The *top+* program and respective *top+* awards

Top+ is the corporate business excellence program of Siemens started in 1998. It aims at the improvement of Siemens' products, solutions, services and processes by establishing (1) a high performance culture based on business benchmarking and subsequent internal improvement activities, (2) the introduction of toolboxes containing respective methodologies and best practice, and (3) specific initiatives in the fields of asset management, quality and innovation⁵⁰. The SMART initiative and its projects (please see sections 3.3.2 and 4.6) are part of this last facet of innovation initiatives.

As part of best practice sharing activities, top+ awards are granted on a yearly basis. The Building Technologies division rewards employee initiatives in the disciplines “innovation”, “customer focus”, “global competitiveness” and “quality or continuous improvement projects to reduce non-compliance costs” by granting specific “top+ awards”. On the level of Siemens AG, endeavours in “innovation”; “3i” (please compare with the next paragraph), “SMART growth”, “sustainability” and “cost optimization and financial excellence” are rewarded, with additional prizes for the “best cluster” and the “best business unit”. As indicated, the categories of granted rewards are not aligned, so far, between Building Technologies and Siemens AG.

Respective top+ award applications have to come from entire teams and require management sponsorship. Direct applications of individuals and teams are not possible, and the field of entrepreneurial endeavours in the sense of disruptive innovations, entering new business fields and substantial company renewal activities is not specifically addressed. On the level of Siemens AG awards, detailed pre-checks by controlling are required for potential applications to be admitted for competition. So far, no project could be identified at Building Technologies division which had been set up in the context of going specifically for a top+ award; all submitted endeavour reports were based on activities as planned by the normal business processes and respective yearly budgets. Building Technologies division has been granted two

⁵⁰ Sources: https://intra1.siemens.com/topplus/en/about_topplus/index.htm (last accessed 2011-02-02) and [topplus_overview_presentation_6_2010.ppt](#)

top+ awards between 2007 and 2010: its US operation was honoured for cost savings in 2009, and the German sales organisation for pushing the profit level to 11% in 2007 (category global competitiveness).

The 3i program

3i – “Ideen, Impulse, Initiativen”⁵¹ – is an idea collection program open to all employees, focussed on singular activities to improve products and processes. “To compete in the 3i category, applicant teams must have created a business value of at least €20,000 as defined within the context of 3i and must have demonstrated an exceptional commitment to the 3i program.”⁵² It was introduced in Switzerland and in Germany in 2008, and allows direct entering of respective ideas into an IT tool via the intranet. Unfortunately, there is no linkage to the established processes as given by the Siemens process house (please see section 5.2.1). Furthermore, the initial effort in 2008 to motivate Building Technologies employees to participate, and to publish and celebrate respective achievements, has significantly ceased in 2009 and 2010.

4.4 The Siemens Leadership Framework and the top talent program

To define the required set of employee capabilities as well as current levels of individual capabilities, Siemens uses a respective Siemens Leadership Framework⁵³. It outlines, primarily, nine specific capabilities used for job reference profile definitions and respective measurements – or judgments – of candidates and employees: Business Results Orientation, Strategic-Innovative Orientation, Customer Orientation, Change Management, Collaboration and Influencing, Intercultural Sensitivity, Leadership, Team Development, and Value Orientation. The latest update of the framework – cutting capability dimensions from eighteen to nine, and introducing seven levels of expertise per capability in detailed textual descriptions – was introduced by March 2010. However, none of the terms like “entrepreneurship”,

⁵¹ German, i.e. ideas, impulses, initiatives. Interestingly, there is no official English wording provided for 3i so far.

⁵² Source: https://intra.industry.siemens.com/bt/global/en/process_quality/procedures/continuous_improvement_channel/3iprogram_chan/Pages/3iprogram.aspx (last accessed 2011-02-02)

⁵³ As defined in a comprehensive presentation (41 pages) on https://intranet.cd.siemens.com/cms/cde/en/default/Documents/SLF_CapabilitiesInDetail_en.pdf (last accessed 2010-12-12)

“intrapreneurship”, “venturing” or “uncertainty” can be found in the extensive description, and “risk” appears primarily in the context of controlling risk.

Based on the Siemens Leadership Framework dimensions, reference profiles of typical jobs were defined and introduced. The seven levels of capability maturity were unfortunately primarily linked with the hierarchy position of the job within the company. Thus, divisional CEO position ends up with capability levels of four to five⁵⁴ whereas senior consultants (as an example of low ranked employees) only reach levels of two for all capabilities (and leadership and team development capabilities are even declared as “non applicable”). Subsequent first capability ranking of employees by the end of 2010 was done with these target definitions, suggested by top management to be reached as the average ranking over all employees doing the same job per definition. After massive protests of employees about poor judgment results, seen as having little to do with their real capabilities but much with predefined results, the reference profiles were withdrawn and completely deleted from the Siemens intranet, and judgment was declared as voluntary depending on employee choice for 2010 and 2011.

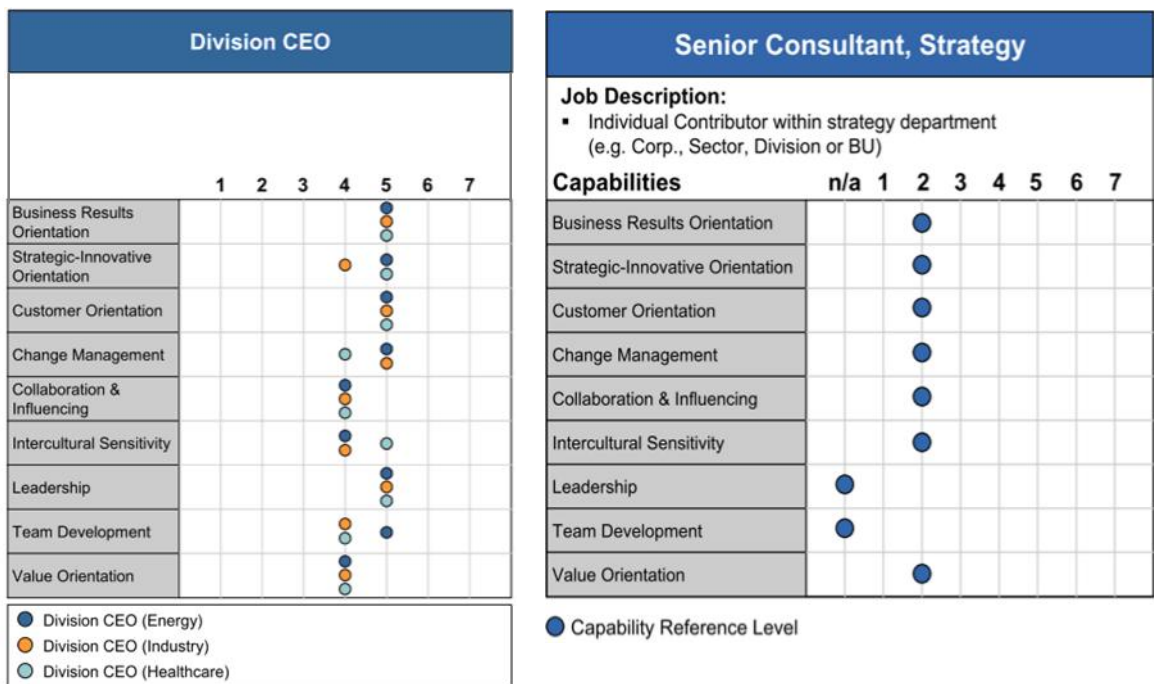


Figure 4-4 – Capability reference profile examples: division CEO, senior consultant

⁵⁴ Internal rumours report levels five to six for sector CEOs, and six to seven for the overall CEO, but respective profiles were never disclosed.

The top talent program

The top talent program is part of the Siemens people excellence initiative. Specific guidelines and processes are defined to identify and develop respective individuals towards executive positions. A key selection criterion is an expected potential to go up the Siemens hierarchy ladder at least two functional levels within five to seven years. Specific coaches out of the organisation are provided to top talents, typically serving in the positions targeted (i.e. two levels higher than the coached person selected). Additionally, specific seminar programs are run for junior top talents (typically limited to a participant age of 40), allowing them to develop direct contacts with top executives and providing educational seminars organised by human resource functions.

Top talents have to sign their consent to be ready to move to any work place on the globe to be allowed participation in the program. Furthermore, a top talent is required to have served in at least two completely different areas of the business covered by Siemens to be promoted to an executive function in the end. It is usual, therefore, to send top talents as time limited delegates (typically two and not more than three years) into key functions abroad.

4.5 Case 1: The acquisition and integration of Shinwha Electronics

The antecedents of the acquisition of Shinwha Electronics, South Korea – and the subsequent outcome of the integration into the Fire Safety business unit as carried out between May 2008 and September 2009 – were described and analysed in detail by the pilot study and its reports (a comprehensive summary of the conduct and outcomes is provided in Appendix B). The key elements of this acquisition and integration process, and the relevance towards elements of entrepreneurship are summarised to provide the context for the descriptions of subsequently reported findings.

It was, and is, the key business rationale of Fire Safety as the global market leader in its business field to try to reach dominant market positions in all major geographical markets worldwide. By the end of the 1990s, the fire safety market in South Korea (subsequently referred to as “Korea”) was entered for the first time by selling existing European products directly, but only an insignificant market share of 0.6% was achieved until 2005. Subsequently, driven by Daniel Bertok, appointed new CEO of Building Technologies Korea from October 2005, it was decided to investigate the options for a substantial local acquisition. Fire Safety

market intelligence reported a market share of 27% for the leading company Tyco Dongbang⁵⁵ and 13% for Shinwha Ltd. as the second biggest player. Since Tyco Dongbang was not for sale, and Shinwha Ltd. was a well known partner already selling the American product portfolio of Fire Safety in Korea, it was decided to go for the option of potentially acquiring Shinwha Ltd.

Shinwha Ltd. was initially founded as a joint venture named Ewha Electronics in October 1970, and held by Korean owners and Hochiki Corp. Japan⁵⁶. Due to the unsatisfying economic development of the company it was sold in February 1980 to Mr. ST Park and renamed to Shinwha Electronics Co., Ltd. In 1991, ST Park appointed his brother OK Park as the CEO and acted subsequently as the chairman only. By leveraging from its business with international Korean construction companies⁵⁷, Shinwha Ltd. also managed to build up its own international project business. The company turnover had grown by 86% from 2003 to 2006, and the further expansion, as planned by the owners, was asking for significant new financial resources. In 2006, a 90% stake of the firm shares was held by the Kim brothers. Both were approaching retirement age, and had no obvious successor coming from their families to lead the firm in the future. In October 2006, Siemens started a first due diligence with an indicative offering accepted by Shinwha Ltd. in July 2007. A detailed due diligence took place from August to November 2007. Deal negotiations finally led to the deal closing at the end of April 2008.

From a Siemens point of view, the main rationales for buying Shinwha Ltd. were (1) the previous failure of establishing their own sales channels in Korea, (2) the attractive Korean fire safety market (by total market size, sales margins, a strong high end market segment and estimated growth rates higher than in European markets), (3) the possibility to leverage on combined offerings including products and services from the other Building Technologies business units and (4) a reasonable price offered for becoming number two in the Korean fire safety market⁵⁸. From a Shinwha Ltd. owner's perspective, the takeover (1) solved the successor problem, (2) provided a good selling price, (3) opened access for Shinwha to substantial financial resources for future growth as well as (4) access to the international sales

⁵⁵ Tyco Dongbang emerged from the takeover of Korean Dongbang Ltd. by US conglomerate Tyco in 1999.

⁵⁶ A key player in the Japanese Fire Safety market as well as on the world markets. Compare <http://www.hochiki.co.jp/overseas/> (accessed in May 2009)

⁵⁷ Korean construction companies realised international business of US\$ 40 billion in 2008, with Hyundai company considered the biggest firm in this market worldwide.

⁵⁸ As listed in the respective internal "Investment Proposal" document of Siemens BT.

channels of Siemens, and the full product portfolio and the global R&D and manufacturing network of Fire Safety⁵⁹. Unfortunately, this last aim from the seller side collided with the primarily Korean-local rationale from the buyer side. Fire Safety was primarily interested in the market access to Korea and selling the global Fire Safety products there with some minor adaptations in future. Nevertheless, Fire Safety announced to all Shinwha employees that a main target of the acquisition would be to “[r]ealiz[e] growth opportunities together with Shinwha [...] for the Korean and overseas market in fire safety”.

It was decided at deal closing to keep OK Park as the CEO of the newly formed Siemens Shinwha subsidiary. Being the long-served ‘patron’ with a high legitimacy among the employees, OK Park was guaranteeing continuity within the company and maintaining the strong personal relationships to key customers and local regulation authorities. (OK Park was, for example, re-elected as a member of the governmental standards committee for Fire Safety in September 2008). TS Lim, as the CFO of Building Technologies Korea, was additionally appointed CFO of Siemens Shinwha, thus replacing the former CFO KM Lim who took over other responsibilities within the firm. The former chairman ST Park signed a one-year contract as a management consultant, whereas his position was replaced by a board of directors, comprising the CEO and CFO of Siemens Korea, and TS Lim and OK Park. However, at the end of 2008 ST Park resigned as a consultant and in May 2009, OK Park was replaced by Daniel Bertok. Furthermore, it was decided in May 2009 that Daniel Bertok would leave Korea at the end of September 2009; and YK Lim (heading the sales of Siemens Shinwha at that time) would take over responsibility for Siemens Shinwha as a director (Siemens organisation does not foresee a “CEO” position within a regional company structure). SH Wong, the factory manager of Building Technology Korea, took over the same function for Siemens Shinwha by October 2008 to allow for a unified factory management.

The subsequent integration of Shinwha Ltd followed the comprehensive and standardized process defined as mandatory for all acquisitions company-wide. The integration process was officially closed by 1st December 2009, exactly one and half years after the deal closing – as targeted by the Siemens integration process. However, turnover and profit of the new Fire Safety Korea entity did not develop as expected by the Siemens management at deal closing. A drastic drop in new order intake led to a dramatic decrease of turnover and a negative

⁵⁹ As stated by the main company owners ST Park and OK Park in talks and interviews.

profitability by the end of business year 2010⁶⁰. During the business years 2009 and 2010, two waves of staff reduction throughout all firm functions (manufacturing, R&D, sales) took place to cut internal cost. The expected synergies on the sales side, by offering combined projects comprising all solution disciplines of Building Technologies, did not materialize; none of the offered “total buildings solutions” were sold (until the end of September 2010). It is currently a widely shared understanding within Siemens management that the drastic sales drops have been primarily caused by the loss of key account managers.

The pilot study findings revealed significant differences in entrepreneurial orientation and behaviour of the relevant Siemens and Shinwha Ltd. management representatives, and a significant respective correlation with the economic outcome for the company ventures in the years before the acquisition in 2008. Furthermore, the clash of the different entrepreneurial cultures of the involved Siemens entities and Shinwha Ltd. – created by the integration process – revealed exemplary differences in the “way of corporate entrepreneurship”, and especially respective leaks on the Siemens side. This aspect will be reported on in more detail in subsequent sections.

4.6 Case 2: The SMART project

To understand the business rationale of the Siemens SMART initiative and its projects, the current positioning of Siemens businesses in the global markets must first be outlined. As the main reference throughout all sectors, Siemens is using a standardized model of a market segmentation with four levels of complexity, size and pricing of product and service offering, referenced to as “M1” (“high end”) to “M4” (“low price”). Traditionally, Siemens was only active in M1 and M2 markets – as compared to companies like GE and ABB. In recent years, growing competition from companies in emerging markets (mainly in Brazil, Russia, India and China, and Middle East countries) like Gulf, Chint, Nari or Neusoft emerged. These companies also started to innovate towards higher end markets. In addition to expanding their existing business globally, thus representing a serious threat for the existing business of Siemens in the future, they were increasing business in the markets expected to experience the biggest growth rates in coming years. As a reaction, the SMART initiative with its many projects represents the

⁶⁰ In business year 2009, instead of the budgeted KRW 70 billion turnover and 4.5 billion profit, a turnover of only 52 billion (-26 %) and a profit of only 1.3 billion (-71 %) was achieved. In business year 2010, the initial budget of KRW 52 billion turnover with a profit of 2.1 billion was missed with a realised turnover of 37.8 billion by 27 percent, and a net loss of 3.7 billion resulted (equals -9.7% return of sales).

“counterattack” by expanding the product portfolios towards the lower market segment M3 (please see Figure 4-5 for the summary).

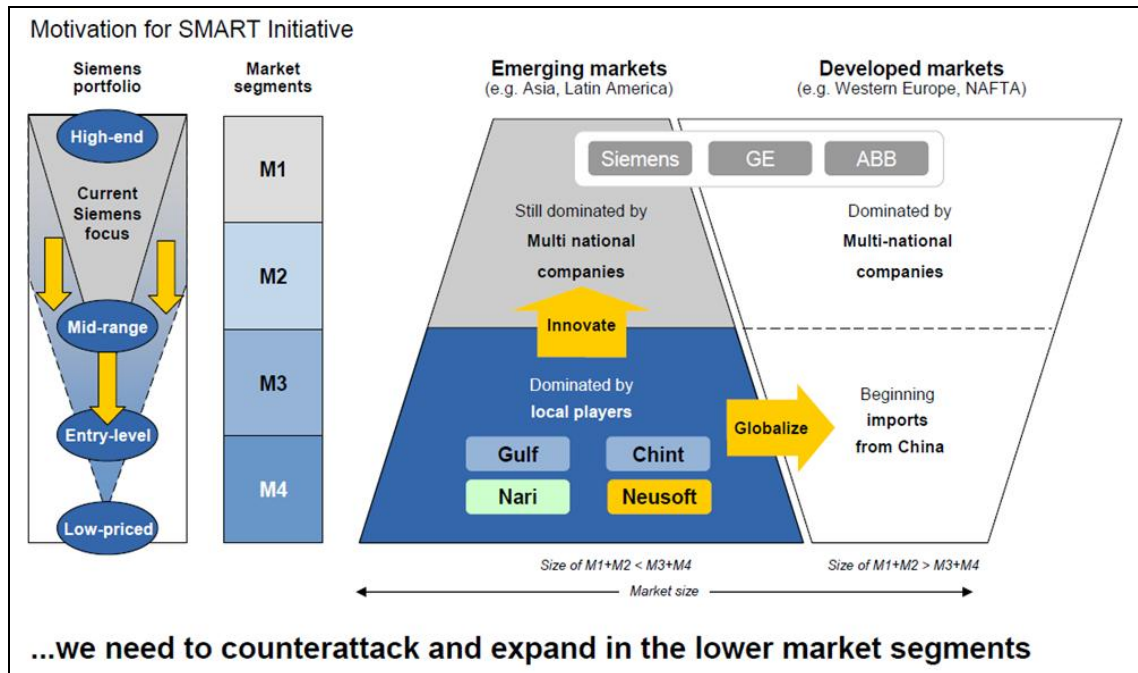


Figure 4-5 – Context of motivation for the SMART initiative
 Source: the SMART initiative, Siemens AG

In 2007, Fire Safety had already started, in its China subsidiary, a new product development project aimed at addressing lower end product distribution markets in China with highly priced competitive fire detectors and fire panels (matching M3 in the Siemens model). Subsequently, Siemens AG top management launched an overarching “SMART initiative” to more successfully address such lower end markets throughout all business with specific projects, and the Fire Safety endeavour in China was selected as one of these projects (please see section 3.3.2 for the initiative context description). Key to the concrete implementation of the Fire Safety project, a three-step approach was defined (please see Figure 4-6 hereafter for the summary). A first step called “Start local”(2007-2008) was focussed on setting up a local organisation in Beijing, defining target markets within China, required product features and the development of the products – mainly by simplifying and optimizing cost of existing products. The second step – “Local for local”, 2009 – was the start of sales in China with respective go-to-market setups, product positioning in the market, and the preparation of roadmaps for exporting to further countries. Step three of the project has been running since the start of 2010 and is called “Local for global”. A global headquarters was set up, with a global profit and loss responsibility for the M3 market in fire safety. Product exports to Russia and Brazil have begun,

a new location within Beijing will centralise the M3 activities, the product portfolio range will be completed and further scale effects in manufacturing shall be leveraged from increased sales volumes.

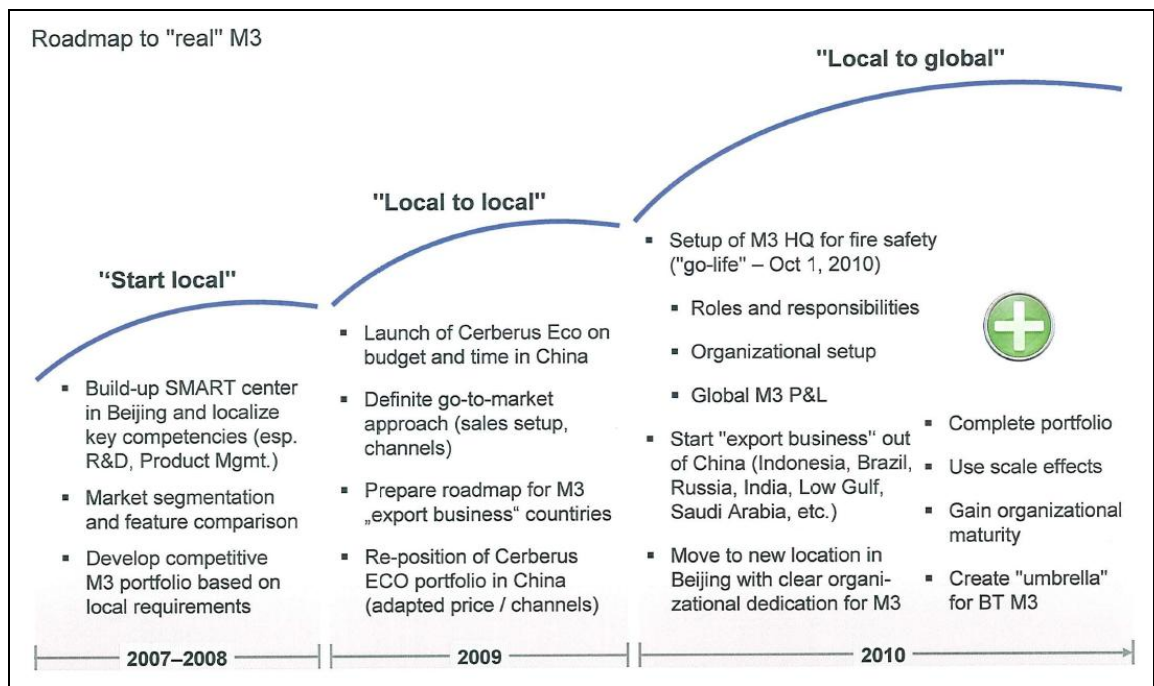


Figure 4-6 – Fire Safety Roadmap to “real” M3

Source: Presentation by Karl Huber, Fire Safety Product Management Head, June 2010

This SMART project represents a significant new business venturing activity comprising the setup of a new organisational unit, a newly developed product portfolio, and entry to new markets world-wide. Furthermore, it involves explicit management sponsoring and is – so far – widely perceived within Siemens as a successful entrepreneurial endeavour.

4.7 Case 3: The SP new setup

The Building Technologies business units Fire Safety and Security Solutions were also active for many years in various fields of the adjacent business of electronic security products and solutions. Key areas of offering were access control systems, intruder detection, and CCTV⁶¹ equipment (please see section 4.1 for more details on the historical development of the building technology organisation and its former companies). The product management, product development and manufacturing of these security products were integrated into the Fire Safety

⁶¹ Closed-Circuit Tele Vision; the use of video cameras and respective monitors within a closed system, typically used in higher security areas, shopping malls etc.

business unit and referred to as Security Products (SP), whereas the sales of solutions and the subsequent entire life cycle business remained part of the operations of the business unit Security Solutions.

However, this security product business never reached significant levels of profitability, and was consistently considered to be below respective critical size in turnovers. A first initiative to significantly increase the business by substantial acquisitions was planned at the end of 2000. It aimed to quadruple the turnover within five years by adding new product portfolios and strengthened sales channels. But, due to the crisis in paid share prices of companies focussed on IT technology starting in 2001 (i.e. the burst of the “.COM bubble” in the financial markets) and reduced profitability of Fire Safety and Security Solutions in parallel, neither respective cash positions for direct company buys nor attractive share for share deal conditions existed six months after deciding the initiative. Therefore, the screening of potential acquisition targets stopped again, and venturing activities refocussed towards activities for organic growth. Unfortunately, activities in product portfolio renewal and sales channel build up were highly unsuccessful, leading to a further decrease in turnovers and profitability in the security business until 2005.

Due to better profitability of the Fire Safety business (and Building Technologies overall) and changing conditions in the financial markets, it was decided to restart the screening of potential acquisition targets in 2004. In November 2005, the Swedish company Bewator was acquired and integrated into Security Products of Fire Safety. It added significant new business in access control and anti-intrusion systems through respective products as well as sales channels. Furthermore, in April 2007, the Chennai (India) based iMetrex Ltd was acquired, adding substantially more security products and solutions with direct operations in India, Ireland, the U.K., Singapore and Hong Kong. The iMetrex operation was subsequently split up into a solutions part (containing most of the India business) which was integrated into the business unit Security Solutions, whereas the development and manufacturing of the intrusions systems was added again to the Security Products portfolio within Fire Safety.

Unfortunately, the acquisition of Bewator and iMetrex was unsuccessful. Key employees of Bewator left within the first six months after the deal closing, whereas respective Siemens employees left in India after the merger with iMetrex. The consolidated Security Products business operation never reached operational profitability. Therefore, the management of Building Technologies searched for a potential buyer for the whole Security Products entity mid 2008, but failed. By mid 2009, it was decided to close down the CCTV product line, to reduce

the intrusion product portfolio and the respective staff in product management, R&D and manufacturing, and to set up a new and quite small company for the remaining business parts. This entity – referred to as “SP new setup” – is kept highly independent from the Siemens organisation and its processes, is led by a new management team, and is meant to be ready for a carve out (divesture from Fire Safety) by the end of 2011.

Similarly to the acquisition circumstances of Shinwha Ltd. (case one), this case stands for the shortcomings of the Fire Safety management when trying for business expansion and renewal by acquisitions. Additionally, it delineates business circumstances considered by the Siemens management as impossible to deal with successfully within the given boundaries of processes, organisations, rules etc., thus revealing the limitations towards entrepreneurial activity.

4.8 Summary

In this chapter, the historical development of Siemens AG, and the antecedents of the Siemens Building Technology division and its business units – Elektrowatt AG and Cerberus AG – were described. The current organisational set-up of entities was depicted in its close linkage to the Siemens Process House definition. A specific focus was placed on initiatives, programs and definitions in the field of innovation and human resource selection and development – seen as core elements directly influencing entrepreneurship in the firm. Subsequently, the specifics of the three selected cases were delineated with the Shinwha acquisition and integration representing an SME entity entering the Siemens world, the SMART project representing an entrepreneurial endeavour taking place entirely within the firm, and the SP new setup as the example of a carve out from Siemens creating an SME entity again. All three cases faced challenges in fostering entrepreneurial behaviours and delivering acceptable business performance. The next section will report in detail on the findings made throughout these three described cases.

5. Findings

The previous chapter described the historical development and key elements of organisation and processes of firms involved in this study, and the specifics of the three selected cases. In this chapter the findings from the field research are reported. The reporting follows the sequence of research sub-questions as outlined in section 3.4. It starts with the perceived relevance and current levels of entrepreneurship in researched entities (section 5.1) as the foundation to justify proposed activities to foster it, as per the main research question. Subsequent sections describe main aspects found in organisation and processes (section 5.2), effects of granted mandates especially in the context of local entities (section 5.3), and elements and effects of long term orientation (section 5.4). Potential interactions among these three main aspects are reported in section 5.5. Within-case and cross-case findings and potentially significant differences are discussed within each findings section.

As expected, out of interview responses, observations and secondary data analysis many more aspects potentially relevant for fostering entrepreneurship emerged than the three key aspects actively sought. Gathered data – especially citations out of the interviews – turned out to combine many of these aspects closely and in different ways. The most popular further perspective among respondents was “culture”, unfortunately without an identifiable shared definition of the term, also seen as containing many elements cited within the three actively researched dimensions. All these further aspects have been analysed using primary and secondary data and are reported in sections 5.6 to 5.9. Finally, section 5.9 contains an overall summary of the reported findings.

5.1 Definition, relevance and current levels of entrepreneurship

The terms “entrepreneur” and “entrepreneurship” involve quite complex definitions, and are currently sparsely used in daily life at Siemens. To allow for a further interpretation of answers given in the interviews, all participants were asked first for their definition of key features of an entrepreneur in a corporate environment. As a result, a quite homogeneous set of features was cited, summarising primarily the dimensions of EO and further respective capabilities: taking decisions, ownership and responsibility, being able to see new opportunities and to innovate beyond current markets and offerings, being a good communicator, and sticking to the started entrepreneurial endeavours (please compare section K1 in Appendix K for all answers in detail). Subsequently, the participants were asked how important it would be to behave entrepreneurially:

“[Being entrepreneurial] is very important, because it's similar like innovation, I think it's the thing which will drive us forward, and... it is our vision in terms of: we are pioneers, and of course innovation is a very, very core element of what we are... I think we have the entrepreneurial power within Siemens, but of course we do better, to more explore it, and to more make it happen.” [Ralf Dunkel, Global Project Lead SMART Initiative, 21.10.2010]⁶²

“Entrepreneurship is so important for our business! Also for the FS [Fire Safety]. If I have the entrepreneurship, then I really mean to lead the business!” [HW Kim, CFO Building Technologies (BT) KR, 9.8.2010]

“[...] entrepreneurship ensures the survival of the company!” [Hans Meier, Global Head of FS Human Resources, 20.8.2010].

In similar ways, all interviewed CEOs, CFOs and senior managers confirmed the relevance of being entrepreneurial for resulting firm performance and firm survival, thus supporting the findings of the previous pilot study as well as many further studies (Zahra 1991, Zahra and Garvis 2000, Lumpkin and Dess 2001, Birkinshaw et al. 2005, Rauch et al. 2009).

This positive perception of the relevance of entrepreneurship in the researched Siemens entities can be seen as essential for later implementations of identified and proposed activities to foster entrepreneurship. However, there is a second *conditio sine qua non* for the whole endeavour of this thesis: is there really a significant gap in entrepreneurial activity in Siemens Building Technologies and Fire Safety which needs to be addressed and potentially filled? Further, how should the current “levels” of entrepreneurial orientation and activity be judged? As noted previously, the application of measurement scales like “Enterscale” (Khandwalla 1977, Miller and Friesen 1978, Miller and Friesen 1984, Covin and Slevin 1986, Covin and Slevin 1989, Knight 1997) was tested during the pilot study but proved to be not applicable due to the high sophistication of underlying concepts, required but missing market and competition information of interviewees, and disconnection to “real-life” examples of entrepreneurs and entrepreneurial endeavours (please see section 3.4 for a more detailed discussion). Therefore, interview participants in the main field research were asked for concrete examples of entrepreneurship, comprising people and functions perceived as behaving entrepreneurially and respective examples of entrepreneurial activities taking place. Subsequently, the single aspects of

⁶² Please see Appendix F for the overview of all interviewees and their corporate functions.

entrepreneurial orientation like risk averseness, decisiveness etc. were covered as part of the overarching questions dealing with processes, organisation, long term orientation etc.

A majority of interviewees had some difficulty naming persons or functions they perceived as behaving entrepreneurially today within the existing Building Technologies organisation. The only person seen as an entrepreneur by the interviewees – when considering the whole existing Building Technologies organisation with its employees – was Dr Milde (CEO Building Technologies). Additionally, Keiko Safaia and John Davis were seen as highly entrepreneurial – not really a surprise, since they had led independent and quite entrepreneurial companies just before joining Building Technologies in 2009. On a level of business renewal activities, a majority of respondents simply saw incremental technical innovations taking place, with little activity towards entering new business fields or new business approaches.

This finding is supported by the results of the analysis of strategic moves and the market position development of Fire Safety in recent years based on secondary data. No new business fields have been entered in the last ten years in fire safety, and it has even been decided to carve out and sell the business segment of Security Products (SP) new setup project due to continuous operational losses (please see section 4.7). Furthermore, the Fire Safety business unit – world market leader since the mid 1990s – has lost its leading role to UTC and Tyco in recent years, primarily because of missed acquisitions (please see sections 4.1 and 4.5). Further evidence from secondary data for missing entrepreneurial action is the unchanged insignificance of the fire extinguishing business for Fire Safety – a market segment representing 60% of global turnovers, and experiencing a major business shift from old fashioned sprinkler facilities towards high-tech water mist systems. Furthermore, the increasing threat of having IT companies like IBM and Cisco entering the field of fire detection does not exist on the fire extinguishing side of the business; respective technologies and products are much harder to copy and represent a significant market entry barrier. Despite these known facts, no significant new business planning took place in Fire Safety⁶³ to significantly grow the extinguishing business, either by internal growth based on new products and additional sales activities, or by considering respective acquisitions.

In the field of product and service innovation, Fire Safety has been investing an almost constant amount of five per cent of its turnover in respective R&D activities for the last ten years. Over 95 per cent of the money is spent on incremental innovation replacing old products with

⁶³ As of end of 2009

implementations having comparable characteristics, but being based on the newest technologies in hardware and software. The last “break-through” product innovation launched mid 1990s was a new optical flame detector based on highly innovative mathematical analysis approaches, protected by several specific patents. Research towards disruptive innovations was done in the last ten years in the field of new approaches in fire detection principles based on created CO gas, but this has not led to any saleable product in that period.

5.2 Organisation and processes

The field research of relevant aspects of organisation and process towards entrepreneurial activity was guided by five specific areas of investigation derived beforehand: the identification of involved complexity and its effects (1), the existence and potential definition of an entrepreneurial process (2), ambidextrous effects in management and processes resulting from opportunity recognition and exploitation in parallel (3), potential management sponsorship of entrepreneurial activity and permissible process simplifications to support this activity (4), and current inhibitors and potential enablers towards successful entrepreneurial activity (5) (please see section 3.4 and Table 3-4 for the details). The findings are hereafter reported by process aspects in general (sections 5.2.1 and 5.2.2), followed by the specifics of Siemens compliance rules and respective effects (section 5.2.3), exclusive sales rights and respective effects (section 5.2.4), and the summary on proposed fostering activities (section 5.2.5).

5.2.1 Existence, perception and relevance of processes

Siemens is widely perceived as a process driven company. This is seen as forced by the required compliance to various industrial standards by law or customer demand, defining processes compliance to ISO 9000:2000, ISO 14001, ISO 12000:2000 etc. as a requirement, and an industry “code of practice” also asking for proof of respective minimal levels of process maturity. The first stages of such process maturity aim typically at people independence⁶⁴, i.e. the way tasks are carried out must not depend on which actual employees are involved. Having activity primarily based on defined processes is also seen as an explicit goal of the management:

⁶⁴ As one example, Building Technologies product development procedures have to reach a level 3 of maturity when assessing them based on the Capability Maturity Model Integration (CMMI). CMMI maturity level 2 primarily focusses on people independence of carried out activities regarding content and quality of results.

“That is clearly the ambition: with the processes you become person independent [...]”
[Jan Traber, Integration Manager iMetrex, 15.9.2010]

“...once the processes are clear, and you are independent from people, you can replace people and top managers, or top project leads more easily, because you are backed up by processes.” [Peter Mueller, CEO BT FS, 21.7.2010]

However, when suggesting to the interviewees that key elements of entrepreneurial activity – especially the aspects of opportunity recognition and evaluation – be added to the existing processes, surprisingly negative feedback emerged:

“[...] hopefully I never will see something like this! Because when we would start to describe how to be an entrepreneur and put it into a process, then... this would be for me the old Siemens... where you have "Rundschreiben" [management circulars], and everybody... everything is explained... I mean, if we do not recruit these kinds of people with this [entrepreneurial] mindset, then we have a problem. So please: never ever describe a process: what is an entrepreneur!” [Karl Huber, Global Head of FS SYS, 29.7.2010]

“I don't think that you can define a process to guide entrepreneurial activity...”
[Keiko Safaia, Chief Marketing Officer BT, 4.10.2010]

A majority of interviewees shared the same perception: entrepreneurship is something “personal”, a kind of “personal art”, and translating respective key activities into the company process definition is impossible. But was there any evidence for this perception of the impossibility of such integration? Subsequent investigations at Building Technologies division and Fire Safety business unit could not confirm *any attempt* at trying to include entrepreneurial activities in the established processes in recent years. Furthermore, a comprehensive idea process developed at Building Technologies Innovation Department in 2006 and 2007⁶⁵ explicitly involved activities in the Management Process and the PLM activities to address all kinds of new business ideas (technical, market; incremental or disruptive innovation, and entering new business fields). However, no implementation of this idea process into the Siemens Reference Process House – and thus the roll-out into the organisation – ever took place, arguably due to the parallel introduction of the “3i” initiative (please see section 4.3; 3i is still not interfaced with the established business processes). As a consequence of having mature processes only on the exploitation side of the business, and there mainly in the field of defining

⁶⁵ “BT process documentation: Idea Management Process (IMP)”, 01. April 2007

and realising incremental product innovations, a significant effect towards an inward orientation of employees on firm internal structures and policies was reported:

“[...] I think the processes cause inward rather than outward thinking” [John Davis, CEO of SP new setup, 1.10.2010].

A further inconsistency with the idea of driving the company successfully by generic processes which would make involved people highly exchangeable was revealed when searching for the main reasons for the drastic drop of Shinwha sales after the acquisition (please compare section 4.5). There is consensus today in the Fire Safety management that this drop took place primarily due to the neglected personal customer relationships of Shinwha sales forces. It turned out that there was neither a detailed identification of key customer relationship owners, nor a subsequent transfer of these relations from sales managers, on leaving, to internal successors. Furthermore, the subsequent assessment questionnaire to judge the Shinwha integration process⁶⁶ contained 77 detailed questions, all concerning proceedings in internal processes, tools, IT infrastructure, and organisational set up – but not even one question about customer relations of top and middle management at Siemens Shinwha, respective key account management, or related market activities. Also, the customer focus did not emerge in the previously carried out “official” audit of the firm integration – despite its reported importance:

“...our local business is based on relationship. [...] long term relationship [is] very, very important for the local business in Korea.” [HW Kim, CFO BT KR, 9.8.2010]

Throughout all cases, such customer relationships are reported as highly people specific and requiring many years of build-up to become effective in selling products and solutions.

Looking at the comprehensiveness and maturity of processes throughout all investigated cases, a significant variation was identified. Shinwha Ltd. used rather simple process models covering key aspects of product innovation and supply chain management. With the integration into Siemens, it was decided to introduce a subset of established processes in order not to overstrain the capabilities of organisation and employees. Within the SP new setup organisation, a drastic reduction of the complexity of the established Siemens processes was taking place at the time of the field research. The SMART project in contrast has to stick to the given Siemens processes, and is only allowed to use the simpler versions (like PEP Tiny in the product life cycle

⁶⁶ A post integration assessment was carried out by BT M&A head office in July 2010 in Seoul

management). At the same time however, requests were launched from the SMART project team members for a significant reduction of process complexity (please see section 4.6).

5.2.2 Ambidexterity management and slack resources

Interview participants were introduced to the model of entrepreneurial opportunity recognition and exploitation as derived from literature in Figure 2-3 (please see section 2.1.14) – since no comparable process definition exists within Siemens (please see section 5.2.1). The aspect of required ambidexterity management – exploiting established business in parallel to new business exploration activities was – subsequently seen by respondents as one of the main challenges to entrepreneurial activity:

“I think that's... especially where we need entrepreneurs to really balance this trade-off”
[Ralf Dunkel, Global Project Lead SMART Initiative, 21.10.2010].

A majority interpreted this task as a general management activity leading primarily to respective budget planning and product managers were seen as having to live with daily ambidexterity conflicts:

“I think PM [product management] is a typical job to experience these conflicts” [Yao Wang, Head of Product Management at FS China, 7.9.2010].

The limitation to exploring activities was seen less in the amount of resources (reflecting given budgets) than in the capabilities of the employees – a view which was most popular among headquarters executives (please see Table 8-8 in Appendix K for the respective cluster analysis). A majority of interviewees preferred a separation of people doing exploration and evaluation:

“[...] have dedicated resources, at least for a start-up, if you have a new business idea, put people together... in best: a very diverse group, with different business backgrounds, different histories, different knowledge; and let them work out the strategy, the concept, in a kind of project... or [a] competence centre approach. And once you have achieved the first level of maturity, you should bring it back into the normal organisation [...]” [Peter Mueller, CEO BT FS, 21.7.2010].

Even if it was acknowledged that there could be mutual benefits of having some people doing both, the separation was especially justified by creating clear priorities for the employees:

“[...] if one person has to do both, he has to set priorities... I assume both of the businesses are not part time jobs, so you end up with a 200% job, or, you have to set

priorities, which means one [job] is behind the other one – but if you want to drive both [jobs] successfully, you need full attention.” [Paul Amstutz, Regional Coordinator for Korea and China, 15.7.2010].

At the time the field research took place, a separate team existed only for technology innovation at Fire Safety, and the investigation of potential new endeavours was set up as an ad-hoc project not following defined processes⁶⁷. On the level of the world-wide Building Technologies organisation, at the end of 2009 Keiko Safaia, as the new Chief Marketing Officer, started specific working groups in the fields of energy efficiencies, safety and security to address new business opportunities. Here again, the problem of having tasks from exploitation and exploration in parallel occurred:

“I think we are making some progress in this approach of creating working groups. But even the working groups... also have to be staffed with some more commitment, [...] you need some real work on these topics, to go deep dive, or do some research, analysis about options, and come up with value proposals, because you can't do it part time, so the project taken now in the working group to have two people, two or three people coming to a dedicated full time... for a few weeks, to come up with more details on a certain topic. And we have to look on our ideas a little more, to see how we can have a structure, have a process where we get some dedication into this...” [Keiko Safaia, Chief Marketing Officer BT, 4.10.2010]

Interestingly, this statement of Keiko Safaia represented a clear contradiction to his disapproval of having processes guiding entrepreneurial activity as stated earlier (please see section 5.2.1). The reality of suffering from the effects of priority conflicts created by the ambidextrous situation of opportunity recognition and exploitation required in parallel made him call for a respective process definition to “get dedication to” the exploration tasks.

A majority of respondents also saw significant deficiencies in the company culture regarding the support of exploration activities, respective decisiveness, risk-taking, and support of funding beyond short term profitability goals:

“I don't think that there are enough... what shall I say... the culture of bringing to table topics which will give longer term value and taking risks, or taking responsibility for

⁶⁷ The only respective endeavour in recent years is the currently taking place Intelligent Response project, trying to identify additional business opportunity in mass notification applications.

bringing such... investing in such areas, this needs to come” [Keiko Safaia, Chief Marketing Officer BT, 4.10.2010].

Additionally, a severe gap between headquarters’ organisation and regional companies was addressed:

“[...] headquarters are not made aware of all the creativity that goes on in the regions. For fear of analysis, too many questions, hindering... or even stopping them from doing it again. So, some of the... entrepreneurial behaviour is not visible to us here, because the regions don't want it to be. And that's a cultural thing we need to break...” [Michael Bosshard, Regional Manager for Korea in FS HQ, 3.9.2010].

The current practice in performance measurements was also seen to drive short term orientation:

“[...] we focus on the next year performance, short term performance, but... in order to create and find new business, we need a certain investment in certain period [...] the working level, they don't like to invest their time for new businesses, because that... they measure their current performance – that is the conflict” [SH Wong, Head of R&D and Manufacturing at FS Korea, 3.11.2010].

Not surprisingly, a majority of interview partners rated the level of entrepreneurial activities currently taking place at Building Technologies and Fire Safety beyond technological innovation as insufficient:

“Regarding business innovations, nobody cares about, I mean, we concentrate on technical innovation part...” [Hans Meier, Global Head of FS Human Resources, 20.8.2010].

As a first new activity, Keiko Safaia proposed to consider customer processes and to make them easier:

“I think one of the things we missed: we put it all around the technology. [...] A lot of what our customers need are [is] pioneering processes to make life easy for them. ” [Keiko Safaia, Chief Marketing Officer BT, 4.10.2010].

And finally, respondents simply requested to change focus from technical innovation to a comprehensive market perspective:

“At the moment we give awards for certain projects, certain technical innovations, etc., but... entrepreneurial activity is exploiting an opportunity in a market, rather than just

doing a [...] new technical design or something like this.” [Robert Schmid, Head of Product Line within SP new setup, 19.8.2010].

Overall, the reported findings were quite homogenous among all three researched cases when looking at the established Siemens organisation. Opportunity recognition in the sense of identifying new businesses or new business approaches was reported as almost not existing in currently defined process activities. A majority of people saw entrepreneurship primarily as a person-specific behaviour was difficult to translate into defined process activities. At the same time, all respondents complained about current firm renewal activities being limited to technical innovations only. The former Shinwha and iMetrex organisations were reported as much less focussed on defined processes, but also as experiencing a restriction of entrepreneurial actions primarily to the key owners (i.e. the chairmen and the CEOs).

5.2.3 Compliance and respective company regulation and rules

The huge bribery scandal Siemens went through in recent years⁶⁸ led to a redefined company: vision, changed core values and guiding principles, the creation of new compliance processes and a respective organisation, and highly elaborate training in these fields for all employees. A world-wide rolled out regulation defines in detail what remains permissible in the interaction with all groups of relevant stakeholders. Spending for customer events and gifts, for example, is clearly limited and needs specific approval from superiors. Compliance officers check the ongoing business, and have to be actively consulted in any case of uncertainty.

While having consensus among interviewees that entrepreneurship is not linked to non-compliant business, the perception of the effects of these compliance rules on the company business was highly controversial. Headquarter representatives insisted that the rules were not hindering the business, whereas Asian employees saw significant impact on sales activities. Former Shinwha employees, as well as exponents from Fire Safety China, saw a kind of two “layers of reality”: the official world of Siemens rules of conduct and compliance guidelines, and the real world of making business in many regions of the world. Korean business, in particular, was reported as highly dependent on personal relationships and “give-and-take”

⁶⁸ Siemens used a slush fund of more than €1.3bn to win overseas contracts in telecom and power business from 2001 to 2007. By the end of 2008, the case was settled with involved authorities at a total cost of around US\$ 2.5bn. Further compensation payments to competitors are expected, making the case the biggest bribery scandal in history.

Compare <http://www.guardian.co.uk/business/2008/dec/16/regulation-siemens-scandal-bribery>

customs. There was a severe gap perceivable between these two worlds which was not addressed officially⁶⁹:

“I think, especially in the environment like China, Russia, I cannot imagine: if we are 100 per cent compliant... we cannot make business” [Yao Wang, Head of Product Management at FS China, 7.9.2010].

YK Lim estimated a loss of ten to fifteen per cent of projects in Korea following the Siemens compliance rules. At the same time, the Global Corruption Index 2010 of Transparency International⁷⁰ confirmed an increased corruption worldwide over the last three years, with six out of ten respondents reporting an increased rate of bribery required to get personal services (linked to health, education, tax etc.), and overall governmental structures and political parties perceived as behaving in increasingly corrupt ways in general. Interestingly, Siemens compliance training and information provided by internal newsletters and emails have never addressed such information.

While nobody expected any room for change of the target to only make ‘clean business’, how to do such clean business was clearly disputed. In the shorter term, a majority of respondents saw room for process simplifications to reduce the additional work load for employees. Even after a first step of simplifying the original 104-step Siemens compliance tool in Fire Safety entities there was consent that further simplifications would be necessary:

“I fully agree, we need the compliance regulations, we need the business ethics, but, but, the issue: how we do that!” [HW Kim, CFO BT KR, 9.8.2010].

“This is just too extreme, too extreme!” [Yao Wang, Head of Product Management at FS China, 7.9.2010].

Respondents also saw the more fundamental issue of either going for a rule and control based approach, or relying more on trust in the employees:

⁶⁹ Siemens compliance rules seem even for the established BT Korea organisation a problem: the long served and highly appreciated CEO of HVP had to leave the company in July this year without previous notice because he advised employees to book some incoming orders already for the next business year (just to smooth the turnover figures between the business years).

⁷⁰ The results based on a capture of experiences and views of more than 91,500 people in 86 countries and territories. For Russia, “significantly increased petty bribery since 2006” is reported. In China, 46% of respondents see an increased rate of corruption (only 25% report a decrease), and business/private sector as being most affected. Results published in December 2010 on <http://www.transparency.org>

“Siemens [...] has a rule based culture, and not a value based culture, because you can achieve the integrity and compliance also by living it. By trust. Sure, we have as Siemens, we have completely screwed up the subject, and we have to go along now with a rule based approach, but there is no fundamental inheritance that you have to do it that way. You can do it much more value based.” [Jan Traber, Integration Manager iMetrex, 15.9.2010].

Such a fundamental change from tight control with a lot of approval steps, reports and controls to a system based on trust in the employees and their correct conduct was not seen as realistic in the next years for the whole Siemens organisation. It may be possible, however, for the SP new setup by having tailored labour contracts:

“[...] in your contract, it is very clear, we do fair business [...] everybody has its own responsibility, we do not accept [...] any violation of this; if there is any violation, you are off, that's it. And forget all the paperwork. We will not have a compliance officer, we cannot afford anyone, we will not have this paperwork [...] I am pretty sure that we can even be as good as we are today” [Robert Schmid, Head of Product Line within SP new setup, 19.8.2010].

Over all investigated cases, the issue of having a limited level of required compliance rules when trying to stay in the business is primarily driven by the respective target sales regions, and therefore reported out of the Shinwha and the SMART project cases. In all cases, the complexity of the rules and regulation is seen by middle management as hindering the business. Headquarter executives saw little room to change the current comprehensiveness of business compliance definitions. Nor did they see it as necessary.

5.2.4 Exclusive sales rights per country

The global Siemens sales organisation is based on country specific sales offices owning, typically, the exclusive sales rights for all products and services within their territory (please see Figure 4-3 in section 4.2 for the organisational setup overview). The main drivers for such a setup were reported as (1) the required coordination of all offerings in a country to avoid competing Siemens offers to customers as well as (2) the concentration of the country specific market knowledge and (3) the achievement of a synergistic organisation by unified offices, common tools and services. However, product portfolios and business strategies are driven from

respective global headquarters⁷¹. The research revealed three specific constellations creating significant conflicts by this setup: (1) difficult negotiation situations when a customer has to be served in several countries or even globally, (2) projects in target countries where no representation of the specific business in the Siemens organisation exists, and (3) lack of local support for businesses which create negligible turnovers in that country. The limiting effects of the given definitions and controls on cross-border entrepreneurial activity were even confirmed by the Fire Safety CEO:

“So I would consider overall – for all regional activities – exclusive sales rights are always limiting entrepreneurial behaviour” [Peter Mueller, CEO BT FS, 21.7.2010].

Subsequent sections will explain the identified effects and potential further steps and activities in more detail and framed by the researched cases.

The former Shinwha organisation achieved around twenty per cent of its turnover – and an over proportional part of its profit – with solution projects outside Korea. After the integration into Siemens, two big projects were lost⁷² in Vietnam due to the internal effects of competence conflicts, delays in handing in the offers, and losing competitive pricing by margin stacking. Out of these conflicts, a set of rules derived at the end of 2009 defined five distinct business cases, and clear competences and responsibilities within Fire Safety Korea business done internationally. However, no steps were taken by Fire Safety headquarters or Building Technologies headquarters to create a global guideline from this definition. In parallel and independently, Siemens Corporate Finance worked out a New Collaboration Model⁷³, defining in detail all aspects of international projects regarding legal and accounting matters. But, to apply the guideline in practice at the Fire Safety business unit, further adaptations were seen as required, with an enhancement of business mandate and responsibility aspects.

In the case of the SP new setup, the exclusive sales rights were simply put out of force. One key reason was the missing focus of the Siemens country organisations on the SP business, primarily caused by the small turnovers when compared to the other sales within a specific

⁷¹ All divisional and business unit headquarters still reside in Germany – with the exception of BT division which is located in Zug, Switzerland.

⁷² Nohn Track Power Plant and Hanoi Land Mark Tower in Vietnam

⁷³ Document “Siemens RPS New Collaboration Model NCM Guideline / Version 7 / Sep 2010”, 170 pages

country. Additionally, the cut out from the overall Siemens sales organisations was a preparation for the potential sale of the whole SP business. As a consequence of this disconnection, local Siemens organisations had to apply for delivery contracts with the new SP organisation in the same way as required by third party customers. In most countries, delivery to Siemens is stopped now. However, the SP new setup demonstrates the possibility of having setups without exclusive sales rights, and local Siemens country heads became aware of the threat of losing businesses if they were not locally nurtured.

Looking at the third case, the SMART project was just entering the phase of starting international sales (in Russia and Brazil) at the time the field research took place. Early feedback indicated challenges in aligning the three involved parties – the new SMART headquarters in China, the global Fire Safety headquarters in Switzerland, and the local sales organisation – in relation to the market strategy and respective product portfolio definition. The headquarters responsible appreciated the local market knowledge and support regarding tools and infrastructure, but tried to put in place their own understanding of the Siemens M1 to M3 market segmentation.

“[...] [F]or us we get a clear mandate; we can go everywhere, but how to synchronize with regional managers, and how to synchronize all these portfolios? And in each country... for example, if you go to each country, and... our ECO⁷⁴ will be sold in M3 for sure, and what is going to be sold in M2 and M1? And how to synchronize with all these activities with the regional managers? Here I think it is not clear, we need really to define this part!” [Yao Wang, Head of Product Management at FS China, 7.9.2010].

Furthermore, organisational aspects seemed not to be defined clearly enough:

“There are simple questions: who is building up the sales channels: is it the Russia organisation, or is it Beijing?” [Paul Amstutz, Regional Coordinator for Korea and China, 15.7.2010].

And in headquarters, there were some doubts about a sufficient knowledge of the Fire Safety China product management organisation regarding foreign target markets:

“Whenever you do a product definition, nobody from China has ever been in Russia to get all these requirements.” (Hans Meier, Global Head of FS Human Resources, 20.8.2010).

⁷⁴ ECO is the product name of the new lower end product portfolio targeted at M3 markets.

So, this new approach of having SMART headquarters in Asia with global responsibility in M3 markets adds yet another dimension of complexity to the organisation: namely the distribution of product portfolio decisions, since the responsibility for M1 and M2 markets and products will remain in European headquarters. This will not make it easier for potential “entrepreneurs” trying to develop such markets, since they are still required to align their activities also with the headquarters functions managing the higher end portfolios, and all the sales activities in the market countries.

5.2.5 Proposed actions to foster entrepreneurship

Interviewees were also asked for their personal top three action items in organisation and processes to strengthen entrepreneurial activity. The first of the two most cited aspects was a respectively adapted achievement measurement of applied key performance indicators (KPIs). This was seen as required to make entrepreneurial achievements more transparent in the organisation. Linked to it was the proposal to actively ask employees to go for entrepreneurial endeavours by applying for respective yearly top+ awards (please see section 5.6.5). Interestingly, the cluster analysis of respondents (by case and function, please see Table 8-10 in Appendix K for the complete list of all answers) revealed a significant imbalance of respondent origins: most of the supporters of these fostering activities came from middle management, whereas only one executive shared this view. The second of the most cited aspects was the call for granting more empowerment with linked accountability, responsibility and taking ownership of a specific endeavour. Both top ranked facets were especially cited from interviewees involved in the SP new setup – arguably echoing the specific situation of lack of these ingredients in the old setup of Security Products.

Akin to the aspect of achievement transparency, respondents proposed to have more active motivation of employees by their superiors to aim for entrepreneurial endeavours, and respective personal reward and compensation. Again, this feedback was primarily coming from middle management. Granting more autonomy and freedom, on the other hand, was seen as important by three people, not surprisingly comprising two respondents from middle management and a subsidiary executive. Linked to these aspects, a clear potential towards more management decisiveness, giving clearer priorities and thus focus, was seen as important by four respondents – with three executives from headquarters among the supporters offering almost a self-critique. This aspect was especially cited by interviewees being part of the SMART project and representing headquarters’ functions. This could be interpreted as a combination of a certain repercussion effect of the protracted discussions on taking key

decisions in the starting phase of the project, and some feeling of vagueness in the focus and specified priorities for the SMART project members, particularly since several members pursue tasks outside the project as well.

Furthermore, the reduction of complexity in organisation, processes and respective regulations was seen as an important improvement towards enabling entrepreneurial behaviour. This view was not supported by any headquarters executive responsible for these definitions. As a related aspect, the allowance and strengthening of new venture organisations with significant levels of freedom from the established organisation was seen as important by two interviewees. Not surprisingly, the aspect of having more freedom and autonomy was primarily cited by interviewees involved in the Shinwha case – the entity which suffered losses of entrepreneurial employees through the integration into the Siemens organisations and processes. A further activity, supported by four interviewees, was the request to do more to get the right entrepreneurial people on board. Various ideas were put forward, including better selection and fostering of entrepreneurially oriented employees, as well as changing relevant circumstances in the company involving the aspects already reported above.

Finally, better collaboration of headquarters with regional companies regarding entrepreneurial ideas and endeavours, with ‘more and better’ communication including best practice sharing were cited as required activities. Fostering trust and entrepreneurial thinking was cited twice, and a culture of failure forgiveness once – an aspect which reappears outside the focus on organisations and processes later on. These proposals are further considered in the subsequent chapters discussing the findings and deriving implications.

5.2.6 Summary

Within the researched Siemens entities, a fairly mature process of definition, and implementation aimed at task definition and execution being independent from individuals and their capabilities and notions as far as possible, was identified for the Product Lifecycle Management as a key element of business opportunity exploitation. On the side of entrepreneurial opportunity recognition however, neither defined processes nor a shared understanding of the requirement of any respective definition was identifiable. Despite a majority of interview respondents accepting opportunity recognition as being a “person dependent art” impossible to be depicted by defined processes, there was a wide spread dissatisfaction perceived with the current amount of entrepreneurial activity. Such endeavours were seen as being limited to incremental technical innovation, caused by the absence of planning and non-existent rules for more ambitious venturing.

The key role of the “entrepreneur” was seen as balancing the trade-off between opportunity recognition and exploitation. Few people were reported as filling an entrepreneurial role today. Opportunity recognition activities were judged to be limited by the absence of people capabilities, missing decisions on priorities by executives, and in general a lack in culture of decisiveness, taking risks, and provision of funding beyond short term profitability goals. Additionally, tight business compliance rules were seen as a limiting factor in certain regions and countries, and the system of exclusive territorial sales rights had been experienced as hindering cross-border projects and new business ventures. The current complexity of organisation and processes in Siemens entities was perceived as high and thus hindering corporate entrepreneurship.

To foster entrepreneurship, interviewees proposed the adaptation of achievement measurement and related key performance indicators towards longer term goals. Entrepreneurial achievements should be made more transparent and popular in the organisation by granting particular rewards and compensation. More empowerment should be granted to intrapreneurs with strengthened accountability, responsibility and taking ownership of a specific endeavour. On a management level, more decisiveness and the provision of clearer priorities and, thus, focus was requested. Finally, the selection and promotion of employees should be linked more strongly to entrepreneurial capabilities, activities and achievements.

5.3 Aspects of granted mandates

Six specific research sub-questions regarding the granted mandate and its effects towards entrepreneurship were derived in advance (please compare section 3.4) to guide the field research. First, definitions of responsibilities and competences of local (subsidiary) mandates had to be identified (1). Next, the aspects of communicating such mandates (who is informing, and who is informed) (2), and the preciseness of mandate definition with its perceived appropriateness (3) were to be researched. Derived from this, potential gaps between mandate definitions and the perceived and determinable impact in practice, and potential contradictions with other existing mandates were to be evaluated (4). By expanding the scope of local entrepreneurial activity to the global company context, potential hurdles to overcome within the Siemens organisations were to be clarified (5). And finally, current inhibitors and potential enablers of successful entrepreneurial activity in the context of mandates were to be identified (6).

The field research revealed the very distinct constellations regarding granted mandates throughout the three investigated cases: Fire Safety Korea representing a fully integrated local country organisation, the SMART project in Beijing being a ground-breaking new approach within Siemens of having a new global business mandate based on a Far East headquarters aside from the established organisation, and the SP new setup rooting its business mandate in an almost complete separation from the Siemens world. It was, therefore, decided to unfold key findings from each case, followed by findings applicable in general, and proposed action items arising from the interviews.

It has also to be recognized that aspects of granted mandates are strongly linked to organisations and processes as reported in the previous sections. The concept of exclusive sales rights per country as depicted in section 5.2.4 could also be interpreted as being primarily a mandate definition. Therefore, the subsequent findings sections primarily reference previously discussed aspects instead of repeating them.

5.3.1 Findings from the Shinwha case

Looking at the acquisition in Korea first, the business rationale there, as seen from headquarters, was clearly to achieve significant local sales of fire safety solutions and services within Korea. This meant a significant change to the sales mandate since the previous organisation was doing both international project business and product business. The subsequent development – or rather, non-development – of the respective mandate adaptations is illustrated by three examples significant for the Korean Fire Safety business.

At the time of the acquisition, the sales funnel of Fire Safety Korea contained around twenty international project endeavours in various maturity states, from “first idea” to “deal closed”. Since the acquisition was accepted on the basis of a significant growth of turnovers year by year, these international projects were not abandoned, but also not really supported by headquarters. As a consequence, several international projects were lost to competition (please see section 5.2.4 for the effects of exclusive sales rights and further details). Fire Safety Korea management also proposed to set-up a competence centre for Fire Extinguishing products and solutions⁷⁵ in Seoul for the whole Far East area, thus proceeding with this already well-established business and also significantly supporting headquarters in Zug to develop this

⁷⁵ Fire Extinguishing represented more than fifty percent of turnover and up to seventy percent of profits in the international business.

business with its global products. Again, there was neither an acceptance nor a denial of the proposal, and even 30 months after the acquisition, there is no decision for or against setting up such a competence centre.

This pattern of simply ‘not deciding’ also took place in the third major initiative for international business: Fire Safety Korea developed a version of its domestic HomeSmoke⁷⁶ product for the Japanese market. The first product delivery was ready for shipment mid 2010, and the customer was urgently awaiting the delivery, but selling was not allowed since Fire Safety Korea was still waiting to be granted sales rights for Japan by Fire Safety headquarters in Zug. In all cases, a significant deficit in clarifying the ownership of business, and especially the responsibility for risks taken, is perceived.

As already outlined, the intention of Siemens was simply to “buy the fire safety market Korea” by the acquisition of Shinwha Ltd. In reality, it was the addition of a whole new subsidiary to the Fire Safety organisation since Shinwha was also running its own significant R&D and manufacturing (please see section 4.5). After the acquisition, the manufacturing plant was closed, and its function – and most of the previous employees – merged with the already existing production plant of Building Technologies Korea. Dealing with the integration of the R&D side, however, proved to be much more complex due to a vast existing product portfolio, being compliant to strong local regulation (defined in Korean language, content wise not known at Fire Safety headquarters, and not replaceable with existing Fire Safety products), and a major language gap caused by having all requirements and documentation in Korean.

To give a basis for subsequent considerations of a more adequate mandate for the Korean R&D in future, a whole global Fire Safety R&D site concept had to be derived first⁷⁷. To do so, the R&D locations in Switzerland (CH), Germany (DE), Italy (IT), France (FR), United States (US), China (CN) and Korea (KR) were positioned relatively to each other along the two dimensions of (1) the strategic importance of the local environment and (2) the subsidiary level of local resources and capabilities (as proposed by Bartlett and Ghoshal Bartlett (2002) to define

⁷⁶ HomeSmokes are stand-alone fire detectors also sold in shopping centres etc.

⁷⁷ This was done by the author as part of his role as an integration manager of the acquisition, and in parallel to the running doctoral studies. Prior to this work, no defined “site concept” defining clear mandates for the FS R&D locations existed.

subsidiary roles, please see Figure 5-1 for the summary⁷⁸). This helped in planning and visualizing the developments of all previously existing sites, but rather surprisingly has not led to a defined role of the R&D of Fire Safety Korea so far⁷⁹. As in other examples discussed in this chapter, even more than two years after deal closing, no decisions beyond “keeping the status quo” have been taken. Nevertheless, the definition and application of subsidiary roles using the approach of Bartlett and Ghoshal was beneficial and received appreciative feedback from the involved Fire Safety headquarters management.

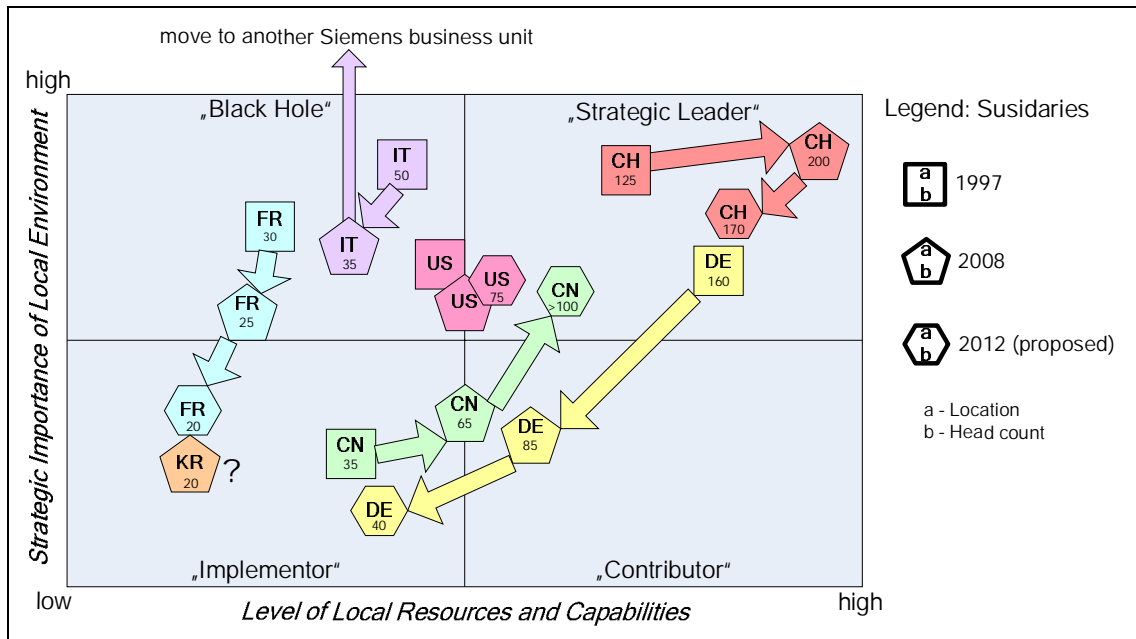


Figure 5-1 - Integration and differentiation of Siemens Fire Safety R&D locations
Adaptation by the author from Bartlett and Ghoshal (2002)

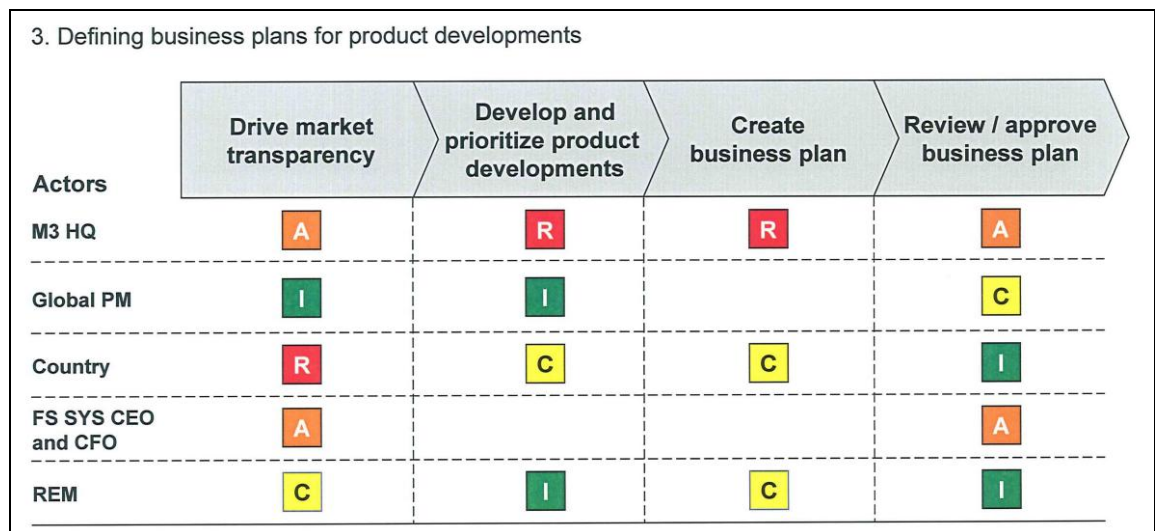
5.3.2 Findings from the SMART project

As a kind of “inverse approach” when compared to the Shinwha acquisition, the SMART project – forced by the Siemens top management – was set up with a clear business mandate as

⁷⁸ The diagram shows the past (1997), present (2008) and future (planned for 2012) positioning of the internal R&D locations. The movement in placements between 1997 and 2008 summarises the subsidiary developments by planned and unplanned effects, whereas the proposed changes 2008 to 2012 reflect the proposals on the evolution of the subsidiary positioning. Sites in DE and FR shall be restructured and reduced, CN and US sites expanded, the main site in CH consolidated, and IT site responsibility moved to the business unit CPS.

⁷⁹ Last assessment by the end of the business year 2011.

the starting point of the endeavour. Within the SMART project, the given overall business mandate was translated into a set of guiding principles⁸⁰, which were further elaborated into detailed definitions along nine “use-cases”⁸¹ defining a total of 32 activities. The description of use-case number three – “Defining business plans for product developments” - shall serve here as the illustration of the approach taken (please see Figure 5-2 hereafter for the original chart summarising the use-case).



Legend: R – Responsible for, A – Accountable for, C- Consulted, I - Informed

Figure 5-2 – SMART use-case definition with involved activities, actors and their roles

Source: BT FS M3 Headquarters Definition - 2010-06-16.pdf

First, the use-case was further detailed into four subsequent activities: “drive market transparency”, “develop and prioritize product developments”, “create business plan” and “review / approve business plan”. The roles were defined for all actors involved - the new M3 headquarters executives (“M3 HQ”), the global product management (“Global PM”), the local Siemens country management (“Country”), the executives from Fire Safety global headquarters (“FS SYS CEO and CFO”), and the regional managers in headquarters (“REM”). The role definition was standardized into four aspects: being responsible (“R”), being accountable (“A”), required to be consulted (“C”), and to be informed (“I”). The understanding of these role definitions was again described in detail in the guiding principles document.

⁸⁰ Last accessed version: I BT FS M3 HQ Guiding Principles - V19 of 2010-06-15.pdf

⁸¹ A use-case is a methodology used to clarify and organize the interactions of all involved actors in a specific environment and related to a particular goal. Last accessed version for the uses-cases discussed here: I BT FS M3 Headquarters Definition - 2010-06-16.pdf

This approach was seen by the respondents as best practice for defining mandates in a way that is understandable for all parties involved. However, the most crucial point – selling the products on a global scale – has just started, and it is yet to be proved that the new headquarters can really operate globally as mandated.

5.3.3 Findings from the SP new setup case

As the last case to be looked at, the SP new setup was, and is, clearly a critical case regarding mandates, with the name of the endeavour already pointing to the drastic changes. The setup of a new legal entity, abandoning the fundamental Siemens concept of exclusive sales rights, closing one of the three product lines, and moving the headquarters from Switzerland and Germany to Sweden impacted the granted mandates in several ways. Profitability to be achieved by a stand-alone operation became key; considerations of doing combined business together with fire safety – a main reason for many delays and compromises in the past – were gone. However, this uncoupling of the entity from Siemens was only accepted under the goal of selling the new firm, and cannot be interpreted as representing a new type of rather loose integration considered by top management for other existing entities. The circumstances of the failure of the old setup of SP revealed significant limitations of the Siemens “full integration” model practice: smaller entities, operating in product markets and being far away from market leadership are almost “strangled” by the requirements of integration, and thus, experience severe limitations to the granted business mandates. The most important effects cited in this context were decision processes being slowed down by complex compliance rules and organisational setup⁸², and “base costs” for infrastructure and tools especially in IT (with ERP and HR systems based on SAP) that were far too high.

5.3.4 General findings and proposed actions of improvement

An episode in Building Technologies headquarters, observed in August 2010, confirmed an often cited phenomenon within the company with a clear example: the tendency to do micro management even from top management levels, instead of granting comprehensive responsibilities and doing management by objectives. Johannes Milde, CEO of the Building Technologies division (and thus head of around 42,000 employees, and responsible for a turnover of around EUR 8 billion in 2009), decided to go for an investment of EUR 350k. This

⁸² Just as two examples for simplifications in the SP new setup, SAP has been replaced by Excel sheets, and the compliance officer has been removed.

investment was planned and approved long before as part of the yearly budget, and could easily be paid from cash due to the highly successful running of the business (EBIT was around 10 percent of turnover, and far above targets). Nevertheless, Milde had to ask the Siemens top management board, again, for permission to be allowed to invest the money.

“[T]he management style of the board, they have a very detail-oriented management style. So that's rather a trust issue, and there we are back again to leadership. [...] However, I live in doubt and in hope that the management board knows what they are doing, [...] the effect I am afraid of that by this lengthy process: we might miss opportunities” [Sandra Amrein, Management Development at Siemens Corporate Office, 9.11.2010].

So, the Siemens management board is clearly not perceived as providing meaningful mandates based on trust, which would involve a focus on achieved targets instead of interfering in daily business.

When asking the interview participants about potential fields for improvement regarding mandate aspects, the top priority was seen in clearer definitions, better aligned with the current strategy and other granted mandates, written up in appropriate forms like clear use-cases, and communicated to a broader group of involved people than today:

“[T]he headquarters management must give the clear definition over the role for each part, and made the deadline. [...] Most of the big topics, there is no driver, only passengers, no driver.” [HW Kim, CFO BT KR, 9.8.2010]

“Clear and cascaded communication; so it is not sufficient only to go to top management, you also need to address the next level and the very next level...” [Peter Mueller, CEO BT FS, 21.7.2010]

“And whenever you make this mandate for these entrepreneurship tasks, with this... with wanted responsibility in their organisation, and another responsibility on the other side, and [if] this is not synchronized, you get into chaos. And at the moment, we are on the best way to get into these troubles, because we keep this responsibility unclear.” [Hans Meier, Global Head of FS Human Resources, 20.8.2010]

As a second cluster of requested improvements, respondents asked for more freedom by defining comprehensive mandates based on awarded trust, leading to faster and clearer decisions, and a rejection of the current “zero risk culture, not willing to expose himself, career

orientation, not being accounted [for]...” [Jan Traber, Integration Manager iMetrex, 15.9.2010]. Such a change would also require decisive people in respective positions, with experience in going for their business themselves even in constellations of responsibility that are not fully clarified:

“I am not only responsible for what I do, but I am also responsible for what I am not doing.” [Jan Traber, Integration Manager iMetrex, 15.9.2010].

Nevertheless, interviewees were rather sceptical that such a culture exists at Siemens:

“[...] we are from a cultural history rather used to taking decisions together, so that in the end nobody is responsible” [Sandra Amrein, Management Development at Siemens Corporate Office, 9.11.2010].

So, instead of showing decisiveness and taking risks to form entrepreneurial business endeavours, “career makers” were seen as primarily entrepreneurial in the sense of managing their own personal advancement:

“[...] they only live for that, and whatever they do, and whatever actions they take, is just for supporting their career, they don't care at all about products, or people, or whatever; they just look for themselves, and if you have these kind of people, anyone want... or trying to be an entrepreneur is stopped by those guys at any time” [Robert Schmid, Head of Product Line within SP new setup, 19.8.2010].

This effect seems so widely spread, that Keiko Safaia – after being only a few months in the company – stated:

“I think, the biggest gap I see is: there is too much room for expectation management. And this I see is a [...] failure in translating our ideas to reality, because it's not so much about how best we can exploit an opportunity. It's pretty much about: what is your perception, and how do I keep your perception in a framework that I can outperform, and then everybody is happy. [...] I find it quite surprising that we allow this.” [Keiko Safaia, Chief Marketing Officer BT, 4.10.2010]

This finding can be linked back to the request to use more appropriate KPIs when measuring employee achievements (please compare section 5.2.5).

In the context of granting more comprehensive mandates with more local autonomy towards new business venturing, Building Technologies CEO Johannes Milde presented at the Global

Management Conference in May 2010 the idea of turning Building Technologies into a global systems house⁸³, and having the branches⁸⁴ and their employees certified. Such an approach was started in 2007 in Fire Extinguishing by Fire Safety as a pilot project – perceived as quite successful – to achieve three specific goals: to “effectively make qualified investments in Building Technologies business growth opportunities” (1), to “manage existing financial and reputational risks” (2), and to “secure the needed (solution) experts with the right qualifications”⁸⁵ (3). Granted branch certification levels (Blue, Silver, Gold) would be highly dependent on delivered business performance (growth and profit) and process maturity to manage quality and risk. Similarly, employees are to be certified by using the three levels: professional, advanced and expert (please see Figure 5-3 for the original presentation slide).



Figure 5-3 – Certification concept for branches and employees

⁸³ A systems house is providing customer specific solutions and turnkey systems typically integrating different disciplines (like Fire Safety, Security, HVAC applications etc.)

⁸⁴ At BT, subsidiaries are normally referred to as *branches*.

⁸⁵ Management presentation, slide 5, published as “Competency-Excellence master presentation.pdf” on https://workspace.sbt.siemens.com/content/00001002/lcm/competence_excellence, last accessed 2011-11-28

As presented by Johannes Milde (BT CEO) at the Global Management Conference in May 2010

By the end of 2010, a respective branch certification manager at Building Technologies level had been appointed to implement this initiative. This certification process approach received quite positive feedbacks:

“Mildes' initiative sends that message: Do your internal stuff well, and I give you more freedom on your external. [...] And I think that this is a great platform for launching... or, not launching, but fostering entrepreneurial behaviour. And I think it will attract different people to our business, to lead branches. I think they will aspire to get "Gold" status, so that they get the freedom to do what they believe is right to run their business.” [Michael Bosshard, Regional Manager for Korea in FS HQ, 3.9.2010].

A last relevant field of change was seen in current capabilities of employees not matching the need for a more entrepreneurial future:

“... on competences I think we have a massive, massive gap, between what we need, going forward as an organisation, and what we have today. [W]e trying to see the world based on the solutions which we are comfortable delivering – not so much... we don't see the customer [...] from his point of view, what is it that he needs, end to end.” [Keiko Safaia, Chief Marketing Officer BT, 4.10.2010].

This again confirmed the prevailing inward orientation of employees on firm internal structures and policies as discussed in section 5.2.2

5.3.5 Summary

The definition of competences and responsibilities of the new SMART headquarters organisation – based on a set of use-cases, involving actors and roles, and with guiding principles around it – was perceived as best practice regarding comprehensiveness and clarity of business mandates within the researched Siemens entities. The Shinwha case primarily revealed the aspect of conflicting expectations towards granted mandates between involved parties, and a significant deficit in clarifying the ownership and especially the responsibility for risks taken in a specific business. A failed business mandate, the subsequent turnaround and preparation for carve out was represented by the SP new setup case, forcing the application of mandates clearly limited time wise.

The recurring pattern of not clearly deciding on business mandates was complemented by some evidence of Siemens executives doing a lot of micromanagement instead of consequently

applying an approach of management by objectives. Interviewees saw top action priorities to foster entrepreneurial behaviour in clearer mandate definitions that are better aligned with the firm strategy and other granted mandates, written up in appropriate forms like clear use-cases, and more broadly communicated to involved people than today. Especially, respondents from middle management asked to be granted more freedom by defining more comprehensive mandates based on awarded trust, thus rejecting the current “zero risk culture”.

Looking at emerging initiatives to be leveraged to foster entrepreneurship in the field of mandates, the branch certification process was seen as an interesting approach to grant more comprehensive business mandates based on proven profit delivery and process maturity. Similar to the findings from investigating organisation and processes, comprehensive business mandates were also seen as limited by the missing employee competences, here especially in the fields of understanding and selling entire security and comfort solutions.

5.4 Aspects of long term orientation

To guide the field research regarding aspects of long term orientation and the effects toward entrepreneurship, five specific research sub-questions were derived beforehand (please compare section 3.4 for the respective discussion). As a first aspect, planning horizons and involved time horizons of headquarters and subsidiary strategies were to be identified, including their linkage to the vision and mission statements of the firm. Further, the time horizons of explicit headquarters and subsidiary innovation planning, new venturing and firm renewal activities were to be investigated. As already indicated by the pilot study as potentially relevant, typical periods of service of executive managers in the subsidiaries and headquarters organisations, and identifiable correlations between these periods of service and the intensity and success of entrepreneurial activities had to be researched. To understand the status-quo of current orientations as well as potential levers to change it, the relevant drivers towards longer (and shorter) time horizons of strategies, entrepreneurial activities, and the periods of service of involved executives had to be considered. And throughout these aspects, potential current inhibitors and enablers towards most appropriate time horizons allowing for successful entrepreneurial activities had to be identified.

The findings are reported hereafter in three sections: issues on the strategic level of entrepreneurship including the vision and mission aspects in section 5.4.1, aspects related to

periods of service of executive managers in section 5.4.2, and further findings as emerged from the field research in section 5.4.3.

5.4.1 Vision, mission and strategies

Content wise, the Siemens vision was completely reworked in 2010. In particular, it introduced the term “pioneer”, linking the vision to an extensive citing of the founders of the company and their early achievements⁸⁶. The current company values are linked to the past as well: “Our Values – responsible, excellent and innovative – have been the basis for Siemens' success for over 160 years.”⁸⁷ In parallel, since January 2010, top executives (Siemens board members, cluster and division heads) regularly cite the founders of Siemens (Werner von Siemens, Carl Wilhelm Siemens, Carl Heinrich von Siemens) and their entrepreneurial activities in all internal quarterly communications (including printed newspapers and emails). All in all, this can be seen as a “back to the future” approach, creating a basis for a strong identity for Siemens employees again by leaving the unfortunate issues of the recent past (e.g. bribery scandals and the closing of many unsuccessful businesses) and re-embarking on the pioneering spirit of Siemens in the 19th century. CEO Peter Löscher summarised the development in one sentence in his letter to all employees at the end of 2010: “Today, Siemens is again a normal, world-class company.”

However, the new definition of the company vision, as described above, was not reflected by most of the interviewees' answers. Only Ralf Dunkel – being part of the Siemens corporate head office in Munich – saw the firm vision as being clearly entrepreneurial, relevant and visible for employees:

⁸⁶ The Siemens vision: “Siemens is a global powerhouse that looks ahead and takes the lead. And this pioneering spirit has always defined our company. For us, being a pioneer means more than just fostering invention and embarking on new paths. It means forging ahead into uncharted territory by developing, marketing and integrating leading-edge products and solutions tailored to today’s requirements. It also involves taking calculated risks to push innovation. This willingness to innovate, coupled with conviction and passion, is what motivates our employees. Only the kind of teamwork that enables all players to give their best, shoulder their responsibilities and leverage their strengths can yield true pioneering achievements, whether in 1847 – the year our company was founded – or today. And it’s this pioneering spirit that informs our company’s vision of our technologies and tomorrow’s key markets.” Source: http://www.siemens.com/annual/10/_pdf/Siemens_AR2010_Vision.pdf, page 64, last accessed 2010-12-31

⁸⁷ Source: <http://www.siemens.com/about/en/index/values.htm>, last accessed 2010-12-31

“And the corporate entrepreneurship, when you are talking about Siemens, again, there you can see: there is a clear vision, you know: answer the toughest questions, you know, there is a clear... so this is also for me a kind of entrepreneurship, that the board, and the CEO, that they have a clear vision where this company should go for. [...] and a vision is not... a vision you do not have for the next year, you have a vision for... what is in five years.”

[Ralf Dunkel, Global Project Lead SMART Initiative, 21.10.2010]

This view was not shared by any other interviewee. Nor could secondary data reveal comprehensive links from the overall vision to the several strategies defined on sector, division and business unit level. Nevertheless, the importance of defining and successfully communicating a “vision” was strongly confirmed; with Siemens Shinwha, especially, being reported as currently “feeling lost”:

“[...] they don't see the vision what they try to be, and in my opinion, they are feeling a little bit lost” [Michael Bosshard, Regional Manager for Korea in FS HQ, 3.9.2010].

“[...] [t]o motivate people, [you] need to give a clear vision to them. [...] this is one example to communicate with the people, otherwise they don't understand our way, they don't understand the vision, they don't have their own dream. So we need to communicate the dream... effectively and based on trust.” [HW Kim, CFO BT KR, 9.8.2010]

Having a vision was even seen as simply fundamental to any entrepreneur:

“An entrepreneur for me is somebody who has a clear vision about the future of whatever he is doing: the project, or the position, or the role he has. An entrepreneur is able to bring this vision across to other people, that they feel part of this mission and vision... an entrepreneur is a good communicator, so he is... I mean... when you try to motivate people then you have also to communicate in a very good way...” [Ralf Dunkel, Global Project Lead SMART Initiative, 21.10.2010]

On the next lower level in the organisation, the most recent publication on the vision and mission of the Building Technologies division simply states: “We are the preferred partner for energy efficient, safe and secure buildings and infrastructure”, and repeats the three values

defined at top level⁸⁸. On the level of the business unit Fire Safety, neither vision nor values are provided. The Fire Safety strategy is formulated as following: “Fire Safety for the World” is based on proven success factors: Global Presence, Experience in Fire Detection, Installed Base and Migration Competence, Regulation Management’. Unfortunately, this represents the status quo of the business at Fire Safety, and does not depict the planned strategic initiatives in strengthening business by a greater focus on specific needs in vertical markets (like marine, train or wind power business) and moving into “intelligent response” applications which manage incidents from fire safety and security systems in sophisticated and comprehensive ways. Obviously, the newly formulated Siemens vision has still to be adapted by the respective definitions in subjacent organisational structures.

Turning to the level of company strategy, the current business strategy of Fire Safety headquarters received a consistent but surprisingly negative feedback, especially from Korean management representatives. For Daniel Bertok (CEO BT Korea),

“[...] there is no strategy into a significant increase in non-served markets – like the US developing countries and Asia Pacific as a whole. [...]t’s a careful strategy which you can write down as ‘return on sales first’ – on a yearly basis or even quarterly, and not on maximising the business plan over the potential of the future. [...]t’s more like maintaining the status-quo and doing very careful growth initiatives.”

YK Lim (the sales director of Siemens Shinwha) stated in the interview that “[t]here is no long term business strategy [of Fire Safety]”, picked the Fire Safety strategy booklet up from his desk, scanned it shortly and confirmed: “I cannot find anything for the global strategy.” Daniel Bertok (the CEO of BT Korea) openly admitted that the current Siemens focus on quarterly and yearly profit delivery (directly linked to the end of year bonus of managers involved) and the human resource model of exchanging key managers every two to three years (due to a Siemens career model of “top talents” holding these positions, please see section 4.4) would make it unattractive to define and implement long term strategies.

As a further effect, representatives of Fire Safety headquarters as well as Siemens Korea saw a key reason for the missing strategic growth perspective also in a high percentage of the Fire Safety profit being transferred to Building Technologies every year. This removed the money

⁸⁸ As defined in a respective presentation published in November 2010 on BT intranet as https://workspace.sbt.siemens.com/content/00000013/intranet_docs/GC%20Documents/division_presentation_bt_en.pdf

for significant investments by treating Fire Safety as the “cash cow” within Building Technologies. Interestingly, the acquisition of Siemens Shinwha was initiated by the Siemens Korea organisation (not the Fire Safety headquarters executives), but finally paid by Building Technologies, thus bringing back delivered profit into a growth investment in this case.

Looking at the SMART project case, the strategic aim of establishing global headquarters in coming years was perceived as inspiring and adequate. Again however, the evidence of sticking to this strategy and successfully implementing it is not yet available.

The vision for the SP new setup entity was not formally established at the time of the field investigations, and was expected to change again significantly when sold off at the start of 2012 as planned. Since the previous business strategy of Security Products clearly failed, the new target of divesting the activity towards a new firm setup was seen as an adequate new strategy for survival.

Overall, the concrete findings on the level of company vision and subsequent strategies were obtained from the backgrounds of established Siemens entities and businesses. As the main finding, the absence of tangible long term goals was primarily linked to applied achievement judgment periods of only one to two years, and respective promotion procedures of executives as implied by the top talent program and unfolded in more detail in the next section.

5.4.2 Periods of service in key executive positions and achievement judgments

A next key aspect of longevity can be seen in the periods of service of managers in one specific executive position, presumably impacting corporate entrepreneurial behaviour and endeavours. The CEOs of the acquired Shinwha Electronics and iMetrex served, or rather acted, as independent entrepreneurs for ten years and more. Within Siemens Building Technologies and Fire Safety, CEOs on the level of business units or country organisations typically stay for two to three years and then move on. Daniel Bertok, a German, and the initiator of the Shinwha acquisition, left his job as the CEO of Building Technologies Korea after three years, with Sander Herden (a German) as his successor – based, again, on a delegation limited to the maximum of three years. John Davis was appointed as the new CEO of SP new setup for two years – with the clear goal of finding a buyer for the entity towards the end of his term. Moving on within two to three years is also based on the top talent career concept (please see section

4.4) within Siemens; top talents – usually filling these executive positions – have to show such a development to the next higher levels to maintain their status.

These two to three year stays in a specific executive position proved to be highly controversial within Siemens, and 14 out of 15 interview respondents judged current service periods as clearly too short. A majority advocated five year periods on average, arguing that otherwise achievements could not be properly judged. Furthermore – and linked to the business domains of Building Technologies – it was brought forward that it would take years to build up the specific business domain knowledge. Thus, interviewees were not only asking for longer stays, but also for appointments of executive successors from within the respective industry environment, instead of promoting internal Siemens top talents coming from different industries. Nevertheless, only two respondents claimed an undoubted existence of a direct relation between length of service and delivered business results. Periods of service of 10 years and more were seen as negative and leading to a standstill regarding new ventures, and it was also claimed that the variation in personal inclinations towards entrepreneurial endeavours would be more determining than the years of service.

Looking at CEO achievements currently measured primarily by growth and profit on a yearly basis, several interviewees proposed to significantly expand the judgment periods⁸⁹:

“...we focus on the next year performance, short term performance, but... in order to create and find new business, we need a certain investment in a certain period, but without any activity... results, then I think, the working level, they don't like to invest their time for new businesses, because that... they measure their current performance – that is the conflict. Then the manager, the leader, should compensate that, because they... maybe through the target settings, they minimise the conflict, more invest for the new market, new business, long term...” [SH Wong, Head of R&D and Manufacturing at FS Korea, 3.11.2010].

Additionally, interviewees also proposed to use the number of business innovations under investigation and in implementation as a key performance indicator (KPI) to create a stimulus to look for new entrepreneurial endeavours.

⁸⁹ In a similar way as discussed for the financial industry managements to prevent the next crisis

Across all cases, periods of service of top executives in a specific position were found to vary significantly, with Siemens managers only staying for two to three years on average, whereas the leaders of the independent entities served for 10 years and more.

5.4.3 Further related findings

In the context of long term orientation, another aspect – which also could be labelled “cultural issues” – was revealed. To foster entrepreneurship, respondents saw the need to significantly reduce current risk averseness, and take more decisions:

“...in a year, in a given business year, you may have ten opportunities to make decisions, let's say. Important decisions I mean, of a weight which is substantial. And if you only make one decision, or two decisions, your success on what you get out of it is limited by the impact of those two decisions. But if you were able to make ten decisions, or nine decisions out of the ten, yes sure, one or two will go bad, but at least you got six or seven positive out of... and in the balance, it is better for the company.” [Keiko Safaia, Chief Marketing Officer BT, 4.10.2010]

There were also calls to take decisions faster, especially in business fields with fast-paced innovation cycles, like security products:

“That does involve timing issues [...] it also needs faster decision cycles, because you may miss a window of opportunity simply because you think too long about it. If you have asked everybody which has to be involved within this...” [Jan Traber, Integration Manager iMetrex, 15.9.2010].

This was even acknowledged from a corporate headquarters perspective, but without providing the “golden standard” of how to get there:

“[We know] from our own experience, that decisions, in the past, sometimes have... took too long to get the things moving, and only once you have agreed everything, then really you can drive it forward. And of course the question would be: what could we do to speed up these decisions?” [Ralf Dunkel, Global Project Lead SMART Initiative, 21.10.2010]

However, the SP new setup was seen as one possible answer on how to speed up business decisions: the separation of the entity from Siemens structures. The firm was seen as much faster acting in the new setup:

“...not only because we are smaller, but also we are much closer together, and decision making process is much, much easier, much more efficient” [Robert Schmid, Head of Product Line within SP new setup, 19.8.2010].

The SP new setup entity could be interpreted as a local entity with a maximised level of autonomy in its business decisions (when comparing it to the rest of the Siemens entities not planned to be sold). Unfortunately, this approach is very unlikely to be accepted for entities planned to stay with the Siemens conglomerate.

5.4.4 Summary

Starting with the investigation of the vision and mission providing the long term perspective of a firm, per-se, the respective statements of Siemens AG as formulated at the start of 2010 return to the pioneering spirit of Siemens AG as vivid in the 19th century. However, the respective definitions on a divisional level simply repeat the global value set, and were seen as primarily focussed on keeping the current business. Most interviewees did not perceive Siemens entities to have – and especially not to live – a clearly entrepreneurial vision. On the level of the business unit Fire Safety, no vision statement could be identified at all.

The strategy of the Fire Safety business unit was, in general, not seen as being especially entrepreneurial: no definitions of longer term targets (e.g. considering the entrance into new business fields) could be found. As an exception, the strategic aims behind the SMART project – driven by Siemens AG – were perceived as ambitious and long-term, but considered to represent a unique endeavour regarding the granted top management sponsorship. The missing long term goals were explained by the adverse effects of applied short periods of achievement judgment of executives and employees and promotion procedures relying on the top talent program definitions. The top talents’ two to three year stays in a specific executive position proved to be highly controversial within Siemens. A majority of interview respondents judged current service periods as being clearly too short, advocating periods of five years on average.

Looking at CEO achievements currently measured primarily by growth and profit on a yearly basis, several interviewees proposed to significantly expand the judgment periods in a way similar to that discussed for the financial industry management in the aftermath of the global financial crisis. Additionally, interviewees proposed to use the number of ongoing business innovations as one of the key performance indicators (KPI) to create a stimulus for new entrepreneurial endeavours. In the context of long term orientation, respondents also saw the

need to significantly reduce current risk averseness, and to take more, and faster, decisions to foster entrepreneurship.

5.5 Interactions of researched key aspect

As part of the guiding research sub-questions derived and discussed in sections 2.3 and 3.4, the interactions between the investigated key aspects were analysed to allow for conclusions towards potential multi-factor patterns and related measures to foster entrepreneurship. All interviewees were asked what specific interactions they observed among processes and organisation, granted mandates and long term orientation. Respondents agreed on the perception that a long term orientation was the basis for granted mandates and the setup of organisations and processes. Long term orientation was viewed as strongly related with entrepreneurial behaviour (please see section 5.4 about the request for longer stays of executives), and current deficits in this area:

“I really think that long term orientation is one of the key aspects that we have lost over the years... If you define what long term is: [...] five years and above, and when it comes to that kind of planning, it is not particularly visible, I know that we do it, but it is not visible in the sense that we really know that there are people developing the future things with that kind of time horizons. So I would wish that there would be more focus on long term orientation, and obviously people would need granted mandates to do so [...]”

[Sandra Amrein, Management Development at Siemens Corporate Office, 9.11.2010]

The dependencies between granted mandates and organisations and processes were viewed as highly controversial, with three respondents seeing granted mandates defining organisations and processes, three respondents advocating organisations and processes defining granted mandates, and one respondent addressing it simply as a “catch-22 situation”⁹⁰ (please see Figure 5-4 for the summary). So, the findings seem to imply certain iterative or reciprocal relations among the two – not surprising when written down mandates are seen as part of the process and organisation “specification”.

⁹⁰ Used here to indicate an *unsolvable logical dilemma*.

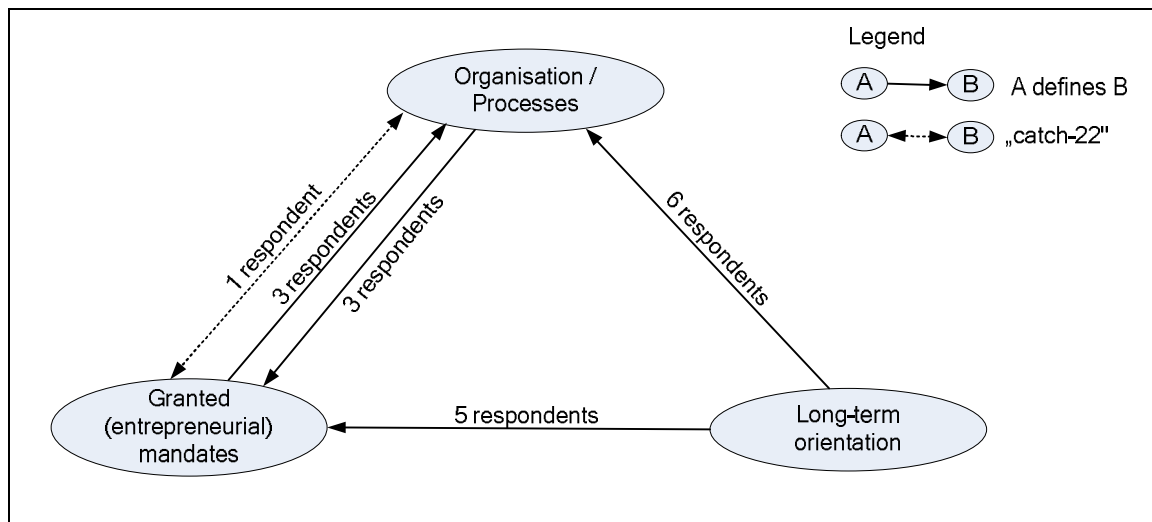


Figure 5-4 – Interactions between researched key aspects as seen by interviewees

The variation within the answers about specific interactions reflects the different assumptions about which elements drive others (please see Table 8-20 in Appendix K for the complete list of answers). Most feedback was given in relation to the interactions of organisation and processes. Long term orientation as driving the definition of organisations and processes was also linked to employees serving long term and thus challenging the setups. On the other hand, it was asserted that well defined organisations and processes would foster the long term orientation of employees (e.g. motivate them to stay with the company). Overly complex organisational arrangements and processes were seen as hindering the definition of clear mandates, thus hindering entrepreneurial activity in general (e.g. cited effects of bureaucracy).

Corresponding to this, it was argued that granted mandates should be longer term to allow for entrepreneurial activities. Well defined longer term mandates were seen as leading to improvements in organisation and processes, whereas otherwise too many additional processes would be created. Well defined granted mandates were also seen as fostering the long term orientation of employees (e.g. motivating them to stay with the company). The cluster analysis of the answers by cases and functions of interviewees (please see Table 8-20 in Appendix K for the details) revealed two significantly case specific interpretations of the discussed factors. First, SMART project members argued explicitly for the adaptability of organisations and processes according to long term goals. Arguably, the new SMART headquarters function with its step by step business expansion towards world market responsibility is expected to require such adaptations, based on quite clear and stable long term goals. Second, interviewees engaged in the SP new setup argued that granted mandates should be long term “by definition” – that is, as

a matter of course – when considered specifically entrepreneurial. This could be interpreted as a reaction to previously experiencing business mandates in the SP old setup as being unstable over time, which was seen as one reason for not achieving the intended business goals.

The discussion of interactions between these aspects revealed again the major controversy about the role of processes as discussed in section 5.2. Two respondents advocated the reduction of people dependence by good processes (please see section 5.2.1), allowing the short term exchange of employees without impairing the firm's performance. This perception – which might well be applicable in routine jobs on the business exploitation side – was clearly rejected in the fields of leadership, sales based on relationships, and innovation:

“...no matter how you change this backwards and forwards, people are the key factor [...], because there is no machine that can invent something new. [...] Even though there might be a process to do so, without the right people living those processes, you have no chance for future success”. [Sandra Amrein, Management Development at Siemens Corporate Office, 9.11.2010]

“[T]he more important human interaction is, the less it is people independent! Either in the sense of sales, for instance, or is it for instance a managerial task, which is a main people task, OK?” [Jan Traber, Integration Manager iMetrex, 15.9.2010]

So the degree to which successful recognition and exploitation of entrepreneurial opportunities depend on specific people and their personal capabilities and orientations became a key issue. This aspect will further be discussed in the next section.

5.6 Findings on further aspects as emerged from the field research

So far, the effect of organisation and processes, granted mandates and long term orientation – and their potential interactions – on entrepreneurial activity was actively sought in the research process. Further aspects relevant for fostering entrepreneurship also emerged in the interview process and findings from secondary data without being explicitly sought. These are reported hereafter in detail, and finally summarised in a way comparable to the findings of similar studies focussed on corporate entrepreneurship in practice.

5.6.1 Employee selection, capabilities and career making

The aspect most cited by interview participants relating to employees and their capabilities in the context of initiating entrepreneurial endeavours was the current employee selection

procedures. Respondents asked for the closing of gaps in the specific business domain knowledge, less personal career orientation, and more appropriate entrepreneurial general competences:

“Because domain knowledge in Building Technologies doesn't get built in months, it takes years [...]. I personally feel in Building Technologies... not so convinced about the model of... rotation... it is maybe fine from an individual's career point of view, but from a business point of view, not to have domain experts serving functions over time, and growing within a domain is a big loss for the organisation. [...] Building Technologies needs to hire more people from competition, and not so much from internal... found within Siemens... [...] let's not take away the fact, that the more knowledgeable you are... you will actually be able to make more entrepreneurial decisions.” [Keiko Safaia, Chief Marketing Officer BT, 4.10.2010]

So the Siemens career model – already discussed in section 5.4 for its implications towards long term orientation – was reported to lead to a significant limitation in business domain knowledge of the holders of key management positions. From all respondents, career making was negatively related with entrepreneurial behaviour:

“[...] [I]f you have only career making people, [...] they are the wrong ones... [...] trying to be an entrepreneur is stopped by those guys at any time. [...] [Y]ou must really shape the people into a different culture to really have this more entrepreneurial thing [...] and you don't need to hire people who want to make careers” [Robert Schmid, Head of Product Line within SP new setup, 19.8.2010].

Within this Siemens “career making”, the selection of entrepreneurial successors was reported as being of no priority, although it was perceived as important by some of the respondents:

“Most people are thinking about going up the ladder, rather than creating something as a real legacy for the business that they are managing right now. [...] I have got a really good example of where I put succession planning in, we just based on entrepreneurship, and it got overwritten. I don't think the succession planning is very effective within Siemens, and I don't think that rewards entrepreneurship as well.” [John Davis, CEO of SP new setup, 1.10.2010]

Furthermore, deficiencies in competences related to sales and business development were reported, and a rather weak focus was put on customers and, thus, the whole “outside world”:

“We breed this kind of person to be internally focussed, and then we expect them to be called an entrepreneur” [Michael Bosshard, Regional Manager for Korea in FS HQ, 3.9.2010].

These findings are supported by the current provenance of Siemens top talents (please see section 4.4). When Peter Löscher took over the Siemens CEO position, he requested an overview of the specific business process areas from which the top talents came. The data delivered led to the quite famous formula of “11-6-3”: with every 11 top talents coming from R&D, there are six from purchasing, and only three come from product management and sales⁹¹. Furthermore, the selection of the top talents has been found too dependent on direct superiors, opening up the purposeful push of friends to create “rope teams”. As a consequence, the corporate human resource office has been ordered to start a re-evaluation of all Siemens top talents based on a standardized measurement and judgment to be carried out by independent experts not related to the respective business unit or division. These activities were started in January 2010, but have not yet emerged within the Building Technologies division.

The inward orientation noted above was also seen as being reflected in the yearly innovation review meetings of Building Technologies division⁹²:

“...frankly to say, this year’s Innovation Review, in my view... was more a review of R&D programs. Hardly one or two topics which were really... we saw some innovative ideas, or innovative topics, real innovative topics. There is a gap” [Keiko Safaia, Chief Marketing Officer BT, 4.10.2010].

Congruent to this finding, an “outward orientation” of executives towards the market environment by meeting customers was not seen as being a high priority:

“I know that every one of my bosses that I've had since I am being in, [...] very few of them actually went to see any of my customers. Now that is not entrepreneurial!” [John Davis, CEO of SP new setup, 1.10.2010]

⁹¹ as discussed with Prof. Dr. Jörg Sauerbrey, CD S SD ST, on 2009-11-19

⁹² Every May, business unit CEOs have to present all planned activities towards new business fields, product portfolios etc. for coming years to the BT CEO. In December, a shorter update of carried out activities and potential new developments have to be presented. Together with the Strategy Review - which bases on the key elements of the Innovation Review – this is the most important long term planning activity.

Summarising the findings, respondents asked, in the context of Siemens entities (including the SP new setup), for closing existing gaps in the business domain knowledge to overcome the current personal career orientation which would lead to rather short stays in specific positions and, thus, little incentive to go for longer term entrepreneurial endeavours; and to have more fitting competences, relevant for entrepreneurship activities. No comparable claims emerged within the context of the previously independent Shinwha and iMetrex entities. The significant entrepreneurial activity of the owners of Shinwha and iMetrex, who were also the long term executives, was reflected by the high growth rates of their business and confirmed by interviewee feedback. Key staff members in R&D, manufacturing and sales were found in the respective due diligence investigations as having already served for five and more years.

5.6.2 Risk and risk averseness

Taking risks and levels of risk aversion are key aspects of entrepreneurial orientation and behaviour (please see sections 2.1.8 and 2.1.18). Several respondents observed a dominant “culture of taking zero risk” current in the investigated Siemens entities. General risk averseness

–

“[...] if you say: I have taken a risk – it's a bad thing in Siemens! [...] So if you are the leader in a business unit, at the moment the culture is: not to show that you taking risk!”

[Michael Bosshard, Regional Manager for Korea in FS HQ, 3.9.2010]

– was especially seen as linked to the aspects of not endangering one’s own career by endeavours which may fail, based on a lack of forgiveness for such failures and little expectation of receiving significant recognition for success (please see subsequent paragraphs):

[...] [W]e lack the culture of trial and error, and we don't want to get punished for doing something wrong, and... [...] rather following the rules than trying something new; and entrepreneurial: try something, take the risk.” [Jan Traber, Integration Manager iMetrex, 15.9.2010]

The lack of forgiveness in case of failures was also noted in the context of the Siemens career model of short stays per position, thus fostering a role model of the successful top talents not being responsible for any noticeable failed endeavours until the next promotion (please compare sections 4.4 and 5.4).

To see more entrepreneurial activity, Michael Bosshard simply proposed: “...remove the penalties for failed attempts at being entrepreneurial.” However, there seem to be fundamental

and systematic mechanisms leading to a higher risk aversion in established and large firms when compared to start-ups and small companies led by the owners:

“[T]he people who are most impacted by the risk [in small companies], are very close to the risk itself, and therefore you know, whether you can cut the losses, and move into a different direction, to gain time. Whereas in a large organisation, this is fundamentally not possible, because the man impaired by the risk is not even seen, and therefore everybody has to justify to another layer, and therefore the time taken to really come up to a decision, that, yeah, we made up a wrong choice, in a particular technology, or a particular hardware architecture, or a particular approach, to re-change, to redefine a course, can really be hard [...]” [Keiko Safaia, Chief Marketing Officer BT, 4.10.2010]

So, the former Shinwha and iMetrex entities represented small and independent companies with the owners judging and taking the risks of entrepreneurial endeavours directly. Proposed new businesses were reported to be discussed typically directly with the owners as the acting key executives. In contrast, the many layers of agents in Siemens entities to whom new entrepreneurial ideas have to be justified – and the principal (or owner) not being visible at all – significantly changes the environment for taking risks or being risk-averse. Furthermore, the complexity of involved organisations, processes and especially technology and, thus, shared product platforms and architectures makes it more difficult or time consuming to change direction.

5.6.3 Culture, cultural difference and diversity

Current low levels of risk taking in the researched Siemens entities were directly related by interviewees to the still dominant role of German managers:

“[...] you would find more risk takers in other cultures than in Germany... The German culture per definition is not particularly risk taking” [Sandra Amrein, Management Development at Siemens Corporate Office, 9.11.2010].

This aspect was however also linked back to the company culture in itself:

“I think, in terms of risk taking, German people are typically quite risk-aware, so... also we at Siemens have certainly a tendency to more focus on the short term things, on the existing things, other people are much more open to take risks, and they are also willing to invest at them...” [Ralf Dunkel, Global Project Lead SMART Initiative, 21.10.2010]

The efforts in strengthening diversity at Siemens in recent years were not reflected in interview

feedback on real achievements there, and most key executive positions at Building Technologies are still held by Germans. As a contrast, middle management in the regions – typically representing local nationalities – was seen as having entrepreneurial drive, but currently being hindered in pursuing such endeavours:

“[...] if given the opportunity, they were able to exercise some entrepreneurial spirit. It means us taking a risk, it means us being willing to take risks in certain regions, and accepting that entrepreneurial activity generally means that one in however many ideas really flies, and a number of them fail, and not persecuting people for failure. [...] Because at the moment we have a tendency to say: I told you so, rather than say: at least we tried [...] [A]t the moment, there is nothing there that gives the people the opportunity to invest in an idea...” [Michael Bosshard, Regional Manager for Korea in FS HQ, 3.9.2010]

Not surprisingly, significant cultural differences were reported from Far East subsidiaries when comparing the way of thinking with the European (German) headquarters:

“German culture is more... logical... and then based on... contract... very logical. Korean culture: less logical, less contraction, but more emotion, more based on... human relationship. [...] I believe you, you become my friend... this happens naturally... but Western... cannot understand it!” [HW Kim, CFO BT KR, 9.8.2010]

This “getting friends” was linked to significant spending for luxurious dinners and subsequent visits in bars – or invitations to the golf course. But with the establishment of the new compliance rules (please see section 5.2.3), such spending is now drastically limited⁹³, and people in Far East entities simply expected to lose these business opportunities to the competition:

“I think, especially in the environment like China, Russia, I cannot imagine: if we are 100 percent compliant... we cannot make business. And I know, Peter Löscher [Siemens CEO] is saying we can be top compliant, we can use to the top success in the business area. But I don't think that is going to happen in the market like Russia – could not be!” [Yao Wang, Head of Product Management at FS China, 7.9.2010]

Such lost business was also already documented by the business figures of Fire Safety Korea for business year 2009 and 2010 (please see section 4.5). It was also claimed that the appointment

⁹³ Current spending limit for a dinner invitation is US\$ 25 per person.

of more executives coming from the specific region would represent a much better embedding of the firm in the local culture and language. Looking at the formerly independent Shinwha and iMetrex entities, both companies were dominated by the respective Korean and Indian culture, having almost 100 per cent domestic staff (i.e. a polycentric staffing approach). So cultural diversity was also not present there and could, therefore, not have played a moderating role towards entrepreneurial activity. Entrepreneurial culture, it seems, was primarily given by the specific personalities of the owners being also the key executives.

For the SP new setup entity, it was decided to appoint a new CEO with a given track record of an independent entrepreneur (please see section 4.7). This represents a quite interesting finding: the repeated yearly losses in the business, and the aim of achieving a turnaround and subsequent exit led to the appointment of an entrepreneurial character – which was not reported at all as an ingredient considered as important for executive appointments in entities staying within Siemens.

5.6.4 Trust and motivation

Linked to the previously discussed cultural differences, several respondents saw a deficit of trust by headquarters management in local entities' managements and employees in general. Interestingly, two "levels" of trust were perceivable in the data, with the first being absolutely fundamental:

“[...] trust without any shadow of a doubt is the foundation for choosing where you work” [Michael Bosshard, Regional Manager for Korea in FS HQ, 3.9.2010].

However, the main area of feedback and discussion was on trust not being granted, but being replaced by processes, rules, regulations and especially controls of interaction and behaviour:

“Siemens policy, is very simple: don't trust the employee, don't trust the customer. This is their principle! Based on this principle [is] how we do the business. But we can do the compliance in another arrangement. We trust the people, we trust the customer, we trust the officials' behaviour. Then, we can do. [...] company selecting employees, if they manage regulations, if they do not, then we will go into another disciplinary leadership. It is not trust based. I can say: many people are demotivated; most of people.” [HW Kim, CFO BT KR, 9.8.2010]

Several respondents asked for such granted trust as part of a value based concept of a company culture, instead of founding it in rules and controls:

“Siemens [...] has a rule based culture, and not a value based culture, because you can achieve the integrity and compliance also by living it. By trust. Sure, we have [...] completely screwed up the subject, and we have to go along now with a rule based approach, but there is no fundamental inheritance that you have to do it that way. You can do it much more value based.” [Jan Traber, Integration Manager iMetrex, 15.9.2010]

Acknowledging the pressure on Siemens top management to introduce tight compliance controls in the aftermath of the big bribery scandal some years ago (please see section 5.2.3), the hugeness and complexity of the Siemens organisation was also viewed as a driver for rules, regulations and tight controls. However, a reported consequence was the demotivating effect on employees’ willingness to implement entrepreneurial endeavours:

“I would say we have people with entrepreneurial capabilities, entrepreneurial traits, but I think they are restricted in what they do. I think they lose the motivation to use their skills... [...] they are not motivated to do so at the moment” [Michael Bosshard, Regional Manager for Korea in FS HQ, 3.9.2010]

Regarding the appointment of new employees in the Fire Safety business unit, the human resource director, Hans Meier, claimed a rather good starting point in regard of such motivation, but a severe decline over time:

“I think... we start with quite good... motivation topics... for this entrepreneurial topics, and then we leave this person on his own, and he should find the way how to... overcome with all the existing rules [...] at the end, this good motivation topic becomes a demotivation factor.” [Hans Meier, Global Head of FS Human Resources, 20.8.2010]

Even more pessimistic was Michael Bosshard:

“... the true entrepreneur in my opinion would leave our business in order to be able to fly... because their wings are clipped here.” [Michael Bosshard, Regional Manager for Korea in FS HQ, 3.9.2010]

However, he saw also the opportunity to restrict the application of these tight controls just to the operational side of the business:

“...entrepreneurial behaviour which is [...] taking opportunities in the market, seeing them before other people do, and exploiting those opportunities with some sort of solution or offering, [...] quite frankly, processes are a distraction, are an internal activity. And they are

very important about getting consistent delivery in what we do, but should the entrepreneur be tasked with running them?” [Michael Bosshard, Regional Manager for Korea in FS HQ, 3.9.2010]

Not surprisingly, the existence of many less rules and controls towards correct business conduct were reported for the previously independent Shinwha and iMetrex entities. The small size of these organisations was seen as key to providing sufficient transparency concerning employees’ behaviours without installing additional control provisions. Furthermore, the dominant Korean and Indian business culture was seen as less rigorous towards doing “clean business” as currently applied in Siemens entities.

Within the SP new setup, tight rules and controls, as currently used in the other Siemens entities, are seen as primarily limited by the costs involved, which are judged as unbearable for the firm. As a consequence, the job of the compliance officer has been eliminated.

5.6.5 Entrepreneurial achievement recognition, rewards and incentives

The motivation to go for entrepreneurial endeavours was also linked to aspects of recognition and rewards granted for such activities, and applied KPI systems for calculating granted incentives. “[R]eward is one part of motivation” [Jan Traber, Integration Manager iMetrex, 15.9.2010], but within the Siemens entities,

“... the behaviours rewarded [today] are not necessarily in line with the behaviours of entrepreneurship. I have seen in some of the people that manage me in Siemens that rather tick a box than that they have achieved something, rather than actually going to create something new [...] what they do first of all is: tick the easy wins, that will get them a good job review, and there is not enough emphasis placed on creating and being entrepreneurial. This structure is backed by KPIs.” [John Davis, CEO of SP new setup, 1.10.2010]

This aspect of risk-averseness was cited by several respondents again:

“I think, to be recognized that it is OK to take a risk is important, is very, very important [...but] the current recognition is for zero risk! Nobody is motivated to give you a new idea, because there is always a risk” [Michael Bosshard, Regional Manager for Korea in FS HQ, 3.9.2010]

The relevance of incentive systems on personal behaviour in the Siemens organisation was confirmed by several respondents:

“Target setting, incentives... is for me still... we are all humans, and if we have a smart system pushing that for everybody, every individual, I am pretty sure this helps a lot. [...] [I]f I am looking at the Siemens [...] environment here, it is the only way of really bringing it forward, because everything works over rewards and [...] incentives” [Robert Schmid, Head of Product Line within SP new setup, 19.8.2010].

However, there was even more importance seen on the side of perceivable achievement recognition:

“I think: recognition before reward! [...] [M]ake sure that our management sees that there is personal recognition for this kind of thinking. [...] I think the message, the benefit is more significant to the rest of the organisation, to see that the guys who worked on the idea were rewarded... is more motivation of the rest to the organisation [...]” [Michael Bosshard, Regional Manager for Korea in FS HQ, 3.9.2010]

Paul Amstutz linked this extrinsic motivation of achievement recognition to people specific characteristics:

“To be part of a successful team, I would expect this is already motivation enough... of course, at the end it is always a bit about the money, but... I am not coming because of... intrinsic motivation; that is mandatory.”

However, a certain “justice” in monetary rewards was clearly claimed as necessary:

“If I have come up with a new idea, the senior executives in this business have got a bonus from because it has made us more money, then it is only fair that those who have worked on developing that idea are rewarded” [Michael Bosshard, Regional Manager for Korea in FS HQ, 3.9.2010]

On the level of Siemens-wide initiatives, neither the top+ awards nor the “3i” initiative (please see section 4.3) were viewed as especially fostering entrepreneurial activity. However, top+ awards were cited as a good mechanism to show a broad audience that...

“...a team has really made a difference that can be measured, and they are then afterwards put up on stage, and they get a reward, and they are even in newsletters and things like that, [...] it is not just a creative idea, it's gonna go through the whole chain, [...] it is approved to be successful.” [Connie Clark, Global Head of Product Line Intrusion (before SP new setup), 8.8.2010]

For the formerly independent Shinwha and iMetrex entities, no explicit mechanisms of entrepreneurial achievement recognition and respective granted rewards and incentives for employees could be identified. In both companies, top management shared ownership of the firms, thus primarily participating in an increased value of the firm and paid higher dividends created by successful endeavours. In the SP new setup, no new approaches towards achievement recognition and respective granted rewards and incentives were reported. Arguably, a potentially different culture has yet to be developed – and this may require legal independence from Siemens first.

5.6.6 Decisiveness

Keiko Safaia [Chief Marketing Officer Building Technologies, 4.10.2010], the highly successful former (independent) entrepreneur and main owner of iMetrex, put it quite simply:

“First of all there has to be a culture of taking decisions, and taking ownership, this has to be broadened. [...] For me, entrepreneurship – without even thinking – would be a bias for decision. [Keiko Safaia, Chief Marketing Officer BT, 4.10.2010]

Interestingly, this view was shared by Peter Mueller, CEO of Fire Safety, who had never acted as an independent entrepreneur before: “Entrepreneurship is... being successful with the 80% approach... meaning: a fast decision is better than no decision.” Unfortunately, many respondents saw a severe lack of such decisiveness within Siemens entities, strongly linked with a risk-averse culture, and an absence of failure forgiveness and empowerment:

“And if you try to be entrepreneurial, that means: doing decisions based on your own understanding what is right and wrong, you are quite often... you are stopped, and halted by other people, who feel: oh this is too fast, I was not involved... by... whatever, by BAs [business administrators], or by compliance, or by whatever rules...” [Robert Schmid, Head of Product Line within SP new setup, 19.8.2010]

“Nobody wants to make a decision, because as soon as he does a decision, and it might be that this decision is wrong, we have the culture that [...] he needs to be punished. [...] Therefore, it is better to ask first, first the top management before I am doing a bigger... decision. Or whenever you need to make a decision, to do this decision in such a way, that the decision maker has at least the possibility to find somebody who can be blamed.” [Hans Meier, Global Head of FS Human Resources, 20.8.2010]

The concept of such “collective” decisions instead of having empowerment and accountability

with single persons was perceived as a legacy of the Siemens culture:

“... if you look at the fact that we needed a Peter Löscher coming into the organisation and changing the organisation and structure to ensure accountability, that shows you that we are from a cultural history rather used to taking decisions together, so that in the end nobody is responsible. So I think we need to create... or allow, for examples, even if that failed to be successful, so that people feel that they are actually allowed to decide, and they are wanting to decide. [...] I think that they are very closely linked, the decisiveness and the risk-aversion [...]” [Sandra Amrein, Management Development at Siemens Corporate Office, 9.11.2010]

But these “collective” decisions are also seen as an inherent effect of larger corporations:

“... it is a collective decision, there is... obviously more stakeholders, but you end up creating an opportunity for people to make decisions, because by default, the bias for decision making is rather low in a corporate environment. This is given. And therefore, if anybody is able to demystify the issues, and take a better assurance on the success, and also take the responsibility for those decisions, then you again have... that ability to move forward.” [Connie Clark, Global Head of Product Line Intrusion (before SP new setup), 8.8.2010]

So, good communication skills to “demystify planned entrepreneurial endeavours” seem to be required to get a positive decision. But even if decisions are taken at last,

“they are not properly documented, nor afterwards is the implementation of this decision communicated. [...] Meaning: we can go out of a meeting, three of us, and three of us will have understood something slightly different. And nobody then will write down then the minutes, and say: this means this for Joe, this means this for Susanne, and this means this for person X. So the way they are documented, and the way they are followed up is fuzzy. And therefore, they are not stuck to, not meaning that people are really trying to work against the decision, I don't think that anybody is really trying to work against decisions, I think sometimes they are just not properly communicated” [Connie Clark, Global Head of Product Line Intrusion (before SP new setup), 8.8.2010]

Taking all these obstacles into account, the solution for Jan Traber was simply to decide, even without having a granted mandate, respective rights or responsibility:

“I just took the decision, I didn't have the mandate, I didn't have the right, I didn't have

the responsibility; I took a decision! Very simple... [...] And that goes back: every morning, be ready to get fired. Because you may have made a mistake. Sorry, I have taken many decisions without competence, and so far nobody has shot me for that.” [Jan Traber, Integration Manager iMetrex, 15.9.2010]

However, most of respondents favoured activities to strengthen decisiveness in compliance to defined rules, and provide empowerment for taking decisions:

“...and then: empower them! And "empower them" in our case means: yeah, give them the freedom to decide things without asking always... [...]” [Karl Huber, Global Head of FS SYS, 29.7.2010]

He acknowledged the current low speed in decision taking in Siemens entities, but was rather perplexed about how to improve:

“...decisions, in the past, sometimes have... taken too long to get the things moving, and only once you have agreed everything, than really you can drive it forward. And of course the question would be: what could we do to speed up these decisions? [...] How to do it... of course that... this is a hundred-million-dollar question...” [Karl Huber, Global Head of FS SYS, 29.7.2010]

From a human resource management perspective, it was proposed that higher levels of decisiveness could be achieved by appropriate people selection and a changed attitude in management:

“...in the recruiting process: to have more people who really are... willing to make this decision and have the capabilities to do it. And at the end, I mean... this cultural change, we can as well try to influence the line management in order to go more in this direction... with all the limits HR has. I think we could as well... from our daily business, or daily behaviour, support the line management on saying: OK, let's try... let's do the decision, we are sure, we know it... and bring this attitude into the organisation.” [Hans Meier, Global Head of FS Human Resources, 20.8.2010]

Decision taking towards entrepreneurial endeavours in the formerly independent Shinwha and iMetrex entities was primarily done by the top management. For the SP new setup, a new culture of taking decisions based on the more comprehensive involvement of all stakeholders was reported. This approach was seen as requiring more time for decisions, but also as leading to a better commitment of all relevant parties, thus creating more sustainable and successful

decisions. So creating “collective decisions” in the sense of involving all relevant and knowledgeable stakeholders was judged as a preferable approach.

5.6.7 Summary

Reported further aspects relevant for entrepreneurial activity can be summarised by eight key elements: the requirement of an explicitly entrepreneurial company vision, mission and strategy (1); appropriate employee selection (more business domain knowledge required, less career orientation, more entrepreneurial and general capabilities) (2); a culture of risk taking and decisiveness (3); the necessity for a change from tight control to a culture of trust (4); a change from the current inward orientation to outward orientation towards customers and new business opportunities (5); the requirement to grant forgiveness for entrepreneurial failures and rewards for entrepreneurial achievements (6); the definition and measurement of more entrepreneurial key performance indicators (7), and strengthened collaboration and better communication among entities and employees (8).

5.7 Interactions of emerged aspects and revealed patterns

To inform the subsequent discussion chapter and the identification of appropriate activities to foster entrepreneurship within Siemens in the future, relationships between the various factors identified above as important in fostering or impeding entrepreneurial activity across the three cases have been configured into an ‘interactions diagram’ or conceptual framework. As shown in Figure 5-5 below, the prevailing process orientation (a) and having innovation mainly focussed on new technologies (c) was seen as fostering an internal focus by management and employees (b), somewhat hindering entrepreneurial behaviour. The lack of recognition and granted rewards for entrepreneurial activity (d) was primarily seen as a direct negative influence on levels of entrepreneurial activity, but may also impact other factors. The current top talent career concept (h) was viewed as supporting short term orientation (e), risk aversion (i) and inappropriate employee selection (l) which leads to rather weak employee capabilities (m) regarding business domain knowledge and entrepreneurial traits. Short term orientation (e) and weak employee capabilities (m) are reported as being negatively related to entrepreneurial activity. A reported high level of risk aversion (i) is fostered by the top talent career concept, the absence of failure forgiveness (k) and a still dominant German culture (n) which interacts with the current status of a lack of diversity of employee origins (o). Last, risk aversion and a lack of empowerment (g) leads to a lack of decisiveness (f) among key employees to seek entrepreneurial endeavours.

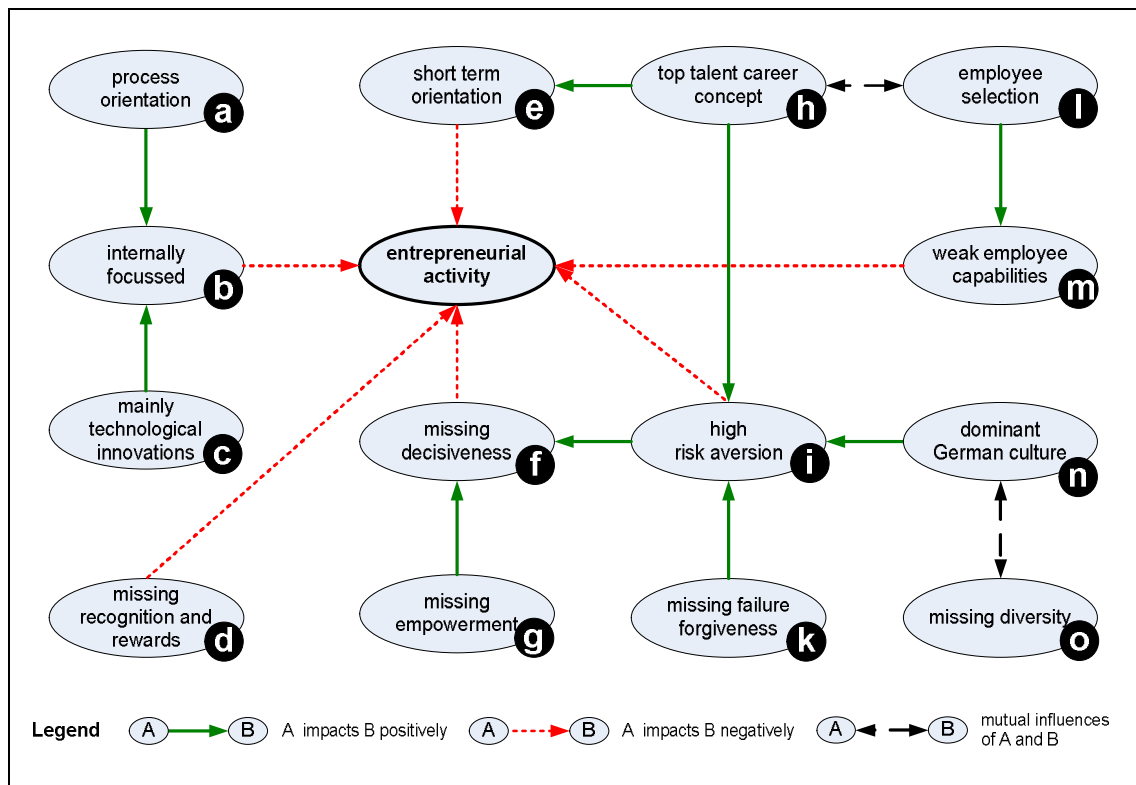


Figure 5-5 – Interactions between aspects and towards resulting entrepreneurial activity

It has to be recognized that the elements of this conceptual framework represent a whole variety of underlying dimensions, and especially various levels of culture (individual, firm and ethnic/national), or aspects of firm strategy and structural set-ups. Looking at the cultural dimensions, for example, it would be far too simplistic to assign identified elements to only one level of culture. A dominant national/ethnic culture is certainly influencing the firm culture over time, which can be expected to lead to a preference for individuals sharing similar cultural values and beliefs to join the firm. Furthermore, the factors identified in Figure 5-5 are also linked to the influence of organisational arrangements and processes, granted mandates and long term orientation, with these relationships explored in the subsequent discussion chapter.

5.8 Current main sources for entrepreneurial change

Looking at the three investigated cases, a recurring pattern of having the key source for business activity and change coming from outside the business unit Fire Safety is identifiable. The Shinwha acquisition (case 1) was mainly driven by the divisional organisation of BT in Korea, and not the management of Fire Safety. Setting up a global SMART headquarter in China (case 2) was primarily pushed by the SMART initiative from the Siemens AG top management. The

carve-out of the unsuccessful Security Products business (case 3) was supported and decided by the management of the Building technology division. With the new divisional initiatives about subsidiary certification and a systems-house approach, it becomes evident that the main push for entrepreneurial activity is coming from superior levels in the Siemens organisation and not from the business unit and its management. This aspect will be discussed in the next chapter in the context of current models on corporate entrepreneurship, and respective loci of driving forces.

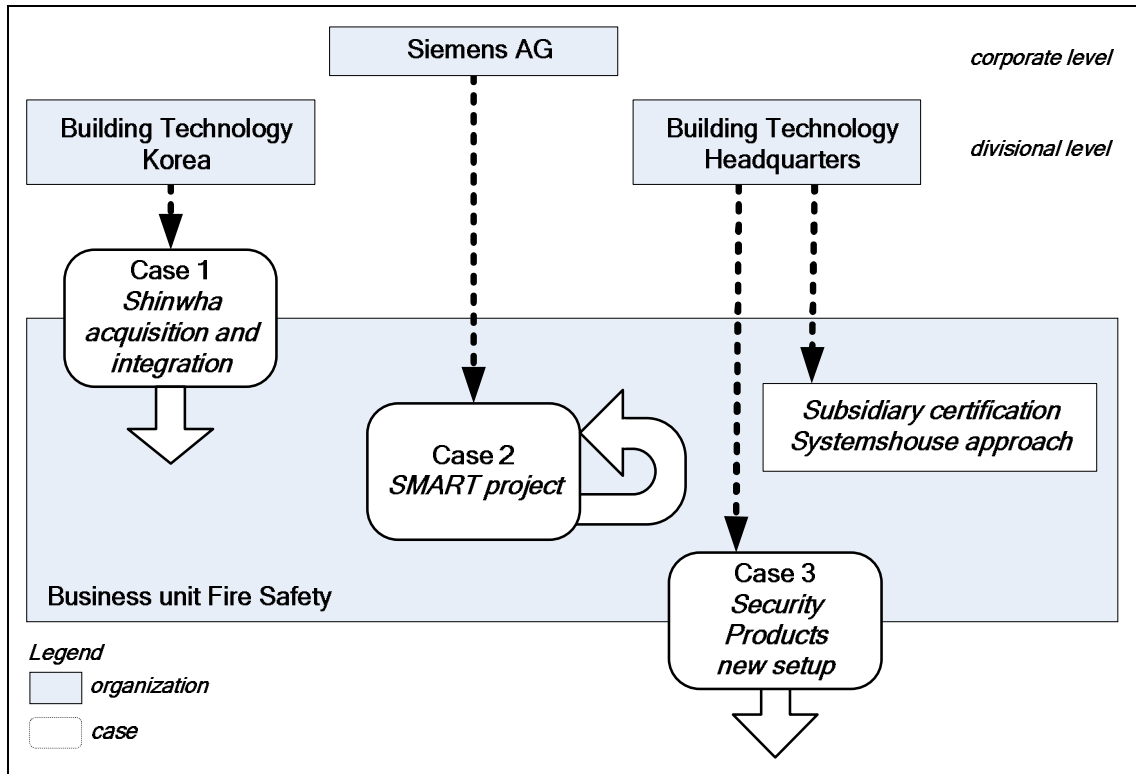


Figure 5-6 – Drivers for entrepreneurial activity from outside the business unit Fire Safety

5.9 Summary

The field research set out with a focus on organisations and processes, granted mandates and long term orientation. The selection of these factors for investigation was based on a conceptual framework set up beforehand, and led to a derived set of research sub-questions actively explored in interviews, observations and secondary data analysis.

As a key finding within organisations and processes, fairly mature opportunity exploitation processes were not found to be accompanied by similar definitions on the recognition side, thus also raising questions about how to manage ambidexterity and how to provide required slack

resources. A rather inward-oriented culture was reported, based on a business mainly driven by incremental technical innovations. Looking at granted mandates as the second research aspect, the pioneering endeavour of a global business responsibility given to a newly founded headquarters (the SMART project) was perceived as a unique best practice example towards fostering entrepreneurship. This was complemented by granted mandates in the rest of the organisation being fairly limited or even non-existent, and instead a perception of executives engaging in micro-management on an operational level. The branch certification process was seen as an interesting approach to grant more comprehensive business mandates based on proven profit delivery and process maturity. The research on long-term orientation revealed supporting as well as missing elements in the current company vision, mission and strategy towards entrepreneurial activity. Current periods of service of executives in a specific function of only two to three years, and related elements of people selection and career making were seen as critical. Throughout the researched prime aspects, current yearly achievement measurement and key performance indicators were seen as not fostering longer-term business venturing goals. Asking participants for relevant interactions among the three main factors, long-term orientation was seen as the “driving force” in an entrepreneurial context, whereas organisations and processes were perceived as iteratively interacting with granted mandates in an ongoing, co-evolutionary process.

Not surprisingly, a further set of aspects was revealed as relevant for fostering activities in entrepreneurial behaviour in local Siemens entities. Key elements of entrepreneurial orientation – especially risk and risk-aversion, and decisiveness – were significant within the researched context. Indeed a number of interviewees reported high levels of risk-aversion and low levels of decisiveness limiting entrepreneurial activity. Linked to this, current employee selection and gaps in the capabilities of employees were hotly commented on by respondents. Effects on entrepreneurial activity of culture, cultural difference and cultural diversity were especially evident in the context of a dominant German culture driven by the preponderance of German managers in key positions. Aspects of trust, achievement recognition, granted rewards and incentives for entrepreneurial endeavours finally built a last cluster of influential elements. The mutual influence or relatedness of these emergent factors as depicted in Figure 5-5, as well as their relationship with the focal factors of organisations and processes, granted mandates and long-term orientation, inform the subsequent discussion chapter and identification of appropriate activities to foster entrepreneurship within Siemens in the future.

6. Discussion

The previous chapter reported the findings from the field research. In this chapter, these findings are discussed with reference to their relevance for fostering entrepreneurship in multinationals and especially their local subsidiaries. A key focus of the discussion hinges on the comparison with findings from previous research in comparable contexts in firm practice. The applicability of existing theory is also considered for potential support or identifiable inconsistency with mechanisms and patterns found in this case research. As a further outcome of the discussion, recommended actions⁹⁴ towards fostering entrepreneurship in the chosen Siemens context are formulated. In crafting these recommendations, consideration is given to existing provisions (e.g. initiatives, processes, structures) that can be built upon to increase the probability of successful implementations.

The research findings have been reported along the three main foci as defined at the outset, and a set of other aspects found relevant subsequently. Organisation and processes was found to encompass many further elements, rather than just being a unitary element in itself. The discussion chapter here is aimed at consideration of specific elements and the derivation of corresponding potential activities to foster entrepreneurship in the researched context. Therefore, single and fundamental aspects are discussed first, and more complex constructs like organisation and processes are aggregated later. Hence, the discussion starts with the elements of entrepreneurial orientation (section 6.1), followed by aspects of the allowance, recognition and reward of entrepreneurial activity (section 6.2), and involved aspects of trust (section 6.3). The main research foci organisation and processes, granted mandates and long term orientation are then discussed in section 6.4 to 6.6. The considerations of interactions among factors (section 6.7) are followed by an overall summary of the discussion in section 6.8.

6.1 Elements of entrepreneurial orientation

High levels of perceived risk-aversion in Siemens entities were identified in many different contexts, such as the entrepreneurial process (section 5.2.2), granted mandates (sections 5.3.1 and 5.3.4), long term orientation (section 5.4.3), culture (section 5.6.3), aspects of achievement recognition and reward (section 5.6.5), and decisiveness (section 5.6.6; please see section 5.6.2 for the summary). The aspect of risk is a key dimension of the construct of entrepreneurial

⁹⁴ Recommended actions are labelled as RA-<n>, with n holding an unambiguous numeration for further referencing.

orientation (EO) – defining entrepreneurs as being innovative, risk-taking and proactive (Miller 1983:771). At Siemens, the setup and treatment of risk lists focussed on specific business endeavours, as well as organisation-wide risks out of established business, are part of existing routine. Siemens risk lists show a classical focus on the probability of occurrence and the significance of related losses (Yates and Stone 1992, Forlani and Mullins 2000). Quarterly reported and discussed current risks of running business on the level of business units are primarily treated from organisational and financial perspectives, e.g. the impact and action of product safety issues, liabilities from contracts etc. These risk perceptions are typically broadly discussed as part of defined processes. Unfortunately, the subsequent decision taking process – especially towards starting new business endeavours – is much less defined (please compare sections 5.2.1 and 5.2.2). Towards taking decisions, the risk propensity (Brockhaus 1980, Petrakis 2005) or attitude towards risk (Shane 2003) of involved managers to really go for new endeavours is arguably of key importance in the reported “zero risk” culture – a setting which has been reported before for mature businesses (Sykes and Block 1989:164).

Does this culture imply that Siemens is simply a non-entrepreneurial firm – and could there be remedies derived from such a diagnosis? Miller characterized the non-entrepreneurial firm as “one that innovates very little, is highly risk averse, and imitates the moves of competitors instead of leading the way” (1983:771). The cases, however, revealed many technical product innovations taking place, but rather little entrepreneurial spirit towards new business venturing activities. Applying Miller’s definition of the planning firm as focussed on the “smooth and efficient operation through the use of formal controls and plans” (1983:770) turns out to be a much better characterization of the researched entities. The case data obviously supports the existence of a strong firm-inward orientation (please see sections 5.2.1, 5.3.4 and 5.6.1), and a tendency to become monolithic and to concentrate on the exploitation of established business. Miller saw evidence that within such a context, entrepreneurship could primarily be fostered by establishing explicit, “ritualized”⁹⁵ and systematised innovation-oriented and entrepreneurial product-market strategies, thus minimising the disruptiveness of these activities by adding it to almost normal routine. The environment does not significantly stimulate entrepreneurship due to rather isolated operating cores, and Miller even saw the necessity of ignorance of environmental developments due to an insufficient flexibility to adjust to unpredictable external pressures. Furthermore, leaders’ locus of control is claimed as key, with top executives vastly determining

⁹⁵ i.e. to “ensure that entrepreneurship is focussed upon in addition to the routine internal operating matters” (Miller 1983:789)

entrepreneurship by respective directives. Comparing Miller’s findings with the researched cases, the SMART initiative – as driven directly by the Siemens board and being an explicit and institutionalized product-market strategy (focussed on M3 market, start in Asian countries and expand globally) – fits almost perfectly to the described approach. Surprisingly little resistance is perceived within the organisation to carrying out all required activities to set up the respective organisation, processes and product portfolios. By embedding all required activities in existing processes (yearly target setting, budgeting, reporting etc.) this significantly entrepreneurial endeavour becomes, for Siemens employees, “normal business”. So, based on the case findings as well as previous research, a first activity to foster entrepreneurship can be derived:

RA-1 ⁹⁶	<p>Establish</p> <p>(1) explicit, systematised innovative and entrepreneurial product-market strategies,</p> <p>(2) with top executives determining entrepreneurship by respective directives.</p>
--------------------	--

Since the extent to which newly recognized entrepreneurial opportunities are exploited also significantly depends on the attitude toward risk and uncertainty of key employees (Shane 2003:61, Acs and Audretsch(eds.) 2005:37), further activities on a personal level – and including aspects of dealing with uncertainty – must be discussed. Knight proposed the distinction between risk and uncertainty – “‘risk’ is ordinarily used in a loose way to refer to any sort of uncertainty viewed from the standpoint of an unfavourable contingency, and the term ‘uncertainty’ is similarly used with reference to the favourable outcome” (1921:233). Leveraging from uncertain constellations can even be interpreted as the “real” and only source of entrepreneurial profits (Brouwer 2000). However, the usage of a clear separation of risk and uncertainty – and even the use of the word “uncertainty” – could be identified in neither the interviews nor the secondary data. Nevertheless, uncertainties – usually linked with the environmental threats and the potential market gains – were found to be depicted by specific risk list entries and worst case business scenarios (down-side), and by best case scenarios of the proposed business plans (up-side).

The personal risk propensity of managers – influencing the perception of risks and the preparedness to take risks – may also be influenced by the historical outcome of respective endeavours (Sitkin and Weingart 1995), and has to be seen in conjunction with the aspects of uncertainty. Despite the missing usage of the term in practice, the aspects of uncertainty and

⁹⁶ All derived Recommended Actions are labelled as RA-<n>, with n holding an unambiguous numeration for further referencing.

uncertainty-avoidance shall be considered as relevant since it is one key dimension of human culture (Hofstede 1980), and has also been specifically studied in the entrepreneurial context. To foster local entrepreneurship at MNEs by specifically addressing effects of uncertainties in behaviour, communication and values in the context of the opportunity recognition processes, Mahnke et al. proposed (among others) the approach of building entrepreneurial “clans” throughout the MNE to reduce the perception of uncertainty (2007:1293). Interestingly, this concept of building clans of entrepreneurially experienced employees and domain experts (Ouchi 1979, Ouchi 1980, Casson 1982, Alvarez and Barney 2005) is reflected in the build-up of business domain specific working groups at Building Technologies level by Keiko Safaia [Chief Marketing Officer of Building Technologies] at the end of 2009 (please see section 5.2.2). Longer serving experts and intrapreneurs (some of them already worked for the previously independent companies now forming the Building Technologies entity⁹⁷) are meeting regularly to propel new business ventures. Clans depend on continuing communication and close relations among their members (Alvarez and Barney 2005).

Here again, the Siemens career model of changing positions within two to three years undermines the persistence of clans over time – an aspect which will be reflected on further in the section about long term orientation. On the positive side, tradition as one of the informal requirements in clan constructs (Ouchi 1980) was getting significantly higher attention in recent years at Building Technologies as well as in the overall company by top management. Fire Safety reintroduced, in 2008, the name “Cerberus” as the new brand name for all product channel offerings world-wide. Since the start of 2010, Siemens top executives regularly cite the founders of Siemens and their activities in internal communications (please see section 5.4), claiming an ongoing legacy of being business and, especially, innovation pioneers. So, preconditions can be seen as given to further and more explicitly foster such a “clan type” approach towards easing new opportunity recognition. Additionally, the clan membership can be linked to the new certification process defined for subsidiary entities and subsidiary experts (please compare section 5.3.4):

RA-2	Further foster the domain specific Building Technologies working groups, and expand the approach to the Building Technologies business units as part of the organisational design. Use certification levels granted to subsidiary entities and subsidiary experts to define “clan” membership in such working groups.
------	---

⁹⁷ Landis & Gyr AG, Cerberus AG; compare section 4.1.

Reported current risk-aversion has also been set in the context of a predominant German culture at Siemens, interacting with a still low diversity when looking at the ethnic roots of employees especially in key management positions (please see section 5.6.3). But the cultural dependence of risk propensity levels, acceptance of uncertainty and approval of risk (Hofstede 1980, Brockhaus 1980, Petrakis 2005, Petrakis 2007) has also – and maybe mainly – to be interpreted in the specific firm context. The large MNE in itself represents a certain culture; defined by Hofstede⁹⁸ as being entirely distinct from national cultures since “...organisational cultures are the collective programming of the mind that distinguishes the members of one organisation from another” (2001: 391). A currently widespread culture at Siemens seeing business risk expositions as something negative coincides with reported low levels of failure forgiveness, consequently leading to career-making primarily based on short term goal achievements by the exploitation of established business, and personal “zero failure tracks”. Even if there is little solid evidence, so far, that the maximisation of taking risks and bearing uncertainty towards new corporate venturing is especially entrepreneurial and beneficial, primary and secondary data clearly indicate significant room for change towards more ambitious venturing by taking risks and bearing uncertainties – based on thorough judgment beforehand, of course. On an individual level “[...] the only certain thing about behaviour leading to CE is the need on the part of the individual to accept risk and uncertainty” (Hayton 2005:37). Hayton’s review of empirical studies of HRM activities towards fostering CE in established firms leads to specific recommendations backed by the respective field results: human resource management (HRM) should encourage risk taking, and the acceptance of failures. However, the proposition to primarily achieve that by fostering “intra- and inter-organisational relationships” among employees seems of little relevance in the Siemens context. HR is currently a quite lean organisation, strongly focussed on the core HRM tasks (like employee recruitment, target setting mechanisms, training, benefits and compensation, leave management, covering legal aspects etc.) and so far is involved in neither business decision processes nor the set-up of focus groups, best practice sharing approaches, etc. More convincing is the proposal of Peris-Ortiz to apply “personnel selection and control” (2009: 475). HRM is always involved in the selection of new employees, and acts as the owner of the respective Siemens Leadership Framework (please see section 4.4). As outlined in section 4.4, the respective capabilities used for job reference

⁹⁸ Gerd Hofstede postulated five dimensions as being relevant for human culture when comparing them on the level of nations: (1) power distance, (2) uncertainty avoidance, (3) individualism and collectivism, (4) masculinity and femininity and (5) long- versus short-term orientation.

profile definitions relevant for candidates and employees do not contain any terms like “entrepreneurship”, “intrapreneurship”, “venturing” or “uncertainty”, and “risk” appears primarily in the context of controlling risk. To foster entrepreneurship, capabilities should be reworked towards explicit mentioning of new business venturing and a respective mapping of required capabilities. Furthermore, the massive demotivation of employees by the tried approach of predefining capabilities top down by hierarchy levels has to be completely reworked, allowing for a serious definition of adequate capabilities sought, and currently reached levels of individuals:

RA-3	(1) Rework the Siemens Leadership Model towards the explicit mentioning of new business venturing aspects, and (2) add respective capabilities and adapt the reference job profiles accordingly.
------	---

6.2 Allowance, recognition and reward of entrepreneurial activity

Established recognition and reward mechanisms and current KPI systems in researched Siemens entities used for achievement evaluation and thus paid incentives have been found as concentrating on short term goal achievements based on low risk taking (please see sections 5.2.2, 5.2.5, 5.3.4, 5.4.2, 5.5 and 5.6.5), and there are minimal levels of failure forgiveness for unsuccessful new business ventures reported (please see sections 5.2.5 5.6, 5.6.2 and 5.6.6). Interviewees explicitly asked for measurement systems and reward mechanisms adapted to foster entrepreneurship (please see section 5.6.5).

At the same time, the motivation of employees towards pursuing entrepreneurial goals is seen by many authors as being significantly affected by respective recognition, incentives and rewards, and forgiveness for failed entrepreneurial endeavours (Durand 1974, Durand and Shea 1974, Fry 1987, Brazeal 1993, Chandler, Keller and Lyon 2000, Hayton 2005, Menzel et al. 2007, Shane et al. 2003, Locke and Baum 2007). Since a discussion of the overall motivational aspects in the context of CE would deserve another thesis in itself (including intrinsic versus extrinsic motivation, all dimensions of entrepreneurial orientation on a personal level, self-efficacy and its sources, etc.), the considerations, here, shall be limited to the cited aspects reflecting the study findings which are possibly apt for fostering activities, and especially taking a perspective of perceivable levels of desirability of entrepreneurial activity for employees in the firm, and resulting job satisfaction (Kuratko et al. 2005a, Brazeal, Schenkel and Azriel 2008). “[...] [T]op management must encourage successful intrapreneurship by [...] rewarding

engineers for intrapreneurial action, irrespective of a possible failure under the slogan: Never a shot, always a miss” (Menzel et al. 2007). Forgiveness and even freedom to fail was cited early on (Hisrich and Peters 1986, Fry 1987) as a key ingredient of a successful entrepreneurial culture, and confirmed as relevant by more recent studies (Hornsby et al. 2002, Shepherd et al. 2009).

Findings in the case study here as well as in other research studies become more controversial when turning towards granted financial rewards – or incentives (like cash bonuses or accelerated promotions and thus higher salaries) – for new venturing activities. There are benefits in a corporate entrepreneur acting as an agent for his principal (Audretsch et al. 2009), “[...] having the agent own a portion of the firm's assets can provide incentives for maximising the firm's performance in a way that cannot be replicated via contract.” However, in a huge enterprise like Siemens, only insignificant stakes of the firm could be provided to all the potential corporate entrepreneurs, which hardly would create noticeable financial rewards out of the success of a specific entrepreneurial endeavour. Looking for implementations also feasible for lower management ranks, experts and “normal” employees, it comes down to established incentive constructs: the dependence of the payout of a certain amount of the planned total yearly compensation on achieving predefined goals. Based on his analysis of related empirical studies, Hayton (2005) argued for such “performance evaluations and incentives to promote risk taking behaviors” as required for fostering new corporate venture activities, but saw a significant dependence of the relevance of such activities on a high degree of technical innovation and environmental complexity, and rather early stages in business life-cycles (thus representing higher levels of risk and uncertainty). Measuring Siemens against these dimensions, environmental complexity and a high tech innovation environment can be seen as given, whereas many stages in life-cycles exist in parallel for all the different businesses involved. Since an incentive system already exists in Siemens for all employees⁹⁹, the challenge lies more in a dexterous definition of respective entrepreneurial goals and rewarding schemes, than the “technical” implementation of such a process.

Congruent to similar findings on aspects in processes and organisation relevant for entrepreneurial behaviour, today’s target definitions should be first of all analysed in terms of

⁹⁹ The stake of incentives or bonuses depends on the individual function level of the employee, starting with stakes below 10% of yearly compensation depending on overall performance of the respective business unit, up to major stakes of compensation fully dependent on individual target achievements and overall firm performance.

how they may hinder venturing activity. Siemens employee goal achievement levels are currently almost completely based on “metric” definitions, and typically consider only one business year term. But entrepreneurial target achievement determination has to be done with time horizons beyond one year, and based on a judgment of entrepreneurial activity instead of unsatisfying attempts to “measure” it by new KPIs¹⁰⁰. Here, the well-established mechanism of the yearly “round tables” (already held for all employees to review achievements and further potential by respective superiors) could be expanded by including evaluation of the entrepreneurial behaviour of a specific employee. Longer term targets could be “divided” down to yearly scopes by respective milestone definitions (Block and Ornati 1987, Sykes 1992). Content wise, the nine capability dimensions with detailed level descriptions – adapted accordingly as proposed in section 6.1 – may serve as the unified scale of judgment. By reusing all these already existing mechanisms, a too formalized “bureaucratic” and mechanistic structure stifling entrepreneurial creativity (Miller 1986, Miller 1996, Chandler et al. 2000, Morris et al. 2008) could be avoided:

RA-4	<p>Adapt the existing yearly incentive / bonus mechanism for employees by:</p> <ul style="list-style-type: none"> (1) changing and/or removing specific targets hindering entrepreneurial behaviour (2) adding specific targets fostering entrepreneurial behaviour, with target scopes extending beyond one business year by applying respective milestone definitions (3) round-tables explicitly judging the overall entrepreneurial behaviour based on the respective levels defined in the adapted capability profiles (compare RA-3)
------	---

However, non-financial rewards such as achievement recognition by praise and granting certificates are found equally important to support an entrepreneurial culture in previous studies (Block and Ornati 1987, Sykes 1992, Brazeal 1993, Hornsby et al. 1999, Chandler et al. 2000, Hayton 2005) as well as in the field research here: “recognition before reward!” (Michael Bosshard, please see section 5.6.5). Recognition signals the importance of entrepreneurial values to the organisation, creates legitimacy for such endeavours and the respective actors (Hayton 2005), and increases resulting job satisfaction (Kuratko et al. 2005a). Additionally, field research respondents asked for more supervisory support in their specific innovative and entrepreneurial endeavours, and the provision of a respective corporate vision (“communicate the dream”, please see section 5.6.5). Both aspects were found relevant by the cited studies as

¹⁰⁰ In fact, the mentioning of a potential introduction of entrepreneurial KPIs caused clear resistance in the interviews. Interviewees simply did not believe that an applicable “metric” KPI scheme could exist.

well. In the Siemens context, technical – and primarily incremental – innovations are seen as quite good, supported by the company vision, executives’ supporting behaviours, and current reward and recognition mechanisms (top+ awards, 3i) (please compare sections 4.3 and 5.6.5). But neither the new Siemens vision of “being pioneers” (please compare sections 4.5 and 4.6.1), nor the cited tools in place, are perceived as really supporting new business venturing. Within the business units and divisions, new venture ideas are usually discussed in very small top management circles only, and typically just when required by superior organisations to provide an updated business strategy. Therefore, the following fostering activities ensue from the analysis: (1) a more explicit mentioning of new business venturing in the corporate vision by expanding the value of pioneering respectively, (2) the expansion of the existing tools “top+ awards” and “3i” towards new business venturing endeavours, and (3) a stronger support of superiors by means of invested time (e.g. “open door policy”) and positive attitude towards new business ideas of employees, and their inclusion in management discussion of updated business strategy:

RA-5	<p>Foster entrepreneurial behaviour in the fields of recognition, rewards and support by</p> <p>(1) providing more explicit mentioning of new business venturing in the corporate vision by expanding the value of pioneering</p> <p>(2) the expansion of the existing tools “top+ awards” and “3i” towards new business venturing endeavours</p> <p>(3) stronger support by means of invested time (e.g. “open door policy” of executives), a more positive attitude towards new business ideas of employees, and employee inclusion in management discussion of updated business strategy</p>
------	---

The requested visionary thinking – and respective communication about it – is required from the “would-be” intrapreneurs as well: they also need to have an entrepreneurial vision and communication skills to promote it successfully in their local environment. Studies also support the need to focus upon innovative inputs (done at Siemens with the 3i program, please see section 4.3) rather than attempting to reward on the basis of outcomes (Balkin, Markman and Gomez-Mejia 2000). Extrinsic rewards may also “inhibit creativity by limiting the benefit of its intrinsic rewards” (Hayton 2005:37). But the requested further research “needed to better understand the relationship among job rewards, broadly defined, and entrepreneurial contributions” would open up the field for a whole further thesis and is beyond the scope of the research presented here.

6.3 Aspects of Trust

Lack of trust in employees in Siemens entities – as one consequence of the huge bribery scandal Siemens went through in recent years, but also as a significant element of a current culture of applying comprehensive processes and tight controls (please see sections 5.2.3, 5.2.5, 5.3.4, 5.6, 5.6.5; and section 5.6.4 as the summary) – has been identified as a significantly limiting factor to entrepreneurial behaviour of employees. Trust as the "psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another" seems to be a complex phenomenon or concept (Rousseau et al. 1998: 393-395). It has been researched among individuals, groups, and many types of organisations; and can be interpreted as a cause, an effect, or a moderator of action. In the Siemens context, rules and regulations are reported as increasingly replacing trust, based on respective shared values. But relational trust has been found “a powerful ingredient for fostering activities needed for successful new business creation” in established companies, especially apt to overcome problems associated with social complexity, causal ambiguity, problems of informational asymmetry, and political tensions that may arise during new business creation (Zahra et al. 2006: 555). While the existence of regulations – especially in the area of business compliance (with some limitations in their perceived applicability in certain target countries, please see section 5.6.4) – is rather undisputed, the comprehensiveness of such regimes is increasingly questioned, even by top management. By the end of 2010, more than 600 guidelines for all the different aspects of the business processes could be found on the level of the Building Technologies division – in itself a world of complexity which resists a full implementation in practice by its sheer amount of definitions. Unfortunately, first steps of introducing leaner processes again at Building Technologies (focussed on PLM and started in January 2010) have been negatively impacted by the emergence of a severe product safety issue¹⁰¹, caused by non-observance of mandatory process steps, and in its negative outcome supporting, again, the calls for comprehensive and strict regulation. Evidently, to root tasks of operational excellence in trust instead of precise process definitions and subsequent controlling seems inadvisable, and would represent a mix-up of the concept with calculated information exchanges based on a deliberate risk-analysis and risk management (Welter and Smallbone 2006). Obviously, the

¹⁰¹ FS wireless detector gateways were changed without carrying out mandatory system tests and notifying certification authorities. By October 2010, the certification authority discovered the change – and conditions under which no fire alarms were transmitted any more. Removal of certification was officially announced, creating significant reputation damage for FS, and still ongoing – and very costly – product replacement efforts.

primary focus here has to be on potentially positive effects of granted trust in the context of new business venturing. Besides building trust by clan structures (please see section 6.1) and longer stays in specific functions (please compare section 5.6, and Perrone et al. 2003), the certification process of subsidiaries and experts (please see section 5.3.4) can be seen as a good means of creating trust in people and organisations in a well-defined and replicable approach. Trust based on previous education, examination and recurring achievement of objectives represents a very “Siemens like” process approach, thus no significant hurdles to implementation may be expected:

RA-6	<p>(1) Foster entrepreneurial behaviour by building trust based on the certification process of subsidiaries and respective employees.</p> <p>(2) Further expand the granted levels of responsibilities and freedom to decide on investments in new business ventures bound to achieved certification levels.</p>
------	---

Considering a comprehensive change from the business based today on detailed rules, regulations and controlling to a primarily “trust based firm culture” in future, several significant obstacles hindering such change exist. In the aftermath of the financial crisis, the trend towards stronger regulations and legislation is accelerating, with Siemens AG being listed in the US as well as in Europe – and even operating its own bank facility since December 2010 – and required to follow all the related standards¹⁰². On the level of the Building Technologies industry, the amount of standardization of processes – asking for detailed definitions, permanent controlling and recurring audits – is increasing rather than decreasing. Even if granting trust for new business venture endeavours is not directly linked to these regulations, the overall climate is hardly supporting such a value change. To ask for the definition of “trust” as a (new) Siemens core value could therefore not to be expected to help much towards the intended goal, and would even bear the risk that people get more cynical about firm values not reflecting perceived reality.

In the interviews, employee cynicism towards organisation or management (please compare section 2.1.17) was only directly addressed in the context of the top talent program and respective employee promotions (please compare section 4.4): “People are quite cynical about people development, and therefore entrepreneurship” [John Davis, CEO of Security Products (SP) new setup, 1.10.2010]. It is perceived as a key requisite to belong to a “rope team” to be

¹⁰² Accounting is done according to IFRS standard as well as US-GAAP / SOX etc.

promoted to the top talent program, and further career steps are not seen as primarily based on delivered business performance. However, employees take these mechanisms somewhat for granted and as a commonly known “unwritten law”, thus leaving it to the employee to either accept it, or to leave the company.

Since the Building Technologies division as a whole has been stable in size and organisational structure in recent years, no specific cynicism created by change could be identified (Buchanan et al. 1999, Cutler 2000, Wanous et al. 2000, Bommer et al. 2005, Watt and Piotrowski 2008). However, the lay-offs caused by restructuring Shinwha manufacturing, and the SP new setup, led to negative perceptions in two ways. In case of the SP new setup, the survival of the former top managers in this entity (all getting new jobs within Building Technologies, whilst significant cuts were made throughout the “ordinary” workforce) – sparked many cynical comments from employees about managers having safe jobs even when failing, whereas normal workers lose even in cases of performing as requested. For Shinwha employees, the lay-offs were perceived as contract breaches (Andersson 1996, Johnson and O’Leary-Kelly 2003), since Siemens management declared at deal closing that no lay-offs would take place. Perceived violation of a contract obviously undermines trust in the management. However, this behaviour has to be judged as somewhat person dependent, since no similar events on a broader scale could be identified throughout the Building Technologies organisation.

6.4 Organisation and processes

“Organisation and processes” will be used here also as a perspective on relevant functional and structural elements of the firm, containing aspects not yet covered by elements discussed in previous sections. As a core element, the tension between opportunity recognition and exploitation, and the related requirement for ambidexterity management (Leonard-Barton 1992, Birkinshaw and Gibson 2004, Gilbert 2006, Burgers and Jansen 2008, Cao et al. 2009, Jansen et al. 2009, Raisch et al. 2009) – also known as “the productivity dilemma” (Abernathy 1978, Benner and Tushman 2003) – shall be considered first.

In the context of this ambidextrous constellation, the reconsideration of the reported findings led to the identification of a quite distinctive structure of “two clusters” of thinking and activity: a prevailing “inward” orientation focussed on internal structures and policies versus a required “outward” orientation looking for new markets, new products and respective venturing (please see sections 5.2.1, 5.2.2, 5.3.4, 5.6 and 5.6.1; and Table 6-1 for the summary hereafter). A first element of this dominant inward orientation was the identified focus on the exploitation of

established businesses, primarily limited to incremental product innovation, and driven by well-structured and comprehensive Product Lifecycle Management and Supply Chain Management processes (please see section 5.2). Thereby, the applied processes are explicitly aimed at achieving a maximum of independence in how the tasks are carried out from the personal capabilities, orientations and ambitions of employees, and tight control.

	<i>Cluster of aspects of a “company inward” focus</i>	<i>Cluster of aspects of an “outward” focus</i>
Predominant step of the entrepreneurial process	Exploitation of established business	Exploration and evaluation of new business
Innovation aspect	Incremental innovation only (existing products, existing markets)	Disruptive innovation (new products, new markets)
Process maturity	Comprehensive processes definitions in Product Lifecycle Management (PLM) and Supply Chain Management (SCM)	Undefined Management Process, weakly defined Customer Relationship Management (CRM) process
Dependence of how activities are carried out on personal capabilities, orientations, and ambitions of involved employees	Low personal dependence <ul style="list-style-type: none"> • employees in R&D, manufacturing • product managers 	High personal dependence <ul style="list-style-type: none"> • sales / key customer relations • entrepreneurs / top management

Table 6-1 – Two clusters: “inward” and “outward” aspects

Such an inward orientation was previously reported by comparable studies for large and rather bureaucratic organisations (Miller 1986, Miller 1996, Sathe 2003, Christensen 2005), seen as driven by business managers primarily adhering to internal policies, structure, and plans (Reynierse 1997, Zahra et al. 2004, Chell 2008, Brettel et al. 2009). Furthermore, such systems of tight control have even been found to obliterate the – in reality - missing control on relevant processes, and the non-achievement of longer term firm targets (Pinchot 2000:125).

In contrast, an “outward” focus would comprise the exploration and evaluation of new business primarily based on disruptive innovation aiming at new markets, thus seeing the entire firm organisation from a market perspective (Drucker 1954). It would rely on rather lean process definitions, and accept significant dependence on personal orientations, ambitions and capabilities of employees. Here, a Management Process comprising a definition for business field analysis or business plan derivation simply does not exist in Siemens entities, and only outlines are defined for the Customer Relationship Management process.

So, there is evidence from the case study findings that the maturity of the “inward” activities in researched Siemens entities is much higher than on the “outward” aspects, and delivered exploitation results are seen as key elements for achieved performance, its measurement and subsequently granted rewards and compensation. Congruent to the finding of a prevailing inward orientation, a majority of interview partners rated the level of entrepreneurial activities currently taking place at Building Technologies division and Fire Safety business unit as insufficient (please see sections 5.1, 5.2.2 and 6.1), with people being biased towards working alongside well defined processes.

In this context, the subsequent sections will focus in more detail on (1) respective aspects of process definition and required organisational slack allowing for exploration and exploitation of entrepreneurial opportunities at the same time, (2) management support for, and empowerment of, employees exploring entrepreneurial ideas and subsequent endeavours, and (3) the consequences towards required capabilities of employees to do so, and respective employee selection, training and promotion. Finally, aspects of organisational complexity, which emerged as relevant out of the case studies, will be discussed.

6.4.1 Entrepreneurial process, ambidexterity management and slack resources

The recognition (or creation) of entrepreneurial opportunities, and the subsequent exploitation, represent core elements of entrepreneurship (Casson 1982, Venkataraman 1997, Hills et al. 1997, Alvarez and Barney 2007, Zahra 2008) and also establish a respective entrepreneurial process (please compare with section 2.1.14 for a respective process model derived from literature). Currently, opportunity recognition in the sense of identifying new businesses – or new business approaches in existing businesses – is not represented by any defined process activity at Siemens Building Technologies division (please see sections 5.2 and 5.2.1). Only innovation teams concerned with technical innovation based on research exist as defined organisational structures.

Not surprisingly, all respondents complained about current firm renewal activities primarily being limited to technical innovations only (please see section 5.1). Taking an organisational perspective, further activities in “structural arrangements” like “venture groups, task forces, strategic business units, freedom to engage in projects of one’s own undertaking, and unofficial projects (e.g., bootlegging, skunkworks)” could be taken to strengthen entrepreneurial activity (Brazeal 1993). However, Siemens is running all its activities as part of the comprehensive Reference Process House framework (please see section 5.2); process definitions and

implementations are significantly more stable over time than organisational structures¹⁰³, and the organisational setup is driven by requirements resulting from the process definitions rather than vice versa. Therefore it seems more promising to investigate fostering actions towards business opportunity recognition and exploration from a process perspective. Additionally, the “generic” entrepreneurial process of recognition, evaluation and exploitation (please see section 2.1.14 and Figure 2-3) seems to be a concept widely accepted and used in research and practice, whereas on a level of organisational structures a “hodgepodge” of approaches exist (Brazeal 1993). A majority of interviewees agreed on the applicability of the generic process of entrepreneurial activity described earlier, but still advocated entrepreneurship as somehow based on “personal habits” or “attributes”, and expected serious difficulties of mapping detailed entrepreneurship-oriented activities into defined process steps. However, the field research revealed that no attempts to define such process elements have been made so far at Building Technologies, and the whole management process part in Siemens Reference Process House was found to be still undefined.

Interestingly, Building Technologies management decided, in 2010, to have an expansion towards the “front end” definitions of the existing Product Lifecycle Management (PLM) process by the end of 2011, covering aspects of potential new action fields for the business, respective business planning and proposed product portfolio activities (representing the “Plan” and “Product Portfolio Planning” activities of PLM, please see Figure 4-2 in section 4.2). The respective action fields – as the starting point for such analysis on a PLM level – are mainly defined in the yearly business strategy paper updates, and derived from various sources like trend monitoring, subsequent scenario techniques, or the review of developments in adjacent businesses within Siemens. Rather accidentally, specific business field analysis including the composition of various forms of business plans is then carried out, driven by such action field definitions or even by quite spontaneous decisions in board meetings. Thereby, analysis carried out, planning and delivered results are not standardized in either procedure or final deliveries, since neither a respective process nor reporting templates are yet defined.

Based on these findings from the field research, the expansion of the Product Lifecycle Management process definition asking for an interface to a defined Management Process, and my membership in the Fire Safety Business Excellence team (responsible for the business unit

¹⁰³ As an example, the PEP process definition as the most comprehensive definition has been set up at BT in 2004; the organizations with BT have changed twice since then.

strategy as well as being the new owner of the respective Management Process definition in the Reference Process House since the start of 2011), it was decided to set up a working group to define the strategic aspects in the Management Process linked to the Product Lifecycle Management activities. Planned key deliveries by the end of 2011 are a defined approach on how to analyse and subsequently report about the opportunities for Siemens in a new business field, and to propose respective business plans for potential implementation. This represents, also, a necessary prerequisite to formally request new business proposals from subsidiaries, an activity already proposed to foster entrepreneurial activity in subsidiaries based on earlier research (Birkinshaw and Hood 2001). Additionally, the required process steps leading to the identification of such new action fields have to be defined to achieve a maximised comprehensiveness in business opportunity recognition:

RA-7	<p>(1) Define required process steps in the Management Process leading to a maximised comprehensiveness of business opportunity recognition.</p> <p>(2) Define process activities and standardized result formats for the investigation and reporting about these potential new business fields, and derived business plans.</p>
------	--

The benefit of working along a defined entrepreneurial process, defining clear roles, is that tasks of opportunity recognition have to be assigned to identifiable people since it “is necessary to eliminate organisational structures that obscure personal responsibility and homogenize individual actions” (Menzel et al. 2007:740). Furthermore, to support innovation and firm renewal and to absorb respective potential failures, organisational slack is required (Rosner 1968, Bourgeois III 1981, Sharfman et al. 1988, Nohria and Gulati 1995, Tan and Peng 2003, Herold et al. 2006), representing “the pool of resources in an organisation that is in excess of the minimum necessary to produce a given level of organisational output” (Nohria and Gulati 1996:1246). By assigning defined roles to people, such resource spending will explicitly be stipulated. As part of these “budgeted” slack resources, business developers, product portfolio managers, or the members of the technical innovation team (please see above) are to think about new businesses as defined by their job descriptions. The existence of further organisational slack is hard to identify since a classical approach of allowing all employees to apply a certain ratio of working time for thinking about potential new businesses – like 15% at 3M, or 20% at Wella (Menzel et al. 2007) – does not exist in Siemens. There is also no granted “patient money” (Pinchot 1985) at the potential intrapreneurs’ disposal to support their endeavours. Since Siemens is, today, primarily focussed on technical innovations, the management measures its investments into “innovation” by the ratio of the R&D spending to the total turnover, and the

number of filed (mainly technical) patents per year¹⁰⁴. There are significant amounts invested in these fields already, therefore it seems unrealistic to introduce a general ratio of slack resources for all employees of the firm due to significant additional cost. Overall, the case findings do not indicate a general shortage in resources as a main obstacle to entrepreneurial behaviour. Furthermore, previous studies found evidence that too much slack resource ultimately reduces firm performance (please see section 2.1.14). Nevertheless, as proposed by case study respondents, free time to think about new opportunities could be granted specifically on function and length of service of employees (implying the amount of domain knowledge already gained) by adding such topics to concrete job descriptions and yearly targets. Secondly, sabbatical days¹⁰⁵ could be used for entrepreneurial activities within the firm or related training. Such a defined and structured approach of providing resources is also seen in the strongly process-oriented culture of Siemens, currently paying much attention to all undertakings being compliant to guidelines and rules, thus allowing the would-be intrapreneurs little freedom when walking the “fine line between clever resourcefulness and outright rule breaking” (Kuratko and Goldsby 2004:13).

RA-8	<p>(1) Define slack time for the development of entrepreneurial ideas and respective business proposals – specifically by function and length of service of employees – by additions in job profiles and yearly targets.</p> <p>(2) Allow the usage of sabbatical days for entrepreneurial activities within the firm, or training.</p>
------	---

6.4.2 Management support

The case study findings revealed the importance of managerial support for entrepreneurial endeavours in primary and secondary data. The SMART project was perceived in interviewee responses, achieved development and results as a positive example of explicit top management support, whereas Siemens entities in general seem to lack such backing (please see sections 5.2.2, 5.2.5, 5.3.4 and 5.6.6). The relevance of such support for fostering entrepreneurial

¹⁰⁴ Siemens spent in business year 2009 EUR 3.9 billion (5.1% of turnover) for R&D, and hold 56’000 active patents (rank #2 in Europe, and #12 in US). Source:

http://www.siemens.com/innovation/pool/en/2010/innovation_at_siemens_10_08_2010_e.pdf, last accessed 2010-12-29.

Another significant investment in business renewal can be seen in the amounts invested in respective mergers and acquisitions.

¹⁰⁵ Siemens grants three sabbatical days per year for middle to upper management (“Funktionsstufen” (functional levels) 1-5) to be used for training purposes related to the respective current job.

behaviour has been confirmed by several previous studies (Fry 1987, Kuratko et al. 1990, Antoncic and Hisrich 2001, Menzel et al. 2007), and is seen by some authors as one of the “main five activities”¹⁰⁶ from a HRM perspective (Hornsby et al. 1999, Kuratko et al. 2005a, Kuratko et al. 2005b, Hayton 2005, Marvel et al. 2007). Coaching seems the most important ingredient to be granted: “[...] both would-be and active intrapreneurs need advocates. These are key stakeholders – not necessarily direct superiors – who support intrapreneurs with their broad experience in conducting projects, corporate politics, and professional knowledge. Their main task should thus be coaching the intrapreneur” (Menzel et al. 2007:741). “Managing” the entrepreneurial aspirations of subordinates in the sense of controlling has not been confirmed as a useful concept in the well researched 3M intrapreneurship example: “Be sure management sponsors the concept. [...] Give intrapreneurs freedom: a lot of rope. Sponsor, do not manage their program“ (Fry 1987:9). In the Siemens context, respective coaching (or mentoring) of employees only exists for top talents (please see sections 4.4, 5.4, 5.6.1, 5.6.2, 5.7 and 6.1). Since the top talent program has high visibility and a signalling effect to all employees, the inclusion of coaching for entrepreneurial ideas and subsequent endeavours could be a significant cornerstone for establishing such a culture:

RA-9	Include coaching/mentoring for entrepreneurial ideas and subsequent endeavours of top talents in the role definitions of superiors.
------	---

Additionally, an effect of coaching – or at least periodically discussing – entrepreneurial ideas of employees and respective behaviour will emerge through the proposed expansion of the Siemens capability model (please compare RA-3 and RA-4), leading to reviews every year by the Human Resource process.

A closely linked aspect – seen as relevant by six respondents in the case studies, but perceived as far from being satisfactorily done today – is a strengthened empowerment of entrepreneurially minded employees through more responsibility, taking ownership and being accountable for actions and outcomes. “What empowerment really means is stopping the disempowering of people. But that just brings us back to hierarchy, because hierarchy is precisely what empowerment reinforces” (Mintzberg 1996:7). To avoid this effect, Mintzberg proposed to see – and run – the firm like a beehive: the queen (the top manager) should just

¹⁰⁶ Cited in (Marvel 2007:753) as: “rewards, management support, resources including time, organizational structures (at the macro level), and risk acceptance.”

“exude a chemical substance that holds the system together” (...providing primarily the spirit or vision of the firm), while “worker bees are adults, so to speak, who know exactly what they have to do.” In a Siemens context, this would require a dramatic step-back from today’s tight controls focussed on how things are done, supporting more decisiveness in setting goals, clearer priorities and thus focus, and significantly enlarged competences of those responsible for achieving these goals (please see case findings described in sections 5.2.2, 5.3.4 and 5.6.6). However, such a change would require significantly higher levels of trust for employees (please compare section 6.3 and RA-6), a development which will only take place over a long period of time. Nevertheless, people empowerment based on clear decisions on goals and respective appointments of goal owners – in fact, a strengthened application of the well-known concept of management by objectives – should be considered as a potential activity to foster entrepreneurship behaviour:

RA-10	Foster entrepreneurial behaviour of employees by (1) superiors providing more focus based on clearer business priorities, (2) more decisiveness towards concrete goals, and (3) extended delegation of comprehensive competences to appointed goal owners.
-------	---

6.4.3 Capabilities and employee selection

Obviously, being an entrepreneurial company requires certain capabilities of employees. “Intrapreneurship cannot be created from a vacuum. Individual talent and potential are highly relevant resources of the company” (Menzel et al. 2007). The case study findings indicate that Siemens Building Technologies is far from having a primary focus on entrepreneurially minded people being selected for open positions and privileged in career development paths thereafter (please see sections 4.4, 5.2.2 and 5.6.1). Additionally, the Siemens career model of top talents diminishes business domain knowledge by requiring work domain changes every two to three years, whereas key managers and experts within Shinwha and iMetrex stayed for ten years and longer (please see sections 4.4, 5.4.2, 5.6, 5.7, 6.1 and 6.4.1). However, there could be two interpretations towards possible effects of this: the impossibility of seeing new business opportunities, caused by the lack of the respective business domain knowledge (as the required background for identifying such “new combinations” is missing), or the benefit of not having a “professional deformation”, causing certain blindness for new opportunities due to having seen no other business domains. Interestingly, interviewees have seen a benefit of exchanging managers primarily on the CxO level after three to five years, whereas at the level of middle

management and experts longer stays are clearly seen as a required prerequisite for successfully identifying entrepreneurial opportunities. Whether focussing on one domain or a combination of various domains, cognition capabilities are certainly required to obtain and combine such information (Mitchell et al. 2007). This opens up the field of required capabilities in general (Teece, Pisano and Shuen 1997, Teece 2007), respective learning (Lumpkin, Benyamin Bergmann and Lichtenstein 2005) and created knowledge (Zahra, Nielsen and Bogner 1999b, Li, Huang and Tsai 2009); again a field of research which would deserve its own thesis. Nevertheless, the considerations here are based on the findings from the case studies and derived fostering activities potentially apt to be embedded into existing mechanisms and procedures, or already started initiatives.

As a first aspect, the selection of new employees is done on the basis of job descriptions referring to more generic job profiles which are built from required capabilities as defined along the dimensions given in the Siemens Leadership Framework (please compare sections 4.4 and 6.1). By adding entrepreneurial capabilities to these definitions as proposed in RA-3 and RA-4, such selection criteria will be applied to job descriptions – and thus employee selection – without introducing new procedures. Second, the changes in the top talent selection process – the deployment of independent experts to avoid “rope team” effects, and putting more emphasis on promoting candidates from sales and product management instead of R&D (please see sections 4.4, 5.4 and 5.6.1) – should provide the basis for respective change. This leaves the aspects of entrepreneurial learning and knowledge sharing for potential new fostering activities. Siemens already enjoys highly developed internal education structures, offering a vast set of training opportunities by leveraging from internal and external teachers. However, the aspect of entrepreneurship is only addressed as a short session of the current two day branch manager training. Further sessions broaching entrepreneurial thinking could be added to existing training for project managers, product management, sales forces etc. Based on the developed process elements of opportunity recognition by business field analysis and derived business plans (please compare section 6.4.1 and RA-7), specific training fully focussed on entrepreneurial behaviour and action could follow:

RA-11	<p>(1) Foster entrepreneurial behaviour by adding sessions broaching entrepreneurial thinking to existing training for project managers, product management, sales forces etc.</p> <p>(2) Introduce a specific training course focussed on entrepreneurial behaviour and action based on the developed process elements of opportunity recognition by</p>
-------	---

	business field analysis and derived business plans in middle term.
--	--

6.4.4 Organisational complexity

The complexity of rules and regulations in Siemens entities is seen by middle management as hindering new entrepreneurial business endeavours (please see section 5.2.3). Currently shared product platforms and architectures were judged as making it difficult or time consuming to change direction in business units (please see section 5.6.2). The new SMART headquarters organisation is expected to add yet another dimension of complexity to the organisation (5.2.4), while the SP new setup approach explicitly aims at a reduced complexity to gain competitiveness (please see sections 5.2.1). Interviewees acknowledged the given enormity of the Siemens organisation and the pressure on Siemens top management to introduce tight compliance controls in the aftermath of the big bribery scandal some years ago (please see sections 4.8.2 and 4.12.4) as inherent drivers for the resulting complexity. Previous studies confirmed the critical role of firm structures of conglomerates (like Siemens) and its divisional entities behaving as “machine bureaucracies”, viewing this as inhibiting corporate entrepreneurship with respect to new business creation (Miller 1986, Miller 1996, Sathe 2003, summarized by Christensen 2005). As a consequence, “bureaucratic barriers to innovation have to be countered” to become a successful corporate entrepreneur (Kuratko et al. 1990). Installed systems of control are viewed rather critically for their effects on entrepreneurship, claiming that highly sophisticated control systems are not really providing control in reality, and put too much emphasis on how tasks are carried out rather than selecting the right tasks (Pinchot 2000).

However, just calling for remedies like “structural freedom” or “flexible policies and procedures” (Kuratko et al. 1990) is rather vague. For a huge MNE like Siemens, persistently following a strategy of integrated solutions offered worldwide and under one brand¹⁰⁷, organisational complexity cannot be reduced to levels possible for conglomerates primarily acting as equity holdings. Siemens traditionally had a very centralised “Stammhaus”¹⁰⁸ model, consisting of global head offices for all divisions and sectors concentrated in Germany (with the exception of the Building Technologies division headquarters residing in Switzerland, please see sections 4.1, 4.2 and 5.2). The process of breaking up this centralisation with the newly set

¹⁰⁷ The only exception to the Siemens one-brand strategy is given by Osram Ltd., fully owned by Siemens AG but still applying the previous Osram brand.

¹⁰⁸ German; i.e. head office

up SMART headquarters in the Far East has just started, and is complemented by the 20 new cluster offices worldwide to provide more local business focus and increased efficiency in shared services. Especially the SMART initiative stands for the allowance and strengthening of new venture organisations with significant levels of freedom from the established organisation. The Building Technologies subsidiary certification process and the set up of specific working groups at divisional level partly address the request for better collaboration of headquarters and regional companies regarding entrepreneurial ideas and endeavours, and improved levels of communication including best practice sharing (please see section 5.2.5). Another key lever to reducing complexity can be seen in further reduction of centralised structures, and the strengthening of more autonomous entities¹⁰⁹ (typically subsidiaries in the Siemens context) – a development which is reflected by a similar trend in international business research indicating a changing focus from centralised to decentralised organisations in recent decades (Paterson and Brock 2002, Young and Tavares 2004).

As a first activity here, the existing SMART initiative, now focussed on the M3 markets only, could be expanded towards M2 and M1, thus removing the restriction for such endeavours in lower end markets. Second, the branch certification process now leading to more freedom regarding decisions on investments – today primarily seen as linked to the sales organisation level – should be explicitly expanded towards granted authority for starting new business venturing endeavours when reaching respective high maturity levels. And third, the New Collaboration Model as worked out by Siemens Corporate Finance in 2010 (please see section 5.2.4) to overcome today’s tremendous difficulties in international solution projects should be adapted to the Building Technologies organisation. The expected simplification and clarification of responsibilities and ownerships will then significantly and positively impact the willingness and ability of subsidiaries to go for such business opportunities – even beyond markets addressed today:

RA-12	<p>Foster entrepreneurial behaviour by further strengthening the autonomy of subsidiaries by</p> <ul style="list-style-type: none"> (1) expanding existing SMART initiative focus towards M2 and M1 markets (2) broadening the branch competencies towards new business venturing
-------	---

¹⁰⁹ However, subsidiaries may serve as worldwide headquarters for specific businesses, but not in the old sense of having all product portfolios and company functions of a whole Siemens sector centralised in one main location. Taking the power sector as an example, wind energy products and services may be done in Denmark or China, whereas smart power grids headquarters could be located in the US etc.

	endeavours when reaching appropriate maturity levels in the certification process (3) adapting and rolling out the New Collaboration Model in Building Technologies and its organisational entities
--	--

6.5 Granted mandates

The case studies revealed weakly defined and communicated business mandates in general for local Siemens entities (also referred to as “subsidiaries” or “branches”), seen as caused by the current culture of high risk aversion and low levels of decisiveness and competence delegation, resulting in unclear (or simply not taken) decisions and small amounts of granted local business autonomy (please compare section 5.3.4). Decisiveness has already been identified as an important element of entrepreneurship (Eisenhardt 1989c, Woolard 1995). Furthermore, research and practice in international business sees a growing relevance of quasi-autonomous local entities of MNEs, moving away in the last two decades from thinking primarily in centralised concepts with global headquarters taking almost all key decisions (Paterson and Brock 2002, page 140). To specifically foster entrepreneurship in such local entities of MNEs, Mahnke et al. found relevance for the importance of co-locating decision rights (2007:1293).

Interestingly, the SMART initiative takes up this approach quite neatly, with the Siemens top management simply enforcing such an empowerment of local entities to seek global new business by themselves, even against the opposition – or at least lacking support – of the CEOs of respective business units, divisions or country organisations. The SMART initiative approach almost ideally resembles the concept of granting world-mandates to subsidiaries (Birkinshaw 1995, Bartlett and Ghoshal 2002, Birkinshaw et al. 2005). However, the role of a subsidiary evolving over time, is further influenced by the strategy of the respective business units and division, the relationships and rivalries between such subsidiaries, and the accessibility to resources and markets (Birkinshaw and Hood 1998, Birkinshaw and Hood 2000). Therefore, relevant mechanisms on the level of business units and divisions like sales rights and collaboration rules in international projects (please see 5.2.4) have to be set up in mutual understanding throughout affected business units and divisions; a simple command from Siemens top management will not be sufficient in the end. Furthermore, the role of a subsidiary in the international context can be different for each element of the value chain (please see section 5.3.1). Siemens Shinwha, for example, uses a mixture of local and global foci when looking at R&D, manufacturing and sales. So the concept of granted mandates has to be defined for each element of the value chain, having the SMART initiative primarily as an example of how to grant world mandates on the sales side.

The approach of Johannes Milde for turning Building Technologies into a “global systems house”, and having defined competencies and thus roles of branches based on achieved certification levels (please see section 5.3.4) could be seen as comprehensively applicable to all major value chain elements. From a headquarters perspective however, global alignments are still expected in the areas of R&D and manufacturing, since positive economy of scale effects of a minimised number of locations carrying out these tasks are to be expected. Additionally, the potential autonomy of subsidiaries in respect of re-using created cash for new entrepreneurial endeavours may be impeded by high targets in transferring created profits to the owners, and a yearly investment budget process still tightly controlled by headquarters. Today, decisions about how and where to use created cash for investments are predominantly taken outside the subsidiary. This missing autonomy negatively affects the EO of the subsidiary management due to the rather cumbersome process to gain such investment approvals (as identified in the pilot study).

The current situation of unclear subsidiary mandates could also be seen as an effect of headquarters’ management perceiving the necessity – but lacking the concrete definitions – for the transition towards a world of more decentralised responsibilities (Paterson and Brock 2002). To overcome this state of significant uncertainty in granted mandates, the combination, harmonization and further evolvement of the discussed two initiatives (SMART initiative, Building Technologies systems house) could be beneficial. Such a merger could leverage activities already started, and provide a reduced complexity in resultant definitions. Content wise, mandate definitions need to be considered, for all value chain elements and entities, regarding which subsidiary roles (world mandate, specialized contributor and local implementer; Birkinshaw and Morrison 1995) would serve the overall business interests best. Furthermore, permitting subsidiaries to operate as “business incubators” by granting respective comprehensive mandates, and asking actively for new business proposals from subsidiaries have already been proposed as relevant measures to foster local entrepreneurship in earlier research (Birkinshaw and Hood 2001). The mechanism to constantly evolve this landscape of responsibilities and to foster subsidiary initiatives towards new business venturing should be defined and put in place. Additionally, from new business venturing ideas down to proposals for adapted product portfolios, periodic mutual information exchange and decision taking beyond the currently established Building Technologies working groups (please see sections 5.2.2 and 6.1) should be established:

RA-13	<p>Foster entrepreneurial behaviour in subsidiaries by</p> <ul style="list-style-type: none"> (1) a further developed concept of Building Technologies as a globally distributed systems house, harmonized with the concepts and targets of the SMART initiative (2) derived and clearly communicated subsidiary mandates (3) defining and establishing a mechanism for constantly evolving the landscape of roles and responsibilities (4) periodic mutual information exchange and decision taking (from new business venturing ideas down to proposals for adapted product portfolios)
-------	---

6.6 Long term orientation

Arguably, the attribute “long term” most adequately applies to a firm’s vision, being a key element for the entrepreneurial strategy of a company (Morris et al. 2008, Kuratko and Audretsch 2009, Ireland et al. 2009). Unfortunately, only one respondent – representing Siemens headquarters in Munich – saw the current corporate vision as being clearly entrepreneurial, relevant and visible for employees (please see sections 5.1 and 5.4.1). This view was not shared by any other interviewee. Secondary data did not reveal significant or comprehensive links from the overall vision to the current vision and strategy statements on the levels of the Building Technologies division and its business units – which primarily depict the running business, and add little towards new fields of action. “Executives should adopt a long-term view of the effect of corporate entrepreneurship” (Zahra 1993b:334) – but unfortunately, the business unit strategies of Fire Safety and Security Products are perceived as primarily focussed on quarterly and yearly profit delivery (directly linked to the end of year bonus of managers), and contain only very careful growth initiatives that hardly address further business potential (please see sections 5.2.2 and 5.4.1) . At the same time, the definition and successful communication of a strong entrepreneurial vision is seen as being of key importance to motivate employees towards entrepreneurial endeavours (Guth and Ginsberg 1990, Covin and Miles 1999). Indeed, Siemens Shinwha staff – as the most recently integrated company part within Building Technologies – is currently “lost in translation” regarding an understandable company vision.

However, the newly formulated Siemens vision – built around the concept of being pioneers, and providing identity by focussing back to the famous company founders and their values and behaviour (please see section 7.2.1) – can be viewed as a very good basis to build on in the future. The current vision and strategy statements of subjacent organisational structures (Building Technologies division and its business units) require streamlining with the new vision

statement at top level. They should reflect the already planned strategic initiatives in strengthening business by giving more focus to specific markets (e.g. vertical markets marine, train or wind power business) and entering new markets (e.g. “intelligent response” applications). If strategy formulation is kept as simple as possible, “the managerial tasks will remain simple” (Doz and Prahalad 1984); a prerequisite for effective implementation and thus complexity limitation. This is especially important in the context of the MNE-subsidary relationship, and the resulting clarity of tasks, competencies and responsibilities for the subsidiary management. The approach of defining this by use-cases as done for the SMART headquarters (please see sections 5.3.1 and 5.3.4) can be seen as a best practice example:

RA-14	<p>Foster entrepreneurial behaviour company-wide by</p> <ul style="list-style-type: none"> (1) streamlining vision and strategy statements of the Building Technologies division and its business unit with the new Siemens vision as formulated in 2010, thus leveraging from the approach of “being pioneers” (2) adding already planned strategic initiatives in strengthening business by giving more focus on specific markets and entering markets new to the business unit strategy statements (3) keeping strategy definitions simple, and considering derived implementation of tasks, competencies and responsibilities definitions by use-cases
-------	---

When taking the definition of long-term orientation as “the tendency to prioritize the long-range implications and impact of decisions and actions that come to fruition after an extended time period” (Lumpkin et al. 2010), what are the activities at the level of top executives primarily taking such prioritization? Looking at periods of service of Siemens executives first, the case studies revealed significantly shorter stays for Siemens CEOs on business unit and subsidiary levels than for comparable functions in independent entities (as previously in Shinwha Electronics and iMetrex). Key drivers for moving on in executive functions every two to three years are the respective Siemens top talent career program and having significant amounts of – mainly German – managers in such positions world-wide being delegated for a maximum of three years typically (please see sections 4.4 and 5.4). However, “[i]n societies with risk averse and short term orientation, for instance, there is no reason to expect a huge number of long term and innovative entrepreneurial events to take place” (Petrakis 2007:289). A clear majority of interviewees see a significant limitation of entrepreneurial behaviour by these short stays, due to missing or uncertain “pay outs” for executives for such endeavours, in accord with an earlier research finding that “CE activities may take many years to fully pay off”(Zahra and Covin

1995:44). Respondents ask for periods of around five years as a reference; thus also allowing for a respective build-up of business domain knowledge, which in turn is expected to foster entrepreneurial behaviour. In the same context, the current practice of primarily appointing internal top talents for such key positions is challenged by a view that the hiring of externals from the industry would create higher value for the firm by bringing in additional domain expertise. In a similar vein, today's extensive expatriation of German managers to executive jobs world-wide is challenged by a perceived need for more appointments of candidates from the respective geographical regions, thus bringing in a better "cultural fit" with the respective entity, and also encouraging longer stays in these positions.

Further, the measurement of the "filling level" of the innovation pipeline towards granted incentives is requested to increase the decisiveness of executives to canvass new business fields and not miss business opportunities. Related to this, a significant expansion of the judgment period for granted financial benefits to foster longer term activity is requested, reflecting a similar discussion on incentive programs of executives in the financial industry to remove inappropriate short-term mechanisms. As a summary, the following four activities are proposed:

RA-15	<p>Foster entrepreneurial behaviour company-wide by</p> <ul style="list-style-type: none"> (1) extending the average periods of service of executives from three to five years by adaptations of the top talent program and delegation rules (2) giving more weight to specific domain knowledge and strongly considering appointment of executives from competition within the same industry (3) reducing the expatriation of German managers to executive jobs world-wide by giving more weight to the appointment of candidates representing the local culture (4) extending the judgment periods for granted financial benefits to executives, and adding the criteria of a "filling level" of the innovation pipeline
-------	--

As a last aspect, significant entrepreneurial endeavours also require the provision of "patient money" for respective long term investments (Pinchot 1985, Fry 1987). On a subsidiary and business unit level, the reported high percentage of profit transfers to Building Technologies every year (please see section 5.4) is seen as significantly reducing the money available for potential investments into new business venturing. However, the discussed branch certification program should provide in future the possibility of local investments when reaching maturity levels (please see RA-12). Headquarters of Building Technologies and its business units already invest around five percent of turnover in long term innovation and business renewal projects

lasting up to twelve years (new fire systems development, or danger management stations), thereby already providing the “patient money”.

6.7 Relevance of identified factor interactions and factor patterns

The overall aim of this study is to identify specific activities for fostering entrepreneurship in practice in large multinationals, and especially its local entities. Not surprisingly, the findings reported and the discussion identify a whole set of elements as potentially relevant. Interactions will be discussed in two sections, first considering interactions within the researched business unit and its subsidiaries and, second, from the broader perspective involving all organisational levels of Siemens AG.

6.7.1 Interactions within one organisational level

Interactions among the three key aspects of organisations and processes, granted mandates and long term orientation were actively sought and reported (please see section 5.5 and Figure 5-4). Subsequently, interactions among other factors emerging in the field research were reported in section 5.7 and Figure 5-5. These interactions will be discussed with reference to their relevance in fostering activities for entrepreneurship and in the context of existing models on CE drawn from the extant literature. Subsequently, the potential relevance of factor patterns in the sense of specific factor configurations, representing a certain status of a firm regarding entrepreneurial activity, shall be considered.

When interpreting long term orientation as an integral part of an entrepreneurial vision and strategy (Zahra and Covin 1995:44, Hitt et al. 1999, Ling et al. 2008:569, Morris et al. 2009), the driving function towards organisations, processes and granted mandates evident in this study is confirmed by proposed models of entrepreneurship, their elements and element interactions (Guth and Ginsberg 1990, Kuratko et al. 2004). Covin and Slevin (1991) did not assert any direct interaction between an entrepreneurial strategy – and thus long term orientation – and structural arrangements within the firm, but related all identified influencing elements to an overall “entrepreneurial posture” thus creating an indirect interaction among them. It could be argued that the relevance of long term orientation – and thus its driving function – is somehow limited in fast paced market environments (Eisenhardt 1989c, Woolard 1995). Since the researched firm environment, here, stands for investment goods with product life cycles of up to fifteen years, the finding of long term orientation as a significant driver of structural arrangements of the firm can be interpreted as relevant and backed by existing study results, at least in slower paced industries.

No research on explicit interactions between organisation and processes and granted mandates could be identified so far. Looking at granted subsidiary mandates (Birkinshaw and Morrison 1995, 2002), the definition of world-mandates certainly would imply related structural arrangements in organisation and processes. This is backed by the findings of the SMART project, where the definition of the world mandate led to such adaptations. However, such mandate definitions would have to be seen as part of the firm strategy; it would hardly simply “emerge” within the structural arrangements.

The three main aspects of the research can also be considered for potential interactions with the identified critical elements depicted in Figure 5-5 in section 5.7. Long term orientation would represent the opposite of the short term orientation (element e in Figure 5-5) and thus could be seen as represented already. Aspects of organisations and processes are represented by elements like process orientation (a), employee selection (i) or top talent concept (h), but include further aspects in more detail. Granted mandates were not aggregated in the model. Arguably, comprehensive and entrepreneurial mandates would comprise higher levels of autonomy, competences to decide, and longer term orientation. This would strengthen the entrepreneurial activity of employees by reduced short term orientation (e), more empowerment (g) and thus more entrepreneurial decisiveness (f).

Models of corporate entrepreneurship containing element interactions (e.g. Burgelman 1983b, Guth and Ginsberg 1990, Covin and Slevin 1991, Lumpkin and Dess 1996a, Birkinshaw and Hood 1998, Covin and Miles 1999, Paterson and Brock 2002, Kuratko et al. 2004, Narayanan et al. 2009) contain comparable aspects to the results here especially in the three specific clusters of firm visions, mission and strategy, structures of organisation and processes, and the manifold people-related aspects (as derived in section 2.1.2). The structure proposed by Kuratko et al. (2004) resembles, most comprehensively, the critical elements and interactions identified in this study of Siemens entities. As shown in section A of Figure 6-1, Kuratko et al. models an entrepreneurial implementation and outcome comparison at organisational and individual levels by combining five building blocks: external transformation triggers (A1), the corporate entrepreneurial strategy of the firm (A2), organisational antecedents (A3), individual

entrepreneurial behaviour (A4), and the entrepreneurial outcomes (A5, see section A in the Figure 6-1 for the summary)¹¹⁰.

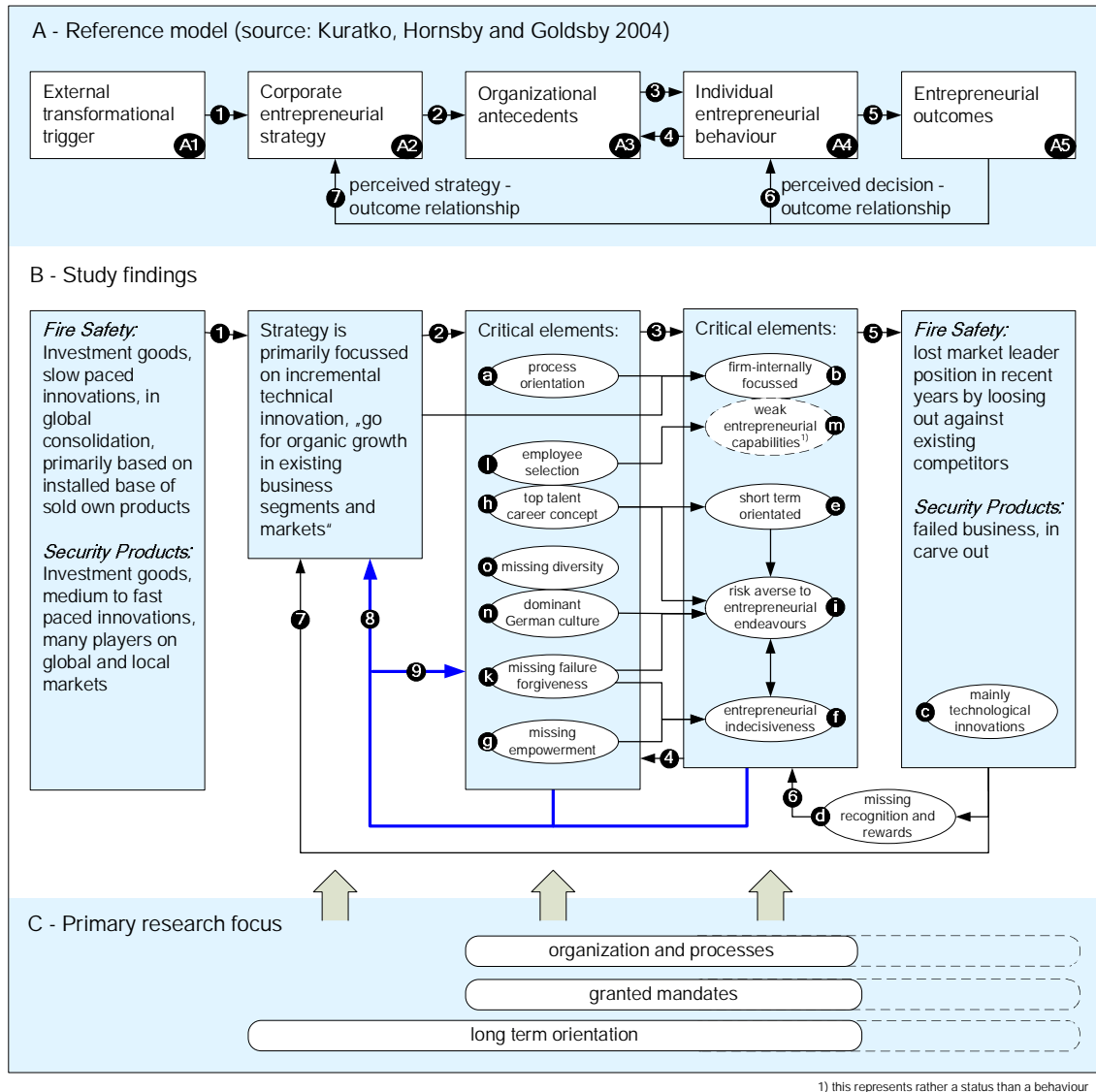


Figure 6-1 – Critical factors and their interactions in the context of a CE model

Section B of Figure 6-1 depicts the present study’s findings. The identified critical elements currently hindering significant entrepreneurial activity as discussed in section 5.7 and the previous paragraphs belong primarily to organisational antecedents (3) and individual entrepreneurial behaviour (4). The lack of recognition and reward for entrepreneurial endeavours and achievements (e) is one of the critical feedback interactions (interaction 6), but

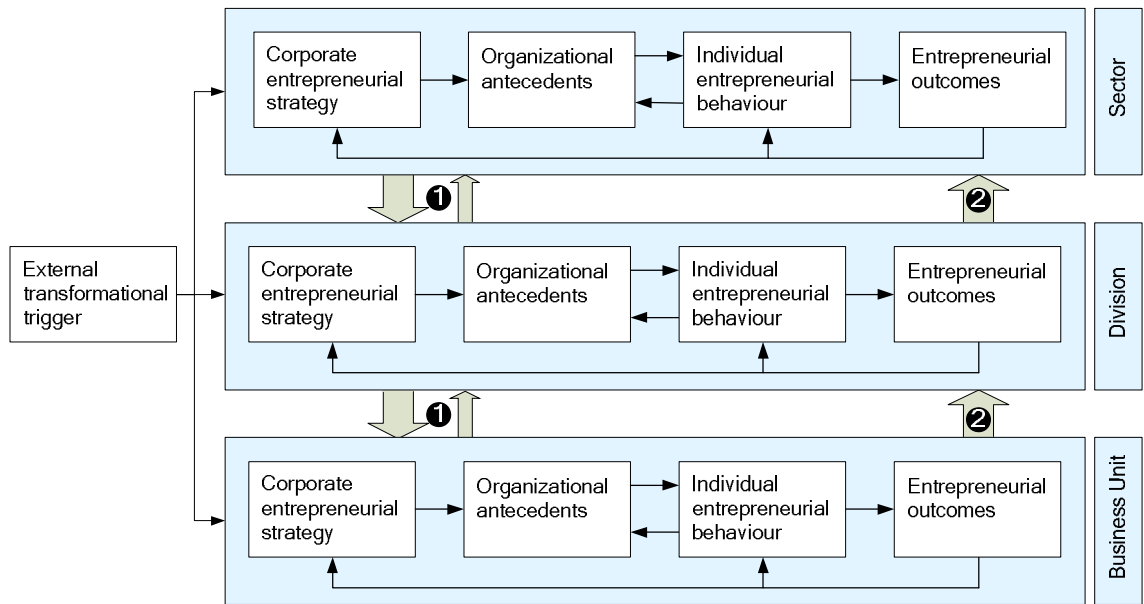
¹¹⁰ Section C indicates the areas of this model primarily covered by the three main research aspects here (organizations and processes, granted mandates, and long term orientation).

even more interesting is the proposed “cycle” of existing and perceived entrepreneurial behaviour (A4), and organisational antecedents (A3). “An organisation’s sustained effort in corporate entrepreneurship is contingent upon individual members continuing to undertake innovative activities and upon positive perceptions of the activity by the organisation’s executive management, which will, in turn, support the further allocation of necessary organisational antecedents” (Kuratko et al. 2004:78). Unfortunately, it can be expected that this feedback mechanism (interactions 3 and 4) is also taking place under negative circumstances: failed entrepreneurial activity will undermine sustained effort in corporate entrepreneurship towards allocation of necessary organisational antecedents. Even worse, if the top management itself (providing the organisational antecedents in A3 as well as being individuals as modelled in A4) is short term oriented due to respective people selection (l), promotion programs (h) and incentive systems, it can hardly be expected that an entrepreneurial – and thus longer term – firm strategy will be actively pushed by them (compare new interaction 8). Looking at the huge Siemens organisation and its higher organisational levels defining the strategy of the business units and division, the apparent insignificance of the written firm strategy indicates some inertia of strategy as the driving force, and sets up organisational antecedents and individual entrepreneurial behaviour as a self-referencing system (new interaction 9). This can be seen as a contradiction of the prevailing assumption that firm structures follow firm strategy (Morris et al. 2008:226).

So, the critical aspects identified in the researched cases can be interpreted as a distinct pattern (or configuration; Miller 1986, Miller 1996) of conditions of influential factors spread over the elements of firm strategy, organisational antecedents and individual behaviour. These factors may “stabilize” each other to a certain extent by mutual interactions; an effect which is expected to create an additional hurdle for a wanted and required change to more entrepreneurial activity. Unfortunately, almost no research seems to exist on such specific multi factor interactions. Only the relationship among the aspects of risk propensity and time preference seems to have been researched (Das and Teng 1997, Petrakis 2007), with the configuration of risk averseness and a high preference for the present (resembling the short term future orientation as used here) found to represent “non-entrepreneurship” in a firm (Petrakis 2007:283). Another recent study on relevant mechanisms of corporate entrepreneurship also acknowledged the existence and relevance of a “two-way interactive and recursive process” in the “co-evolution of managerial and employee behaviour and organisational structures” (Heinonen and Toivonen 2007:165). Further studies of multidimensional models primarily portray interactions as unidirectional and toward one (or only a few) aspects (e.g. Baum, Edwin and Ken 2001, Baum and Locke 2004).

6.7.2 Interactions throughout all organisational levels

The researched cases revealed, as key sources of entrepreneurial triggers, not the external environment of the firm, but superior organisational levels or entities within the firm (please see section 5.7 for the details). Therefore the interactions of the Fire Safety business unit with superior organisational levels within Siemens will also be considered in relation to their potential to foster activities of entrepreneurship. When configuring the identified effects within the model of entrepreneurship of Kuratko et al. (2004) used in the previous section, the process elements are replicated for all relevant entity layers (here: business unit, division, and sector). Corporate strategy and organisational measures are typically discussed and agreed between the entity layers (if not just defined top-down; 1), and the entrepreneurial outcomes have to be justified for the next higher entity level on a regular basis (2; see Figure 6-2 for the summary). The model application also illustrates key elements of added complexity of such conglomerates. In fact, the constellation at Siemens is even more complex since the depicted structure takes place in headquarters' organisations as well as in the organisations in every country containing an active business unit. The model also indicates the replication of the principal-agent constellation and related challenges (Eisenhardt 1989a, Shleifer and Vishny 1997, Audretsch et al. 2009), with a whole chain of such relationships existing in conglomerates. Most research studies recommend a significant amount of autonomy and comprehensive business mandates granted to an entity management to allow for entrepreneurial activity primarily driven by themselves (Birkinshaw 1995, Birkinshaw 1997, Birkinshaw et al. 2000, Birkinshaw 2000, Birkinshaw and Hood 2001, Birkinshaw et al. 2005). The cases here, however, indicate a passive entity management which is urged to entrepreneurial action by direct orders from higher organisational levels (i.e. by corporate and divisional managements, see section 5.8). This may be linked to the fact that within Siemens the key elements of vision, mission and strategy of the entities, and especially human resource aspects like employee selection, promotion concept, or granted incentives, recognition and rewards are defined top down. From a practical perspective, the various measures proposed to strengthen the entrepreneurial "predisposition" of management and key staff would be required to get in the "driving seat" first before asking for more autonomy and comprehensive business mandates.



Source of reference model: Kuratko, Hornsby and Goldsby (2004)

Figure 6-2 – Drivers for entrepreneurial activity throughout entity layers of a conglomerate

On a theoretical side, current research investigates such vertical effects in the context of top management, middle managers and normal employees within one firm (Hornsby et al. 2002, Kuratko and Goldsby 2004, Kuratko et al. 2004, Kuratko et al. 2005b). But no research identified so far considered vertical effects over the corporate structure of conglomerates. Further implications of this finding towards potential new theory building will be drawn in the next chapter.

6.8 Linkages between recommended actions and organisational levels and processes

As implied by the above discussion, each recommendation to foster entrepreneurial activity affects different organisational levels and processes. Table 6-2 identifies some of these key linkages. The two dimensions depicted in Table 6-2 – affected levels and affected processes (please see section 5.2 and Figure 4-2 for the Siemens process definition) – were derived by examining dependencies and redundancies across recommended actions. Below I provide the rationale for linking elements of these two dimensions to specific recommendations.

Aspect (section)	Recommended action		Affected levels			Affected firm processes	
			Vision/mission	Strategy	Operational		
Entrepreneurial orientation (5.1)	1	1	Establish entrepreneurial product-market strategies	X		MP-SPC	
		2	by respective top management directives		X	all	
	2	Foster domain knowledge by working groups, business unit certification and "clan" memberships		X	X	MP-SPC	
	3	1	Add business venturing aspects to the Leadership Model	X	X	HRM	
		2	and respective capabilities to job profiles	X	X	HRM	
Motivation, recognition and reward (5.2)	4	Change incentive systems (4 aspects)		X	X	HRM -> all	
	5	1	Add business venturing aspects to the vision	X		MP	
		2	Expand top+ awards and 3i program		X	MP	
		3	Introduce open door policy to executives		X	all	
	Trust (5.3)	6	1	Base trust upon reached certification levels of subsidiaries and individuals...	X	X	MP
2			...and grant entrepreneurial competences respectively	X	X	MP	
Organisations and processes (5.4)	7	1	Define an entrepreneurial process within the management process	X		MP -> all	
		2	Defined business field investigation and business plan activities	X		MP -> all	
	8	Define slack time for entrepreneurial endeavours			X	MP, HRM -> all	
	9	Provide management support by entrepreneurial coaching and mentoring of top talents		X		HRM / all	
	10	1	Provide more focus by clearer business priorities	X	X	(all)	
		2	...more decisiveness towards concrete goals		X	(all)	
		3	...extended delegation of competences		X	(all)	
	11	1	Provide respective general training and...		X	HRM	
		2	...specific training course in respective processes		X	all	
	12	1	Expand SMART initiative towards M1/M2 markets	X		MP -> all	
		2	Provide more competences to mature branches	X		MP -> all	
3		and roll out the New Collaboration model in Building Technologies		X	PLM / CRM		
Granted mandates (5.5)	13	1	Introduce and implement the global systems house	X	X	MP	
		2	based on clearly defined branch mandates	X	X	MP	
		3	Establish a constant competence evolvment		X	all	
		4	based on mutual information exchange and decision taking		X	all	
Long term orientation (5.6)	14	1	Align and streamline vision, mission	X		MP (-> all)	
		2	and explicitly address entrepreneurial endeavours	X		MP (-> all)	
		3	Keep strategies simple, apply use-cases		X	all	
	15	1	Request longer stays in key positions		X	X	MP, HRM
		2	Change current employee selection criteria		X	X	MP, HRM
		3	Delegate less (German) managers		X	X	MP, HRM
		4	Use longer judgment periods and different criteria		X	X	MP, HRM

Legend: MP – management process, SPC – strategic planning and controlling, HRM – human resource management, PLM – product lifecycle management, CRM – customer relationship management. Please compare section 5.2 and Figure 4-2

Table 6-2 – Summary on recommended actions and affected firm levels

Starting the summary on the level of vision and mission of the firm, recommended actions encompass the inclusion of the aspects of business venturing and firm renewal in the vision and mission statement and an alignment between the respective Siemens AG, Building Technologies

and Fire Safety statements (5, 14). The considered transformation of Building Technologies / Fire Safety into a global systems house as an added overall goal (13, please compare section 5.3.4) needs also to be reflected in these statements. Respective adaptations involve, primarily, the management process.

Having such an entrepreneurial vision and mission would require aligned strategies (1) and process elements representing the necessary entrepreneurial strategic and operational activities (7); thus adapting the management process first and potentially all the other business processes thereafter. Further adaptations are required in the leadership model and related job description contents (3), the employee selection criteria and time horizons for key jobs (15), the incentive systems (4), and the category definitions of the top+ award and 3i program (5). That is, a key role is assigned to the human resource management. The vision of a global systems house approach should be embedded in the business strategies (13) by implementing systematic certification of subsidiaries and key individuals (6), the establishment of permanent working groups on areas of key domain knowledge and leveraging mechanisms of “clan” memberships (2), and subsequently granting more business venturing permissions to mature subsidiaries (12). Furthermore, clearer priorities have to be set for middle term goals (10), and a system of entrepreneurial coaching and mentoring is required (9). Potentially all process elements may be involved for a successful implementation of these activities.

Finally, on the level of operational activities, the described strategic goals must be implemented (1-6, 8, 10-13, 15) so that entrepreneurial behaviour and action is reflected by the yearly activities of business planning and implementation. Specific issues here are the introduction of an open door policy of executives for entrepreneurial ideas (5), providing slack resources through certain unplanned time (8), fostering decisiveness in daily practice (10), and providing knowledge sharing and training in entrepreneurial business contexts (11). Again, potentially all process elements are involved for a successful implementation of these activities.

6.9 Summary

In this chapter, the findings from the field research were discussed in the context of related literature and the nature of the researched Siemens entities. A recommended set of fifteen activities fostering entrepreneurship in the researched entities was derived. These both complemented and recognized the constraints of existing firm initiatives, thereby increasing the probability of successful activity implementations.

Subsequently, interactions identified among the actively sought key aspects as well as other factors emerging from the field research were discussed in the context of existing models on CE applicable to the research here, and with reference to their relevance in fostering activities for entrepreneurship in practice and theory. The discussion revealed a specific configuration (or pattern) of interacting factors potentially creating inertia to entrepreneurship within the firm, and related effects throughout the vertical layers of organisational entities that exist in huge conglomerates such as Siemens AG.

Finally, and as a prerequisite to draw implications from the research in the next chapter, the linkages between the 15 recommended actions and five affected organisational levels and processes were drawn.

7. Implications

In the previous chapter the findings from the field research were discussed in the context of respective literature and the nature of Siemens for fostering entrepreneurship in multinationals and their local subsidiaries. Fifteen recommendations for fostering entrepreneurship were provided. In this chapter, the implications of these recommendations and related findings are explored in relation to firm practice at researched Siemens entities, firm practice in comparable environments, and potential implications for theory.

Given the nature of a DBA thesis, implications are to be aimed primarily at managerial practice in comparable firm environments. Therefore, recommendations for fostering entrepreneurship, as identified in this study and summarised in section 6.8 and Table 6-2, were taken as the basis for the implications. In section 7.1, five key areas of the organisation are derived from the two dimensions identified earlier in Table 6-2. Based on these five key areas, the implications towards firm practice at researched Siemens entities (section 7.2), firm practice in comparable environments (section 7.3), and related theory (section 7.4) are explored. Finally, key points of the derived implications are summarised in section 7.5.

7.1 Organisational implications of recommendations

The below discussion of fifteen recommended actions is structured around five key areas, as shown in Table 7-1. The first key area relates to the vision, mission and strategy of the firm. Since this thesis addresses the question of how to foster entrepreneurship within local organisations of an MNE, the aspect of the subsidiary role, and the related initiative of establishing system houses was selected as a second key area. Siemens is primarily driven by defined processes, understanding concrete organisations as process implementations, which are typically more rapidly changed and adapted than the process definitions (please see section 5.2.1). Firm processes affected by specific recommended actions have already been identified in section 6.8 and Table 6-2, and related implications are discussed hereafter as the third key area. The analysis presented in section 6.8 also revealed key roles of human resource management and daily managerial practice, which were selected as the last two key areas of implications (please see Table 7-1 for the details of assignments of each recommendation).

Aspect (section)	Derived recommended action (compare respective sections in chapter 6)		=> Key areas involved					
	RA-#	Element	1 - Vision, mission, strategy	2 - Subsidiary role / systems house	3 - Required process adaptations	4 - Human resource aspects	5 - Managerial practice	
Entrepreneurial orientation (5.1)	1	1 Establish entrepreneurial product-market strategies	x		X			
		2 by respective top management directives	X					
	2	Foster domain knowledge by working groups, business unit certification and “clan” memberships			X		x	
		3	1 Add business venturing aspects to the Leadership Model			X		
2 and respective capabilities to the job profiles				X				
Motivation, recognition and reward (5.2)	4	Change incentive systems (4 aspects)					X	
	5	1 Add business venturing aspects to the vision	X					
		2 Expand top+ awards and 3i program	X					
3 Introduce open door policy to executives						X		
Trust (5.3)	6	1 Base trust upon reached certification levels of subsidiaries and individuals...		x	X		X	
		2 ...and grant entrepreneurial competences respectively		X				
Organisations and processes (5.4)	7	1 Define an entrepreneurial process within the management process			X			
		2 Defined business field investigation and business plan activities			X			
	8	Define slack time for entrepreneurial endeavours		X			X	
	9	Provide management support by entrepreneurial coaching and mentoring of top talents					X	
	10	1 Provide more focus by clearer business priorities	X				X	
		2 ...more decisiveness towards concrete goals			x		X	
		3 ...extended delegation of competences		X			X	
	11	1 Provide respective general training and...				X		
		2 ...specific training courses in respective processes				X	X	
	12	1 Expand SMART initiative towards M1/M2 markets	X	X				
		2 Provide more competences to mature branches		X				
3 and roll out the New Collaboration model in Building Technologies			X	x	x			
Granted mandates (5.5)	13	1 Introduce and implement the global systems house		X			x	
		2 based on clearly defined branch mandates		X			x	
	3	Establish a constant competence evolvement					X	X
		based on mutual information exchange and decision taking					x	X
Long term orientation (5.6)	14	1 Align and streamline vision, mission	X					
		2 and explicitly address entrepreneurial endeavours	X		X			
		3 Keep strategies simple, apply use-cases	X	x				
	15	1 Request longer stays in key positions				X	x	
		2 Change current employee selection criteria	x	x		X		
		3 Delegate less (German) managers		x		X		
		4 Use longer judgment periods and different criteria		x		X	x	

Legend: **X (bold)** – primarily discussed, x – affected as well

Table 7-1 – Assignment of recommended actions to subsequent sections on implications

7.2 Implications for practice of researched Siemens entities

The implications for the firm practice of researched Siemens entities will be discussed hereafter along with the involved key areas as derived in the previous section.

7.2.1 Vision, mission and overall strategy

Siemens AG, founded in 1847, reported for financial year 2010 a turnover of EUR 76 billion and a workforce of 405,000 employees¹¹¹ and ranks 40th in the Global 500 Fortune list 2010 of the biggest companies of the world¹¹². Despite a concentration on offering products and application in power generation and transmission, healthcare and industrial automation, Siemens is still considered to be a conglomerate¹¹³ instead of a fully integrated corporation. The impossibility of investigating cases in the power and healthcare sectors as initially intended (please see section 3.3.2) could be viewed as confirmation of a limited understanding of being one company. Nevertheless, Siemens top management is actively driving a shared vision, mission and company culture with the One Siemens vision¹¹⁴, a one brand strategy (please see section 6.4.4), and integrated Siemens One solutions offerings are also based on shared organisations (please see Figure 4-3 in section 4.2). As a first conclusion, a company wide shared vision is clearly intended by the top management and, arguably, is required to work successfully in shared organisations and projects. Secondly, the average life expectancy of a multinational corporation is currently estimated as 40 to 50 years¹¹⁵. Thus, the 164 years of existence of Siemens AG already implies significant activities of firm renewal to explain its long term survival. In addition, entrepreneurial activity – especially strategic corporate venturing – is seen as a main ingredient to break up the “predetermined” life cycle of “an organisation to form, grow, mature, decline, and die” (Hoy 2006). In summary, a shared entrepreneurial vision for the whole Siemens AG is wanted by top management, beneficial to the firm operations, and required for a longer term survival – a key prerequisite for the subsequent discussion on proposed adaptations.

¹¹¹ As reported in the Siemens Annual Report 2010

¹¹² Ranked by turnovers. Source: http://money.cnn.com/magazines/fortune/global500/2010/full_list/

¹¹³ NASDAQ, Yahoo Finance etc. list Siemens as a *conglomerate*

¹¹⁴ Compare http://www.siemens.com/about/de/index/vision_strategie/one_siemens.htm

¹¹⁵ Compare a respective Bloomberg Business Week report on <http://www.businessweek.com/chapter/degeus.htm>

On the level of the vision and mission statement, the discussion of the aspects of allowance, recognition and reward of entrepreneurial activity (please compare section 6.2) led to the requirement of having an explicit mention of new business venturing in the corporate vision by expanding the application of the pioneering aspect (RA-5). With the Annual Report 2010, Siemens has published a reworked declaration of its key values regarding vision and mission, and derived activities in strategy and operations (please see the subsequent Figure 7-1). The term pioneer – most closely representing entrepreneurial behaviour – is only applied in the context of “technology driven markets” (a). Innovation is only mentioned in this context of technology and portfolios (b) – obviously only representing product portfolios since the service business is mentioned separately (d). This is not really surprising since the study revealed a significant inward orientation at Siemens (please see sections 5.2.1 and 5.3.4), and the new declaration also explicitly addresses a required intensification of customer focus (c). In consequence, the aspect of pioneering in the sense of new venturing should be expanded towards the context of customer oriented business and respective innovations on the sales side (e.g. business approaches, go to market models), and maybe even lead to entire value chain re-engineering. The current definition of being “a pioneer in technology driven markets” (a) is not a first priority for the main Building Technologies business units Fire Safety, CPS and BAU, since their business is not primarily driven by technological innovation. In fact, one of the biggest changes for the Building Technologies business in recent years was the introduction of the new business model of energy savings performance contracting (ESPC)¹¹⁶ – a business innovation which was not invented or driven by Siemens. On a broader scale, Siemens healthcare and power sectors are, to a higher degree, dependent on technical innovation (e.g. new medical diagnostic approaches, and power generation by wind turbines and solar technology), and the selection of environmentally friendly – or “green” – portfolios as a key focus area has to be appreciated as an entrepreneurial decision in itself. On a more generic level beyond a Siemens firm context, fostering entrepreneurship certainly requires a respective entrepreneurial firm vision – defined and shared explicitly or implicitly – as a key foundation.

¹¹⁶ Energy Savings Performance Contracting was developed in the 1980s in the United States to foster energy saving mechanisms. In 1992, US Congress authorized federal agencies to utilize pay from savings contracts under ESPC legislation. Source: http://www.siemensgovt.com/cap_oep_energys_savings.html, last accessed 2011-01-23

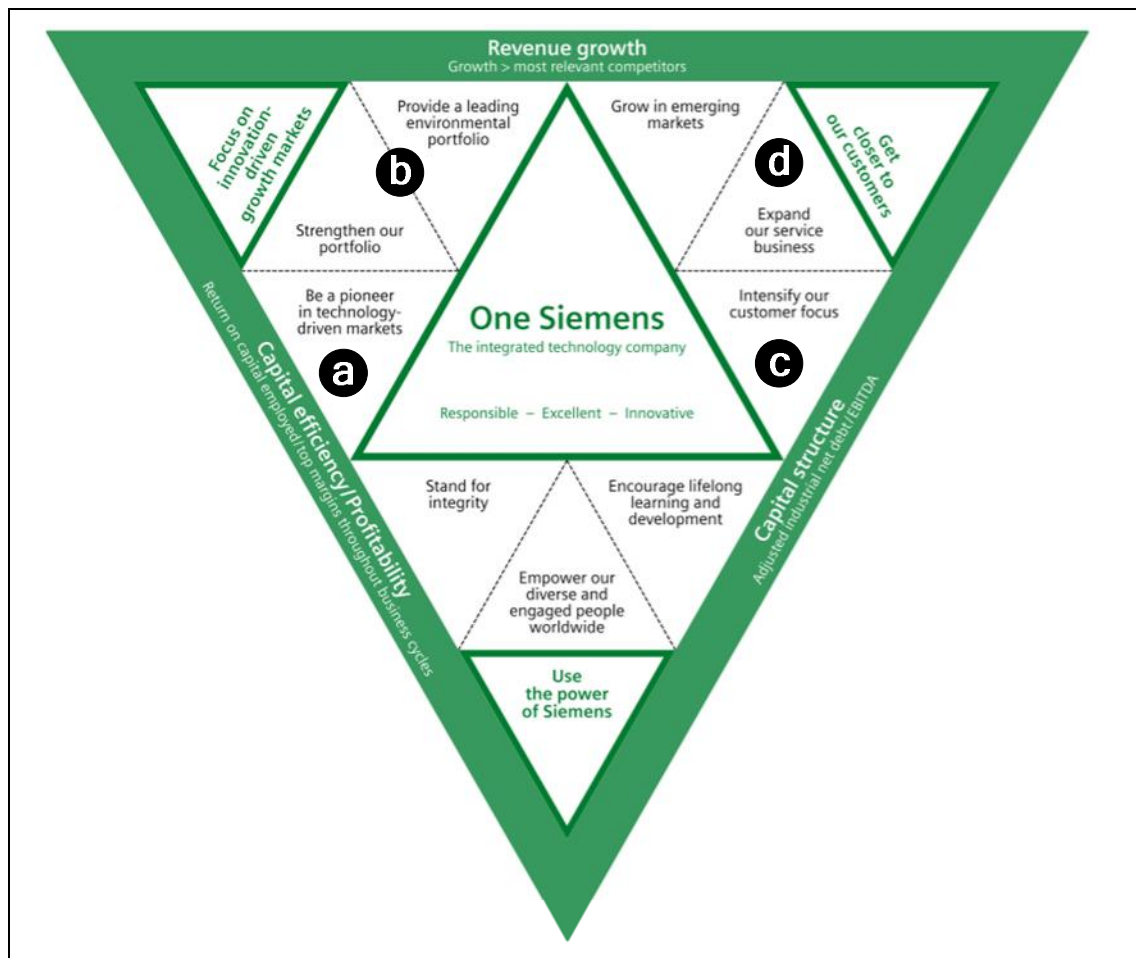


Figure 7-1 – “One Siemens” definition triangle¹¹⁷

Having a stronger focus on the Building Technologies division and the target of fostering entrepreneurship in local organisations, the vision of a global Building Technologies “systems house” (please see sections 5.3.4 and 6.5, and RA-13-1) needs further development. The systems house concept of providing customers entire solutions and turnkey systems typically integrating different disciplines seems promising for allowing the required entrepreneurial autonomy for local entities; but no clear definition of intended targets, the deployment of derived functions and resulting responsibilities and interfaces has been provided thus far. In fact, the tightly connected concept of the subsidiary certification has to be further evolved in a close synchronization with the overarching systems house concept. Moreover, both parts have to be streamlined with the new Siemens AG vision, as depicted in previous paragraphs. So far, the new Siemens AG vision and mission statement has not been addressed within Building

¹¹⁷ As outlined in http://www.siemens.com/annual/10/_pdf/Siemens_AR2010_OneSiemens.pdf (last accessed 2011-02-02)

Technologies at all (please see section 5.4.1 and RA-14), thus bearing the risk of simply being judged as irrelevant by employees – or even creating confusion about where to go in future. Looking at this situation from a more generic perspective again, vision statements in MNEs require alignment among different organisational units to avoid confusion and maximise potential impact.

As a last dimension, aspects of maturity of the fire safety business could be considered towards appropriate company vision and strategy. The industry – based on its current business approaches – is considered to be in consolidation, with top competitors like UTC and Tyco having bought many companies in the recent decade (please see section 5.1). This could be seen as an indicator for limited levels of potential entrepreneurial activity in the sense of disruptive innovations, and points towards maximising exploitation by competitive aggressiveness. But since the underlying business of protecting people and goods against dangers from fires will increase rather than decrease in importance, the maturity of current business could signal the potential for disruptive new approaches, elevating the need for more entrepreneurial alertness.

7.2.2 Subsidiary mandates and the systems house approach

The SMART initiative of Siemens top management, aimed at the establishment of new global business headquarters outside Europe and thus traditional headquarters, is the first step towards the sought after decentralisation of Siemens organisation in future. In the longer run, the current headquarters subsidiary constellation could be expected to be transformed into a globally dispersed network of entities (Birkinshaw and Hood 2001, Dimitratos et al. 2009). But to stay within the current terminology and shorter periods of time, implications from the research towards fostering entrepreneurship in subsidiaries shall be considered based on the assumption of a still dominant headquarters.

It seems most appropriate to expand the subsidiary business mandates based on a further elaboration of the systems house concept framework (please see previous section, sections 5.3.4 and 0, and RA-13) as an already launched and well documented approach. The granted priority of money investments for best certified branches should be expanded further toward allowing local new business venturing activities based on the reinvestment of local profits, representing an extended delegation of decision-making authority (RA-6, RA-10) as well as required “seed money” (Birkinshaw and Hood 2001). The timely implementation of the New Collaboration model between headquarters and subsidiaries would additionally support the possibilities of

subsidiaries going for profitable international project business on their own (RA-12-3, please compare section 5.2.4).

Furthermore, the working groups at Building Technologies headquarters should be further systematised and established on the level of the business unit Fire Safety (RA-2), in conjunction with yearly Fire Safety business conferences allowing for best practice sharing in sales as well as providing a forum for new venturing ideas. Resulting business initiatives implementation should be used for top+ award applications (RA-5-2). Furthermore, the expansion of the SMART headquarters functions (as in Fire Safety China) towards higher end markets (M2 and M1, please see sections 4.6, 5.2.4 and 6.4.4) should be considered (RA-12). This could be built around specific markets like marine business, where Far East countries are imputable for 80% of the total market, thus the headquarters function would better be placed in this region.

Finally, the current practice of having primarily German managers leading subsidiaries abroad – on the basis of assignments limited to a maximum of three year stays – should be changed towards longer stays of typically five years, manager selection representing more diversity of origin, and a considerably higher share of locals in these positions.

7.2.3 Firm processes

The research showed a high maturity in applied firm processes at Siemens entities in the area of exploitation phases of entrepreneurial opportunities. Furthermore, the respective Siemens process house framework is well established as the mandatory reference to be used when defining content, ownership and interconnection of activities within the firm. This process orientation is also supported by a respective firm history and culture, and a growing pressure for applying such defined processes by industry standards and customer requirements.

For entrepreneurial opportunity recognition however, no definitions of respective elements within the management process (covering strategy, business field identification and analysis, and derived business plan proposals) or the key business processes (Product Lifecycle Management, Supply Chain Management and Customer Relationship Management) exist so far at Building Technologies or its business unit Fire Safety. The Building Technologies process house definition merely contains the activities “define action fields”, “analyse external environment”, “analyse internal strengths and weaknesses”, “develop strategy”, “implement strategy”, “control strategy” and “enable strategic planning and controlling” as part of the overall strategic planning and controlling activity (please see a in Figure 7-2 providing the

overview). These definitions are not further defined. At other Siemens divisions though, implementations of these elements by detailed description already exist. The establishment of such elements – building part of periodically executed activities like the yearly strategy review process – can be expected to strengthen opportunity recognition significantly (RA-7).

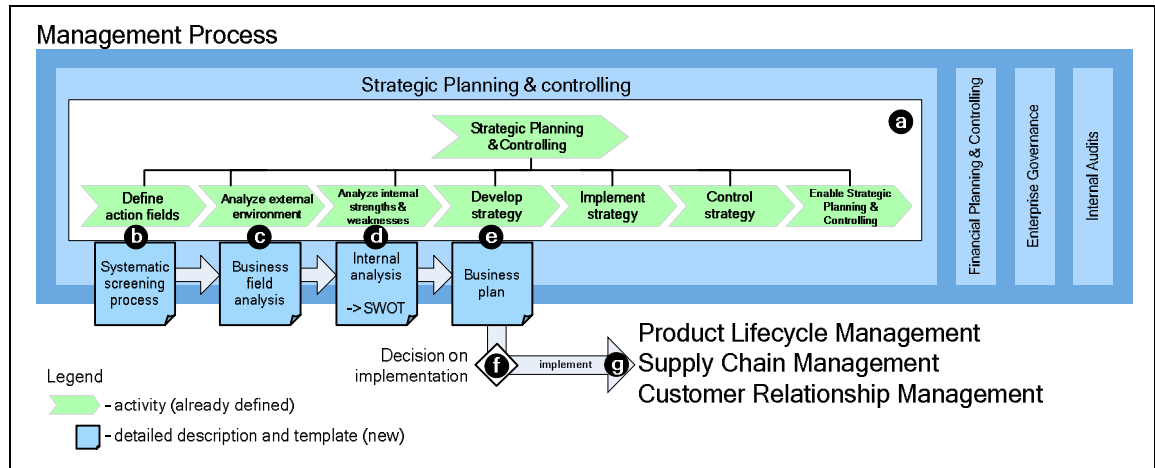


Figure 7-2 – Proposed management process expansion to include opportunity recognition

Required key elements on the process definition side are: a systematic screening process (b) for new business opportunities based on trend monitoring in respective markets, technologies, regulations etc. leading to action field identification and subsequent business field analysis within these action fields (c), followed by internal analysis of involved own strengths and weaknesses and a derived SWOT analysis (i.e. the combination of strengths and weaknesses, and market opportunities and threats; d), and a subsequent business plan proposal (e). With a positive decision to develop the proposed new business (f), implementations have to be started in all affected business processes (g; please compare section 5.2.1 for the description of the underlying overall Siemens process model). Such a defined setup is also expected to lead to more decisiveness since the process makes decision taking a mandatory step, and also defines pre-requisites and roles (RA-10-2).

When transferring the learning from the product evolution process introduced in recent years to the management process at Building Technologies (please compare section 5.2.1), key success factors are expected to be the establishment of the yearly recurring activity of business screening (b), and the provision of comprehensive delivery templates (b-e) providing guidance and a certain completeness of steps carried out. Furthermore, respective roles like market scouts and business developers need to be re-established (as in the former organisations like Landis &

Gyr and Cerberus) to foster the development of new product-market strategies (RA-1). Respective process implementation activities arising from this thesis proposal have already started at Building Technologies and Fire Safety, commencing in January 2011.

Such a process adaptation implies not only the outlined activities in the management process and the planning steps in the key business processes, but also the inclusion of required business venturing capabilities in the Siemens Leadership Framework (RA-3, please see sections 4.4 and 6.1). The Framework is considered here as belonging to the core firm definitions and not just the ownership of the human resource management. Unfortunately, an analysis of the current nine capability definitions did not lead to a straightforward approach for adding entrepreneurial aspects easily. Subsequent detailed consideration is required to adequately represent these dimensions. Even more urgently, the definition and application of the reference profiles need reworking to stop the current demotivation of employees caused by capability levels primarily being derived from the hierarchical positioning of jobs.

As a last implication related to the management processes, the certification process for subsidiaries (please compare sections 5.3.4, 6.1 and 6.3) could be embedded into the management process definition to clarify the interface to other process elements. Granted trust based on achieved business results and maturity of organisation and processes should also involve freedom for top ranked subsidiary management to apply for new business venturing endeavours (RA-6) – and not only provide “priority” for investment decisions taken at headquarters. Similarly, the New Collaboration Model (please see sections 5.2.4) (RA-12) defining and clarifying all key aspects of international projects regarding legal and accounting facets needs additional detail, enhanced with missing definitions for business mandates and responsibilities, as part of the process definition (RA-7).

7.2.4 Human resource management

“What is good for the manager is not always good for the company. Mission must come first, self-interest last” (Useem 2010:89). The current career making at Siemens based on the top talent program (please compare sections 4.4, 5.4 and 6.3) can hardly be seen as fostering entrepreneurial behaviour today. Current time periods per career step of three years in executive functions should be expanded to at least five years to allow for a more solid judgment of achievements and to also provide stimulation to undertake entrepreneurial endeavours that typically require more than three years to reach payout maturity. Business domain knowledge should play a more important role in the selection and promotion of employees. Therefore, more

appointments of executives and key experts from competition within the same industry should be considered.

The Leadership Framework definition should be adapted to have a stronger focus on entrepreneurial orientation and capabilities in employee selection and promotion processes (please compare the previous section). Similar to the concept of innovation pipelines in pharmaceuticals, executive achievements should also be judged on respective “filling levels” of pipelines of new entrepreneurial endeavours. Furthermore, the current practice of sending primarily German managers as delegates to lead subsidiaries abroad for a maximum of three years should be extended to longer stays of managers and represent more diversity of origin, with a considerable share of locals in these positions (RA-15).

As a second key element, the applied incentive system for executives and further key functions should be significantly changed towards providing more stimulation for pursuing entrepreneurial initiatives. Judgment time periods should be expanded beyond the current one-year target definitions, possibly by applying interim milestones of expected achievements and delayed bonus payouts depending on proven long term success (as currently discussed in financial industries) to reduce ill-starred short term incentives. At the same time, targets potentially hindering entrepreneurial behaviour, like short term profit maximisation, should be critically reviewed for their negative impacts on the long term firm survival (RA-4).

Providing slack time to enable employees to engage in opportunity recognition and subsequent entrepreneurial initiatives (please see section 6.4.1) should be considered. One approach could be to expand the allowed use of currently granted sabbatical days towards such endeavours. The classical approach of allowing all employees to apply a certain ratio of working time for thinking about potential new businesses – like 15% at 3M, or 20% at Wella – would create significant additional cost and will be hard to realise within Siemens. As a variation of this approach, the inclusion of such activities in selected job profiles as ancillary activities based on the respectively expanded Leadership Framework could be considered. This way, the approach would be applied more specifically and without involving a fixed amount of time (RA-8).

Furthermore, as a last “classical” aspect of human resource management, implications towards elements of coaching, mentoring, and constant competence evolvement through training have to be considered. Currently, explicit tasks of coaching (or mentoring) of employees by superiors only exist for top talents; thus implying expansion of entrepreneurial dimensions here first. With

the adaptation of the Leadership Framework and updated job profiles, entrepreneurial aspects become “automatically” part of the job targets and therefore of the established bi-yearly work reviews with superiors. This can be seen as representing some initial aspects of coaching or mentoring, but could be strengthened by explicit mention of opportunity recognition and exploitation activities in the IT based reporting scheme given by human resource management (RA-9).

Specific training programs acquaint employees with the ideas of opportunity recognition and exploitation could be an expansion of already existing courses on business and general management. Specific competence evolvment programs based on training are typically driven by respective business process owners; the contribution of human resource management, here, could be providing expertise in how to setup and execute training successfully, with technical support of best practice, templates etc. Linked to this, human resource management could also play a key role for extended activities in best practice sharing by fostering periodical international meetings in collaboration with specific working-groups (RA-11).

7.2.5 Managerial practice

“CV [corporate venturing] is an area of scholarly inquiry that has important implications for managerial practice” (Narayanan et al. 2009). With an adapted vision, mission and strategy, more comprehensive subsidiary mandates, opportunity recognition embedded in the firm processes and adequate activity in human resource management, the daily practice of executives and other key functions can be expected to have significant influence on entrepreneurial behaviour. As a first point of implications for practice derived from the research, today’s tight management controls defining how things are to be done should be changed toward defining which things have to be done (i.e. management by objectives). This implies the setting of clearer priorities and the provision of focus, and significantly enlarged decision competences of those responsible for achieving these goals. However, such a change towards more people empowerment requires higher levels of trust in employees (please compare section 6.3 and RA-6). This is a development which will only take place over a period of time, and may be strongly linked to the certification processes of entities and individuals (RA-10).

Managerial practice should significantly support implications previously discussed like the further evolvment of the systems house approach, and appropriate employee selection in promotion and appointments to key positions. Within headquarters, it will be primarily in the hands of the executives to which degree subsidiaries will be granted comprehensive mandates

allowing for entrepreneurial activity. Respective decisions may rely on many written definitions, but are finally decisions taken by humans. Daily management decisions have to reflect a certain entrepreneurial spirit to bring the vision and mission to life. An “open door policy” of executives for employees trying to share ideas on new business opportunities could signal such a culture (RA-3-3).

All discussed activities fostering entrepreneurship must, of course, be integrated and coordinated. This aspect, which will be discussed in the next section, is equally relevant for firm practice in general.

7.3 Implications to firm practice in general

The implications from the research towards concrete activities to foster entrepreneurship in the researched Siemens entities as drawn in section 7.2 shall now be further reflected upon for possible implications for other firms. This will be done by looking at two distinct areas of potential transferability of the findings: the identified pattern of critical factors as a whole, and further considerations on specific elements singled out for their general relevance and potential limitations.

7.3.1 Identified general patterns among critical elements and potential implications

As outlined in the discussion of interactions of critical factors for entrepreneurial activity (please see section 6.7 and Figure 6-1), some distinct configurations of factors and their interactions were perceived. Following the conceptual model proposed by Kuratko et al. (2004), the discussed elements involve the areas of firm strategy, organisational antecedents, individual behaviour and entrepreneurial outcomes (please see Figure 7-3 for the summary). As a first and unsurprising finding, the Siemens entrepreneurial strategy targeted on incremental technological product innovations is matched by a respective entrepreneurial outcome (compare elements of cluster A). As a positive interpretation of the case data, a set strategic goal can be reached in practice. However, the case data also showed the insufficient profitability of the chosen strategy and its implementation. As a first implication to firms in general, simply to aim at incremental technological product innovations may prove rather easy to implement, but for many businesses is too unambitious to survive in the long term.

A direct consequence of such a “careful” entrepreneurial strategy, a main focus on firm processes in product definition and development, and a related approach to employee selection was found (elements of cluster B). Capabilities of employees in such a setting were not seen as

especially entrepreneurial in the sense of successfully developing new venturing activities based on opportunity recognition in the markets. The resulting pattern could be labelled as “firm-inward orientation” and also contains elements of a bureaucratic organisation. Arguably, such a setting can take place over longer periods only in established businesses with rather moderate speeds of innovation. In more competitive environments, such a configuration could be seen as simply “non competitive”, thus quickly endangering the firm’s survival. As implication to practice, a company wide shared vision of entrepreneurial firm activities can be seen as a main ingredient to extend the life cycle of an organisation (Hoy 2006). Elements like disruptive innovations and business renewal activities should therefore explicitly be mentioned in vision and mission statements.

As the first aspect of the third cluster of critical elements, a significant short term orientation was identified, driven by short term incentives (based on achievement judgments taking place on quarterly and yearly bases), short term career making (by consecutive promotions every two to three years) and a respective employee selection (by the employer as well the employees; compare elements of cluster C1). In this short-term orientated environment, entrepreneurial capabilities were reported as, again, of minor importance (B). Since there are few rewards for initiating longer term entrepreneurial endeavours in such a configuration, this represents one of the drivers for the risk-averseness discovered (compare cluster C2). As implications to a more entrepreneurial firm practice, the applied incentive system should be significantly changed towards providing more stimulation for pursuing entrepreneurial initiatives. Judgment time periods should be expanded beyond the current one-year target definitions, possibly by applying interim milestones of expected achievements and delayed bonus payouts depending on proven long term success.

Having a majority of employees reported as somewhat avoiding entrepreneurial risk taking indicates a particular firm culture. The predominantly German origins of executives and key staff in the researched cases were seen as one source of this culture, and also indicate low levels of people diversity. Linked to this risk-avoiding culture, a missing failure forgiveness was reported (C3), fostering, again, risk averseness of employees and thus also hampering entrepreneurial decisiveness (C4). Limiting levels of people empowerment (C5) by not granting comprehensive mandates was seen as a second driver towards entrepreneurial decisiveness. Arguably, to change such an entire culture would comprise a whole set of factors and respective implementation activities (please compare the last paragraph), and a longer period of time for sustainable implementation.

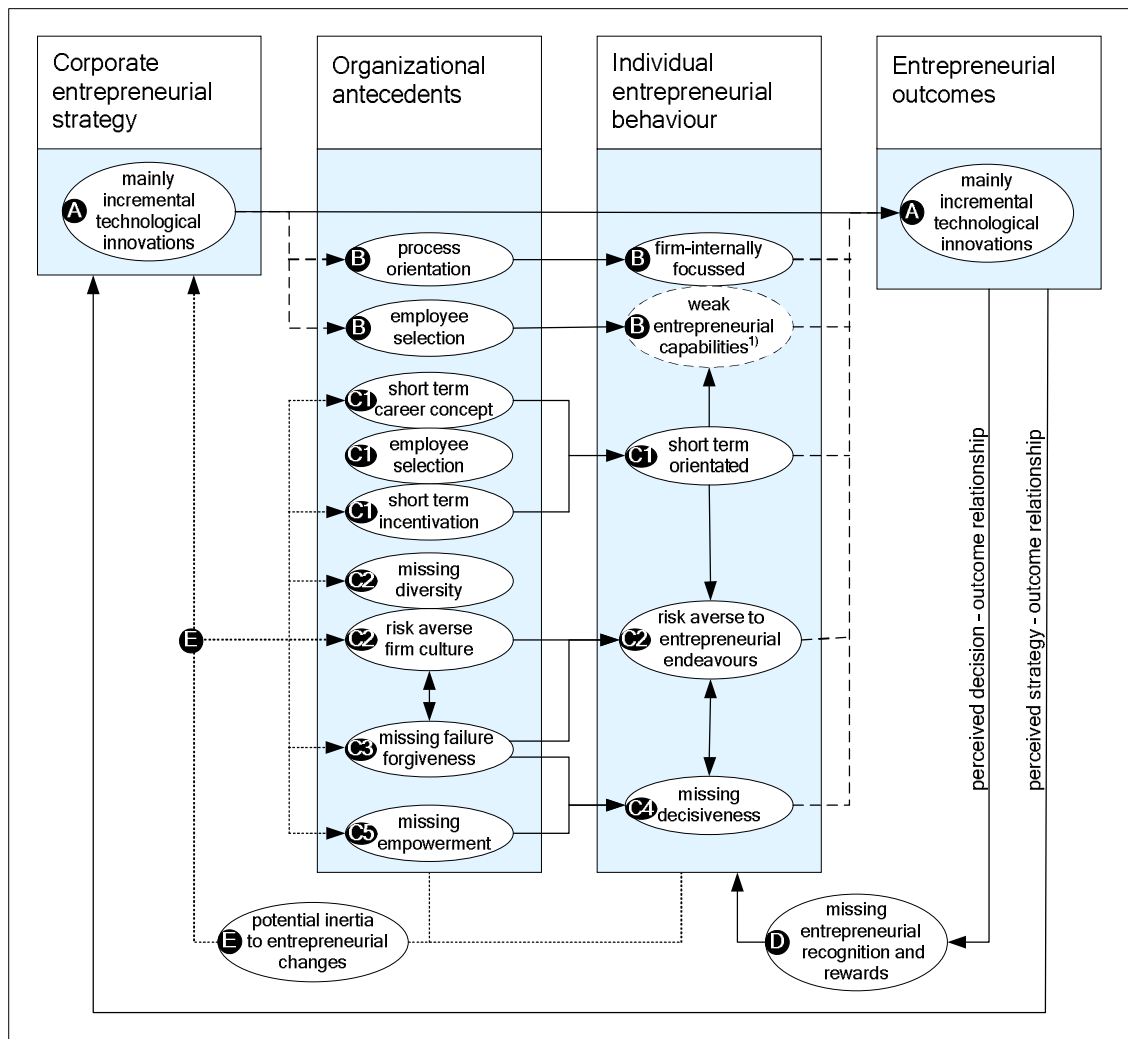


Figure 7-3 – Found critical factors, interactions and clustering

Looking at feedback interactions and cycles, the depicted elements of organisational antecedents and individual entrepreneurial behaviour are expected to be mutually influencing each other significantly (as an already proposed mechanism of the used model). Furthermore, the perceived decision-outcome relationship for individuals was found to be significantly influenced by almost completely missing entrepreneurial recognition and reward mechanisms (interaction D). As implication to firm practice, systematically granting recognition and rewards for such endeavours would represent one of the necessary implementation steps of an entrepreneurial firm vision.

The case research indicated that this configuration of elements may create additional resistance to changes towards a more entrepreneurial set up. If the management itself is short term oriented due to people selection, promotion programs and incentive systems, it can hardly be expected that an entrepreneurial – and thus longer term – firm strategy will be actively promoted.

Furthermore, the entrepreneurial elements in the existing corporate strategy seem insignificant for managerial practice, indicating some inertia towards strategy as the driving force, and organisational antecedents and individual entrepreneurial behaviour could behave as a self-referencing system (interaction E).

As a key implication towards fostering firm entrepreneurship in practice beyond the researched scope, it is important to analyse the whole set of influential factors in organisational antecedents and individual entrepreneurial behaviour, and its specificities. That is, the context and specific relationships need to be understood. To subsequently define a set of appropriate single measures to foster entrepreneurship may also require understanding the additional inertia towards change created by the identified pattern as a whole. Arguably, two key forces could help to achieve significant changes towards entrepreneurial firm activity. As the classic driver first, the external environment may create sufficient pressure on an entrepreneurial adaptation of the firm through the effects created by current competitive disadvantages. Second, and specifically applicable in case of larger organisations with hierarchical entity structures similar to the researched Siemens environment, the management of an overlying structure may take such measures as comprehensively changing the strategy and the set up of a subjacent entity.

7.3.2 Implications from identified single elements

Concrete implications for firm practice in general arising from the identified single elements, as opposed to patterns, shall be considered by exploring them along the previously identified five main dimensions of vision, mission, and strategy; subsidiary roles; business processes; human resource management; and managerial practice.

To have an explicit (or even implicit) mention of the recognition of new entrepreneurial endeavours and subsequent exploitation on the level of the vision and mission statement of a firm will certainly assist an entrepreneurial focus in any company (Shane et al. 2003, Locke and Baum 2007). Providing such an emphasis on entrepreneurship may be especially relevant in large and well established firms focussed on the exploitation of the running business, on internal aspects of the firm like processes and organisation, and thus behaving rather bureaucratically. To refocus towards customers, changed customer behaviours, new customers etc., there may be a wide variety of approaches; from mentioning concrete new endeavours and longer term targets in new business fields up to pure company value definitions using terms like “entrepreneurs”, “pioneers” or “innovators”. Subsequently, vision, mission and value statements have to be reflected in the company strategy down to the daily (managerial) practice to be perceived by

employees as significant and relevant; otherwise the staff may even become cynical about it. However, the extent and “flavour” of entrepreneurial orientation and action most relevant towards firm performance may be dependent on the type of industry (Sandberg and Hofer 1987, Covin and Slevin 1989, Lumpkin and Dess 1996a) and its life cycle status (Covin and Slevin 1990, Covin and Slevin 1991, Lumpkin and Dess 2001: 446). In a similar way, as discussed when deriving the conceptual framework for this research in section 2.3, emerging industries would require fast paced and rather disruptive innovations, whereas mature business may primarily focus on competitive aggressiveness.

In the context of internationally or globally dispersed firms, business responsibilities, granted mandates and thus autonomy to subsidiaries may play an important role towards entrepreneurial opportunity recognition and exploitation. As found in the researched cases here however, this aspect may significantly be influenced by the type of industry again, and therein especially on the level of global uniformity of offered products, required key competences in high tech innovations down to low cost manufacturing etc. Different business regions may ask for significantly different products by market specifics including customer preferences and local regulations, thus requiring local entities to be close to these markets to look for new entrepreneurial opportunity recognition and exploitation. Related granted business mandates – dispersed globally and allowing a maximum of entrepreneurial activity – may be particularly dependent on the industrial environment, especially for the aspects of specific product and business innovations, a maximised leverage from economies of scope and scale, and cost optimization in the supply chain.

The comprehensiveness and, thus, relevance of firm processes may vary with the industry environment requiring definition and implementation by given rules and regulations; by the size, degree of distribution and collaboration of different entities of the firm; and also by the “cultural embeddedness” of thinking and working in explicit processes in a specific firm and its specific industry. A certain transferability of process related study findings towards a broader range of firms may occur especially in highly regulated industries, and those focussing on technical and complex products – e.g. fields like pharmaceuticals, biotech, critical infrastructures involving transportation, power generation and distribution. Such firms are forced to follow explicitly defined and repeatedly assessed processes which are typically focussed on the exploitation phase of the business. As a consequence, the emphasis is on the exploitation phase of entrepreneurial opportunities rather than the exploration side. To remain entrepreneurial regarding new business opportunities, respective opportunity recognition could

be covered by a systematic approach of co-operating with highly innovative start-ups, which is reported as being an established pattern in pharmaceuticals and biotech (please compare section 6.1.4; and Baum, Calabrese and Silverman 2000, Rothaermel and Deeds 2004, Rothaermel and Deeds 2006, Rothaermel and Boeker 2008). As a second approach, also proposed for the researched Siemens entities, opportunity recognition could be modelled into the firm processes as well, resulting in a systematic approach that is compliant to the prevalent 'process culture' of these firms. This would include a defined screening process for new business opportunities based on methodologies such as trend monitoring in respective markets, technologies and regulations, leading to subsequent business field analysis, followed by internal analysis of their own strengths and weaknesses, and subsequent business plan proposals. Linked to such process definitions, capabilities in opportunity recognition would be required to bring the activities to life successfully.

When expanding the scope of these capability considerations further, selection and promotion of employees displaying entrepreneurial orientation and required capabilities in opportunity recognition and exploitation can be expected to positively influence entrepreneurship in any firm. In larger companies, the established human resource management organisation could play an important role – together with top and line management – to create, maintain and improve qualities of staff. Furthermore, key positions should be held long enough to allow and motivate entrepreneurial endeavours to attain a certain maturity of implementation, thus providing the opportunity to reap the fruits of one's labour (as represented by granted incentives, promotion etc.). Linked to this, incentive systems should be setup in a way that honours business venturing activities.

Additionally, dependent on the complexity of the business in the respective industry, the domain knowledge of employees may play an important role in being able to identify fields of further innovation, new resource combinations etc. As a consequence for human resource management, the appointment and promotion for key positions may have to be optimized towards domain knowledge increases, rather than career programs allowing internal staff to rotate through many different businesses as is done in many large sized firms.

As a last aspect, all proposed activities and optimizations have to be reflected in daily managerial practice. Taking the metaphor of Mintzberg (1996) who sees the firm as a beehive and the CEO as its queen, the top management has indeed to “exude” this climate of wanted entrepreneurial behaviour and activity in its daily business decisions. Providing clear priorities and goals instead of tight everyday business control, and granting comprehensive competences

and responsibilities could significantly foster entrepreneurship in any firm. This would be one contribution towards an “entrepreneurial culture” of a company, which of course would involve many further facets including trust and motivation.

7.4 Implications for theory

The research in this thesis was informed beforehand by a review of theory and empirical studies in domains identified as relevant for fostering entrepreneurship in the researched context. The key aim of the research lay in the derivation of implications towards practice: potential activities apt to strengthen entrepreneurship in local Siemens organisations based on emerging field research findings and a potential transfer of these findings to a broader firm practice. While this review provided the theoretical sensitivity necessary to help guide the research and interpret findings, no individual theory was developed beforehand, and no existing theory was explicitly tested. Nevertheless, potential implications from research findings towards the applicability, completeness and potential further development of existing theory and conceptual models in the researched field shall be discussed.

First of all, the research supports the notion that “[r]ather than explaining and predicting a unique set of empirical phenomena, entrepreneurship has become a broad label under which a hodgepodge of research is housed” (Shane and Venkataraman 2000: 217). More precisely, a vast set of domains of theory and referenced dimensions or perspectives seem to be involved in entrepreneurial behaviour and activity *in practice*, without any clear delineation among them, and with unclear levels of relevance and interaction. Especially, the given focus on the phenomenon of corporate entrepreneurship in a vast multinational entity may be a key driver for the complexity of relevant theory, going significantly beyond what may be seen as relevant for the setting of an independent start-up entrepreneur. Aspects of subsidiary mandates and initiatives (Birkinshaw 1995, Birkinshaw et al. 1998), and related understandings of the multinational firm as a network of potentially highly independent entities in the future (Birkinshaw 1998, Birkinshaw et al. 2005), may coincide with the entrepreneurial motivation of individuals and teams (Shane et al. 2003, Locke and Baum 2007). This will depend on personal career making aspects, multi-layered cultural dependencies and differences, and differing desires for independence and sources of rewards and recognition when compared to the situation of an independent entrepreneur.

Within the research conducted, the concept of entrepreneurial orientation (Miller 1983, Covin and Slevin 1986, Covin and Slevin 1989, Covin and Slevin 1991) and especially the aspect of risk – taking risk or being risk-averse (Yates and Stone 1992, Forlani and Mullins 2000) – proved to be a key concept. Strongly linked to it – but almost not reflected by identifiable integrated theory – was the aspect of decisiveness (in the sense of taking a decision and keeping to it), or more precisely, decisiveness missing in researched practice. As one finding, it seems advisable to integrate current theory involving aspects of risk, uncertainty, and motivational dimensions with subsequent levels of decision-taking. Within the corporate entrepreneurship domain, such an aggregation would also require the integration of aspects of autonomy, based on granted mandates to subsidiaries (Birkinshaw and Morrison 1995). Arguably, decisions taken are the “proof” of undertaking such endeavours whereas all the other cited aspects represent antecedents. It may also be easier to operationalize the aspect of decisiveness since it can be directly related to observable activities of decision making and subsequent implementation.

The integration of opportunity recognition (or creation), exploration and subsequent exploitation (Casson 1982, Venkataraman 1997, Hills et al. 1997, Alvarez and Barney 2007, Zahra 2008) into a process description of entrepreneurship, that also contains key aspects of relevant environmental factors (please see Figure 2-3 in section 2.1.14), proved highly valuable in the field research as an explanatory tool. Interestingly, no such aggregation into an explicit model was found in existing literature – although all ingredients are well established in current entrepreneurship research. Analysis of the primary and secondary data led to a perceivable pattern of two “clusters” of aspects, related either to the process elements of exploitation, or to creation, recognition and exploration. The “inward orientation” label was used in this study to summarise the prioritization of business exploitation, incremental innovations within existing product and market approaches, and the application of well defined processes allowing for low dependencies on person-specific characteristics of individual employees (thus creating “people independence” for the firm). “Outward orientation” in contrast would focus on the exploring of new businesses, look for disruptive innovations, be built around significantly entrepreneurial individuals and pay less attention to elaborate processes than to markets and market developments (please see Table 6-1 in section 6.4). Further development in theoretical models and respective field research could be done to create more knowledge on the potential tendency in large corporations towards the cited “inward orientation” (which may also be associated with “behaving bureaucratic”; Miller 1986, Kuratko et al. 1990, Miller 1996, Sathe 2003, Christensen 2005, Morris et al. 2008), and an “outward orientation” more closely depicting the behaviour of independent or start-up entrepreneurs.

As a last aspect of study findings potentially having an impact on the theoretical side of entrepreneurship research, identified interaction mechanisms among relevant factors for entrepreneurial behaviour could be further researched and elaborated towards specific network models and factor patterns of mutual dependency and influence. Aside from classical theoretical research focussed on one particular aspect (*ceteris paribus* in order to rule out the influence of other factors), such network models could help to understand multi-factor patterns “working together” in significantly influencing entrepreneurial orientation and action, and thus may inform corporate entrepreneurship practice in return. Developing such understandings is best undertaken – at this stage of theoretical development – through rich case studies. When considering potential implications towards existing theory and its further development, two “classes” of models may be relevant: general models trying to explain all key mechanisms in firm entrepreneurship or corporate venturing (Burgelman 1983b, Lumpkin and Dess 1996a, Birkinshaw and Hood 1998, Paterson and Brock 2002, Kuratko et al. 2004, Narayanan et al. 2009), and approaches focussing primarily on the aspect of involved employees in their roles as individuals, managers or agents (Jones and Butler 1992, Kuratko et al. 2005b, Monsen et al. 2007, Peris-Ortiz 2009).

This research primarily represents the firm internal aspects of such “general” models. Therefore, the elements found as critical for exerted entrepreneurial activity in the researched context were aggregated along the dimensions proposed in the model of Kuratko et al. (2004; please compare section 6.7 with Figure 6-1 and section 7.3 with Figure 7-3). Firm-inward orientation (1), short term orientation (2), risk avoidance (3) and missing recognition and rewards for entrepreneurial endeavour can be interpreted as a distinct pattern (or configuration; Miller 1986, Miller 1996) of interacting elements (5; please see Figure 7-4 for the resulting model). Because many of these factors are mutually reinforcing, they may represent a quite stable configuration over relevant elements in organisational antecedents and individual entrepreneurial behaviour, creating resistance to changes towards a more entrepreneurial set up either by influencing the firm strategy or creating inertia to respective strategic goals (6).

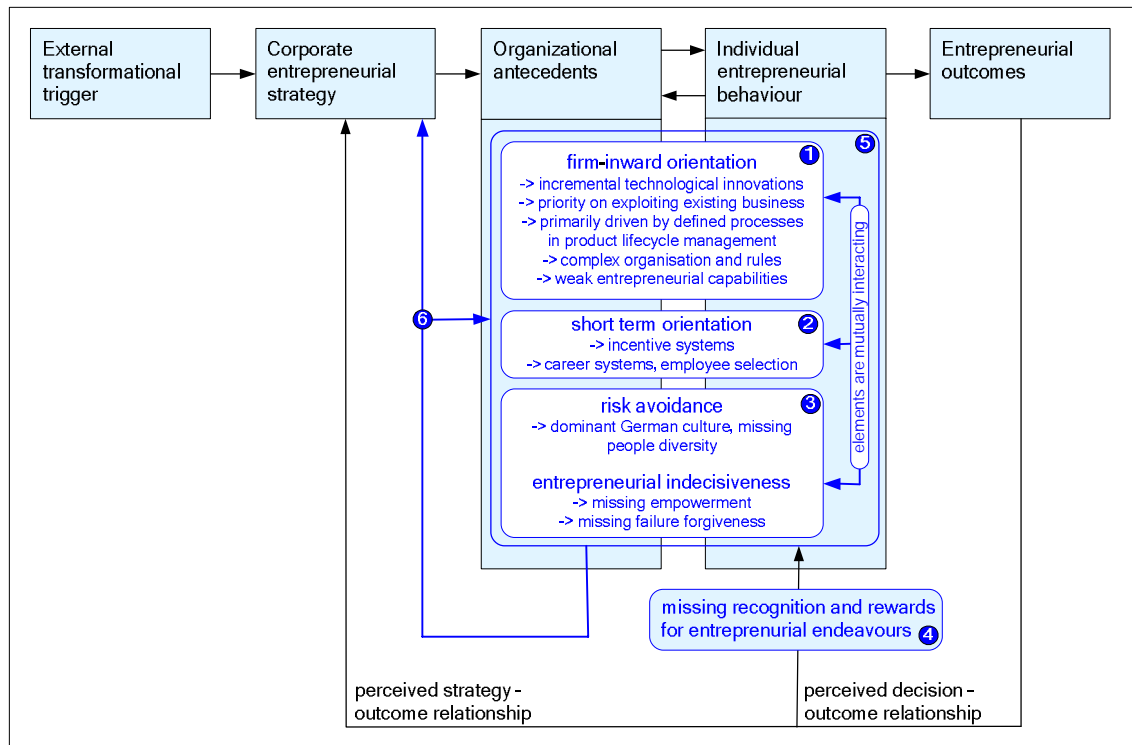


Figure 7-4 – Factor pattern in the context of the CE model of Kuratko et al. (2004)

As a second element indicated as relevant by the case findings, conglomerates like Siemens consist of a layered - or “divisional” - structure of entities (i.e. business units, divisions, sectors; Miller 1986, Miller 1996, Morris et al. 2008). Current models of corporate entrepreneurship, typically comprising relevant elements within “the firm” as a whole and from the environment outside (Guth and Ginsberg 1990, Covin and Slevin 1991, Lumpkin and Dess 1996a, Birkinshaw and Hood 1998, Paterson and Brock 2002, Kuratko et al. 2004, Narayanan et al. 2009), may have to be applied to each layer of the organisation defining its own strategy, reporting consolidated financial figures etc. (compare section 6.7.2 and Figure 6-2 for the respective discussion).

7.5 Summary

In this chapter, implications from the discussed findings were drawn towards firm practice at Siemens entities, to firm practice in general, and to relevant theory. Findings were clustered by the five organisational dimensions of vision, mission, and strategy; subsidiary roles; business processes; human resource management; and managerial practice to align concrete implications to firm practice in researched entities.

To inform firm practice in general, the critical elements identified in organisational antecedents and individual entrepreneurial behaviour and their mutual interactions were further consolidated on the basis of a model of corporate entrepreneurship (please see Figure 6-2 in section 6.7.1). As a key outcome, implications from the multi-factor pattern were drawn in relation to potential activities of fostering entrepreneurship in firms in general. Furthermore, the relevance and limitations of the implications arising from single factors towards firms in general were discussed.

Finally, implications towards current theory of corporate entrepreneurship were drawn in the fields of applicability, completeness and the potential further development of existing theory. As a key finding there, the emergent status of research on multi-factor patterns, considering recursive interactions and distinct factor configurations was identified. Furthermore, the identified multi-layered organisational structures in conglomerates would imply the need for further theory building by recursive applications of existing CE models.

8. Conclusions

8.1 Restatement: review of research carried out and its implications

“Modern companies must survive in a fast-paced, highly threatening, and increasingly global environment [requiring them] to continually redefine their markets, restructure their operations and modify their business models” (Morris et al. 2008). Siemens AG (founded in 1847) has experienced rather difficult times in recent years, undertaking many restructuring activities, including significant divestments and new acquisitions, to stay profitable. This study started in 2008 with an initial focus on investigating levers of firm profitability in the context of the integration of acquisitions – as subsequently undertaken in the pilot study. At the start of 2009, it was decided to focus the main study on entrepreneurial activity as one of the key levers towards long term firm profitability. By mid 2009, Siemens executive board announced a strategic initiative targeted at a very similar endeavour: the fostering of entrepreneurship within local Siemens entities. It was decided to take this aim as the main research question of the study, but to stay independent from activities started by the firm initiative.

The subsequent research was informed by a prior review of respective scholarly and practical literature in relevant domains of knowledge, and the preceding pilot study results. Based on the derived framework of dimensions found most relevant for fostering local entrepreneurship in large MNEs, the field research in the form of qualitative case studies subsequently focussed on the aspects of organisations and processes, long term orientation and granted mandates. Unfortunately, it transpired that no data access was possible to already selected cases outside my own Siemens sector organisation, thus the case repertoire was restricted. In total three cases were investigated, comprising the further analysis of the firm acquisition already explored in the pilot study to allow for longitudinal real-time case research, and two further retrospective case studies. To complement the acquisition case, an entrepreneurial endeavour taking place in the existing organisation and being sponsored by top management (the “SMART project”) and a business carve-out and divestment activity were added.

Case analysis undertaken was based on semi-structured interviews with 15 functional owners of key business processes in the cases as well as the overarching Siemens organisations, personal observations arising through my own role within Siemens, and the analysis of vast sources of secondary data. Not surprisingly, case data revealed more relevant dimensions for entrepreneurial behaviour and action than the preselected three aspects. The sections on findings

and subsequent discussion therefore report all facets potentially relevant to fostering entrepreneurship in local organisations. Since the research was focussed primarily on informing subsequent practice in the Siemens business entities, each investigation included the identification of existing initiatives or activities apt to support further actions to foster entrepreneurial behaviour. Out of the discussion on research findings – which revisited literature on existing theory in the context of study results – five key areas of implications towards practice evolved.

Implications for practice

First, the vision, mission and overall strategy obviously has to support entrepreneurial orientation to establish the reference frame for all other potential activities (Shane et al. 2003, Locke and Baum 2007). Despite some limitations towards understanding Siemens as one company, a shared entrepreneurial vision for the whole Siemens AG turned out to be sought by top management, beneficial to the firm operations, and required for a longer term survival. A more explicit mention of new business venturing in the corporate vision could be achieved by expanding the application of the existing (and somewhat new) pioneering element – closely representing entrepreneurial behaviour but currently only applied in the context of “technology driven markets” (Covin and Slevin 1990, Covin and Slevin 1991). Here, an expansion towards focussing on business innovations and opportunity recognition on the sales side (e.g. business approaches, go to market models) would lead to entire value chain re-engineering activities. Considering the target of fostering entrepreneurship especially in local organisations, the approach of having a global systems house in the researched division should be further developed, with a key focus on the implementation of the subsidiary certification allowing for more local entrepreneurial freedom of action (Birkinshaw and Morrison 1995, Bartlett and Ghoshal 2002).

As a second focus, this role of the subsidiaries as entrepreneurial entities should be strengthened by expanding the SMART initiative of Siemens top management – currently aimed only at global business mandates in lower end markets – towards all market segments, thus granting more comprehensive business mandates (Birkinshaw and Morrison 1995). By linking this to the subsidiary certification process to allow confirmation of required maturity in processes and sustainable profitability, the current headquarters–subsidiary constellation should be further transformed into a globally dispersed network of entities (Birkinshaw 1998). Respective subsidiary business mandates should be based on the further elaboration of the systems house

concept framework. Best certified branches could receive an expanded allowance of local new business venturing activities based on the reinvestment of local profits. Additionally, the working groups under way at divisional headquarters (focussed on specific business domains) should be systematised further and established on the level of the business unit Fire Safety. In conjunction, a yearly Fire Safety business conference could be established to foster best practice sharing on the sales side as well as providing a forum for discussing new venturing ideas. Implementations of any resulting successful business initiatives should be used for top+ award applications.

Third, the well established culture of having mature firm processes – applied in the exploitation phases of entrepreneurial opportunities currently – should be expanded towards entrepreneurial opportunity recognition (Birkinshaw and Gibson 2004, Raisch and Birkinshaw 2008, Raisch et al. 2009). To do so, the management process, thus far undefined, should incorporate activity definitions and respective templates comprising a systematic screening process for new business opportunities, subsequent business field analysis within these action fields, followed by an internal analysis of potential strengths and weaknesses, and a subsequent business plan proposal. Implementing a mandatory process of succeeding steps for making decisions would also help overcome currently reported weaknesses in taking clear and timely decisions.

Fourth, several factors point to the importance of human resource management in fostering entrepreneurship (Kuratko and Montagno 1999, Kuratko 2005, Hayton 2005). The current career making at Siemens based on the top talent program has to be more strongly related to long term achievements and substantial business domain knowledge. Current low levels of diversity in employee origins have to be reversed, and the appointment of talented people from competitive firms should be considered to bring in new business ideas and domain knowledge. The Siemens Leadership Framework definition should be adapted towards more emphasis on entrepreneurial notions and capabilities, and achievements of executives should be judged additionally by respective “filling levels” of “pipelines of new entrepreneurial endeavours”. Incentive systems applied to executives and further key functions should provide significantly more stimulation for pursuing entrepreneurial initiatives with extended time periods for judgment and the reduction of target setting that potentially hinders entrepreneurial behaviour (like short term profit maximisation). Further initiatives need to be developed for the slack time provided for employees to engage towards opportunity recognition and respective subsequent entrepreneurial initiatives (Fry 1987, Nohria and Gulati 1995, Menzel et al. 2007). Slack time should, for example, be especially budgeted for business developers, product portfolio

managers, and the members of the technical innovation team. Furthermore, coaching, mentoring, and constant competence evolution through training in the fields of opportunity recognition and evaluation should be implemented.

Finally, the entrepreneurial spirit in daily managerial practice is arguably also relevant to bring the vision and mission to life. Siemens's currently tight management controls focussed on how things are done should be changed to encourage more decisiveness in setting goals, thus applying more management by objectives. This would include the setting of clearer priorities and provide more focus, significantly enlarging the related competences of those responsible for achieving these goals. The further evolution of the systems house approach – and, especially, appropriate employee selection in promotion and appointments for key positions – has to be driven by recurring managerial decisions. In the longer run, headquarters executives should primarily decide on the comprehensiveness of granted mandates to subsidiaries (Birkinshaw and Morrison 1995, Bartlett and Ghoshal 2002).. An “open door policy” of executives for employees trying to share ideas on new business opportunities would signal such an entrepreneurial culture.

Implications for theory

First of all, the research carried out somewhat confirmed the notion that “[...] entrepreneurship has become a broad label under which a hodgepodge of research is housed” (Shane and Venkataraman 2000: 217). A vast set of domains of theory and referenced dimensions or perspectives seems to be involved – often lacking clear delineation, and with unclear levels of relevance and interaction (Grégoire et al. 2006, Phan et al. 2009). Particularly, a focus on the phenomenon of corporate entrepreneurship in a vast multinational entity seems to further increase complexity of theory. Aspects of subsidiary mandates and initiatives (Birkinshaw 1995, Birkinshaw et al. 1998) and understanding the multinational firm as a network of potentially highly independent entities go along with multi layered cultural dependencies and differences. The motivation of individuals and teams may be focussed on personal career making, with a significantly lower desire for independence and different sources of rewards and recognition when compared to the situation of an independent entrepreneur.

Looking at theoretical models in the domain of entrepreneurship, the concept of entrepreneurial orientation (Miller 1983, Covin and Slevin 1986, Covin and Slevin 1989, Covin and Slevin 1991) and especially the aspect of risk – taking risk or being risk-averse (Yates and Stone 1992,

Forlani and Mullins 2000) – proved to be an important aspect. Strongly linked to it – but not well reflected in the entrepreneurship literature and conceptual frameworks – was the aspect of decisiveness (in the sense of taking decisions and keeping to them), or more precisely, the absence of decisiveness as a factor considered in studies researching firm practice. It seems advisable to integrate current theory involving aspects of risk, uncertainty, and motivational dimensions with subsequent levels of decision-taking. Within the corporate entrepreneurship domain, this would also require the integration of aspects of autonomy, based on granted mandates, granted authority to decide, etc. The application of opportunity recognition (or creation), exploration, and subsequent exploitation to describing the entrepreneurial process, along with relevant environmental factors, proved highly valuable in the field research. However, no such full process depiction could be found in existing literature, thus denying the opportunity to integrate process driven exploitation with similar approaches in opportunity recognition.

From the results of the research, also, three specific multi-factor patterns emerged. As a first pattern, a dominant “firm-inward oriented” behaviour was found. It comprises the prioritization of business exploitation, with primarily incremental technical innovations within existing product and market approaches, and with the application of well defined processes allowing for low dependencies on the characteristics of individual employees (thus creating “people independence” for the firm). In contrast, a more entrepreneurial “outward orientation” would focus on the exploration of new businesses, looking for disruptive innovations, and building around significantly entrepreneurial individuals. Future research on what may be a systematic tendency in large corporations towards an “inward orientation” – which could also be associated with “behaving bureaucratic” (Miller 1986, Kuratko et al. 1990, Miller 1996, Sathe 2003, Christensen 2005, Morris et al. 2008) – and the “outward orientation” more closely depicting the behaviour of independent or start-up entrepreneurs could be helpful to further advance the understanding of CE.

As a second pattern, specific factors identified in this research on Siemens that hinder entrepreneurial activity were integrated within the CE model of Kuratko et al. (2004). As shown earlier in Figure 7-4, the resulting framework combines the effects of an inward orientation with short-term orientation as driven by incentive systems, employee selection and career programs, significant risk avoidance towards entrepreneurial endeavours and entrepreneurial indecisiveness. By adding somewhat neglected recognition and reward mechanisms for entrepreneurial endeavours, a new pattern (or configuration; Miller 1986, Miller 1996) emerges,

depicting an organisation potentially inert to defined entrepreneurial strategies and suffering poor business performance. Further research would be required to gain more knowledge on the potential existence and significance of a set of such specific factor patterns (or relationships between different aspects) representing discrete configurations of more or less entrepreneurial firms. Further research on network models of mutual dependency and influence, that help one to understand such multi-factor patterns “working together” to significantly influence entrepreneurial orientation and action, may in turn inform corporate entrepreneurship practice.

Finally, the case findings indicate that conglomerates like Siemens consist of a layered structure of “firms” as created by the MNE’s internal entities arranged in tiers (or “divisions”; Miller 1986, Miller 1996, Morris et al. 2008). Typically, current models of corporate entrepreneurship comprise simply an abstraction of “the firm” as a whole (Guth and Ginsberg 1990, Covin and Slevin 1991, Lumpkin and Dess 1996a, Birkinshaw and Hood 1998, Paterson and Brock 2002, Kuratko et al. 2004, Narayanan et al. 2009). The extension of these models would allow for further explanations on entrepreneurial inertia at the lowest layer of the conglomerate structure, perhaps by linking it to the research of similar structures in large governmental organisations, and especially investigating aspects of bureaucracy and the replication of principal-agent effects throughout the various organisational layers (Eisenhardt 1989a).

8.2 Contributions to knowledge

This study contributes primarily to practical knowledge of entrepreneurship in large multinationals. It represents a unique approach in combining the fields of involved processes and organisation with aspects of long term orientation and granted mandates to local entities in the specific situation of a global industrial business. A first main contribution lies in the identification of concrete activities most apt and relevant to foster entrepreneurship in the researched context of local Siemens entities. Five clusters of concrete activities, described above, were derived for implementation to foster entrepreneurship at Siemens Fire Safety. The implementation of the first activities started in January 2011.

As a further contribution to practical knowledge, the findings have been evaluated in relation to their applicability and relevance to firm environments in general, and potential limitations of such knowledge transfers (discussed below). The data from the field research also allowed for the identification of three specific multi-factor patterns linked to entrepreneurial activity. As a first pattern, a dominant “firm-inward oriented” was identified, based on a prioritization of business exploitation, on focussing primarily on incremental technical innovations within

existing product and market approaches, and on working along well defined processes. The expansion of this configuration by further elements identified as hindering entrepreneurial activity – a significant short-term orientation, risk avoidance towards entrepreneurial endeavours and missing recognition and reward mechanisms for entrepreneurial endeavours – led to a more comprehensive pattern creating inertia in entrepreneurial firm strategies as well as to the entrepreneurial outcomes. As the third pattern, the research revealed a layered structure of “firms” arranged in tiers when looking at conglomerates like Siemens, and the requirement to understand the interactions among these layers also.

As a first contribution to theory, research confirmed the notion that corporate entrepreneurship is the intersection of many disciplines rather than a settled discipline in itself. Looking at proposed theoretical models in the domain of entrepreneurship, the concept of entrepreneurial orientation was found to be highly applicable, greatly facilitating interpretations and explanations. Based on the findings of this study and the derived factor interactions, a further integration of EO with the aspects of decisiveness, motivational dimensions relevant for intrapreneurs in the established firm, and aspects of autonomy based on granted mandates and given competences would be very helpful to advance the field by better understanding such clusters of interacting factors.

Furthermore, the research led to the identification of three specific factor patterns relevant for corporate entrepreneurial activity. As a first pattern, a dominant “firm-inward oriented” behaviour was found, comprising the prioritization of business exploitation, doing primarily incremental technical innovations within existing product and market approaches, and working along well defined processes. When combining this inward orientation with discovered short-term orientation and significant risk avoidance towards entrepreneurial endeavours, a second and more comprehensive pattern emerged. Integrating this pattern into the CE model proposed by Kuratko et al. (2004), a mechanism of entrepreneurial inertia becomes apparent, potentially little affected by the entrepreneurial vision and strategy of the firm, and the entrepreneurial outcomes. When finally adding the third pattern for conglomerates like Siemens, the identified layered structure of “firms on top of firms”, so far no existing models are indicated as required to comprehensively describe the relevant phenomenon. Such a model could also serve for comparisons with complex governmental structures and reported effects of persistent bureaucratic behaviour.

Finally, the contribution to knowledge may also lie in the detailed case finding descriptions provided, and the full transparency of data analysis in the data displays provided in the appendix. The further development of indicated models of mutually interacting elements relevant for fostering entrepreneurship could leverage or draw on the case data here¹¹⁸, and would certainly contribute to knowledge relevant for firm practice in return.

8.3 Limitations of the research carried out

Previously, in Chapter 3, I discussed a number of caveats and research limitations related to the chosen research design, methodology and methods. For example, section 3.2 elaborates the nature of generalisability of case studies undertaken from a social constructionist epistemology and interpretive theoretical perspective. The findings of this study are thus generalizable to theoretical propositions or support ‘naturalistic generalisations’ to similar cases. They are not intended to be generalised to populations or universes of firms (Yin 1994/2003). Section 3.8 also outlined a number of limitations related to the specific methods employed, including questions over the representativeness of the views and entrepreneurial acumen of the limited number of respondents; biases that may emerge in the data collection, analysis and interpretation stages of the research due to personal, cultural or organisational factors; and potential conflicts of interest. Measures taken to ameliorate, if not eliminate, these limitations were also discussed. Below, I discuss some limitations of the completed research.

A first limitation to the research carried out is certainly the small number of factors chosen and researched as perceived most relevant in the given context, and informed by a conceptual framework derived beforehand from the literature review and the pilot study findings. As in many other disciplines, the current entrepreneurship research indicates a vast set of influential factors already; therefore a limited selection of researched aspects for a feasible study was unavoidable. To ease this restriction and overcome potentially important blind spots in research, further factors emerging in primary and secondary data were observed, reported, discussed and considered towards possibly relevant implications as well. Nevertheless, the study results comprise only a small part of the whole network of mechanisms influencing entrepreneurship in established firms.

¹¹⁸ However, the proliferation of the content of this study is restricted by its confidentiality, and would require the anonymisation of data or the signature of non-disclosure agreements etc.

Second, the research was focussed on informing managerial practice within my working environment at Siemens. As a potential limitation to the subsequent transferability of gained knowledge, it has to be acknowledged that the intended case study research in the two other Siemens sectors (energy and healthcare) could not take place due to access restrictions. So all three case studies actually undertaken represent an industrial environment focussed on investment goods (i.e. fire safety and security products and solutions) which are significantly affected by specific technical standards and required product approvals. As a first consequence, product life-cycles range from five to 15 years and products last up to 40 years at customer sites. A potential transfer of gained knowledge to fast-pacing industries like consumer goods would have to consider the impact of shorter time frames, other ‘go to market’ models and different end customer groups. Second, the given technical standards and required product approvals are significant external forces for the establishment of well defined and periodically audited processes. Businesses not having such requirements will have more freedom in choosing the comprehensiveness of firm processes, with respective secondary effects to entrepreneurial behaviour. Finally, the researched business unit Fire Safety is – despite its global business and it being run almost autonomously from the rest of Siemens – only a small part of the overall conglomerate. This further reduces the freedom of the business unit top management to decide in favour of entrepreneurial endeavours, especially on larger scale investments. The research may, therefore, represent an almost “critical” configuration for corporate entrepreneurship, with a maximised complexity of dependencies reducing freedom of decisions.

Last, and on the side of informing theory, the study results are limited to some feedback towards the applicability of current theory and especially models in the research process as carried out. Derived and reported models of factor clustering and interactions are far from representing solid theory, and may merely inform subsequent research endeavours focussing on such a context. Additionally, the reported original findings could be leveraged in further research by respective cross-case comparisons and subsequent theory building.

8.4 Potential future research

“[T]here is an important need for future research to show how firms develop effective structures and processes that spur CE” (Phan et al. 2009, summarizing Dess et al. 2003). This study tried to identify relevant activities apt to foster entrepreneurship in the researched firm context and its practice. The requested future research on how effective structures and processes spurring CE are developed could emerge, in part, from a subsequent study on the implementation of the proposed provisions here. More broadly, there seems to be no comprehensive theory on

corporate entrepreneurship providing a framework of factors apt for “implementations” of entrepreneurship in firm practice so far. However, to expect an integrated theory comprising all relevant facets involved in corporate entrepreneurship may prove far too ambitious when looking at the number and complexity of phenomenon. Nevertheless, key elements of CE could be further consolidated into a sort of “nomological net”¹¹⁹ to allow for a certain convergence in research carried out and a growing validity by more comparability of findings (Phan et al. 2009). Hereby, recently emerging studies on enabling factors for CE (Christensen 2005, Peris-Ortiz 2009), barriers (or obstacles) to entrepreneurship respectively (Morris and Kuratko 2002, Kuratko and Goldsby 2004), and specific triggering events (Morrison 2000) could be especially informative. Hereafter however, the focus will lie on specific elements and mechanisms as emerged in the research for further considerations towards implications for future research.

When understanding strategic corporate venturing as breaking up the “predetermined” life cycle of “an organisation to form, grow, mature, decline, and die” (Hoy 2006), there should be a more elaborated concept than simply separating firms into the two categories “new” and “established” as widely used today when either researching nascent entrepreneurship or CE. New corporate ventures could take all forms from fully independent “new firms” to firm expansions staying completely integrated. More specifically, even in the “established company” the form and relevance of entrepreneurial behaviour and activity may vary significantly. As identified in the research, one key driver to such variation could be the maturity of the specific industry. Respective studies seem to focus primarily on the innovation or invention side (Ahuja and Lampert 2001, Freeman and Engel 2007). Arguably, maturity effects may go far beyond, with entire industries in consolidation phases causing mergers and acquisitions as just one example.

Another unclear delineation seems to exist between the domains of innovation and entrepreneurship, thus asking for further development of respective theory. Is radical innovation, per definition, an element of entrepreneurship? Is incremental innovation already entrepreneurial? Is the acquisition of an IPR portfolio, therefore, an entrepreneurial action? Within this context, the hypothesis of having different patterns of entrepreneurship in large multinational firms should be investigated. Out of the research study here and respective discussions with key executives in Siemens, the notion of having a least four different types of

¹¹⁹ “Nomological” meaning “lawful” (derived from Greek). A nomological network aims at providing construct validity by the combination of a theoretical and an empirical framework, and the specification of its linkage (Cronbach, L. J. & P. E. Meehl (1955) Construct validity in psychological tests. *Psychological Bulletin*, 52, 281-302.)

CE in practice emerged: (1) the few “entrepreneurial” MNEs like 3M, Apple, Google etc. with their own entrepreneurial culture of new venturing and firm renewal in itself, (2) the vast majority of rather bureaucratic organisations like Siemens showing low levels of entrepreneurship, (3) very loosely coupled conglomerates like GE or TYCO (when looking at the overall company) which are representing holdings of firm investments rather than really integrated firms, and finally (4) large pharmaceuticals biotech firms acquiring disruptive innovation by respective start-ups on a regular basis. Applying a developed “nomological net”, as discussed before, to these different types of firms, could further reveal the key mechanisms and most successful configurations towards behaving entrepreneurially and provides a rich research agenda for the future.

Appendix A – Bibliography

- Abernathy, W. J. 1978. *The productivity dilemma*. Baltimore: Johns Hopkins University Press.
- Acs, Z. J. & D. B. Audretsch(eds.). 2005. *Handbook of Entrepreneurship Research. An Interdisciplinary Survey and Introduction*. Springer.
- Ahuja, G. & C. M. Lampert (2001) Entrepreneurship in the large corporation: a longitudinal study of how established firms create breakthrough inventions. *Strategic Management Journal*, 22, 521-543.
- Aldrich, H. E. & R. Waldinger (1990) Ethnicity and Entrepreneurship. *Annual Review of Sociology*, 16, 111.
- Alvarez, S. A. & J. B. Barney (2005) How Do Entrepreneurs Organize Firms Under Conditions of Uncertainty? *Journal of Management*, 31, 776.
- (2007) Discovery and creation: alternative theories of entrepreneurial action. *Strategic Entrepreneurship Journal*, 1, 11-26.
- Alvarez, S. A. & L. W. Busenitz (2001) The entrepreneurship of resource-based theory. *Journal of Management*, 27, 755-75.
- Andersson, L. M. (1996) Employee cynicism: An examination using a contract violation framework. *Human Relations*, 49, 1395.
- Andriopoulos, C. & M. W. Lewis (2009) Exploitation-Exploration Tensions and Organizational Ambidexterity: Managing Paradoxes of Innovation. *Organization Science*, 20, 696.
- Antonicic, B. & R. D. Hisrich (2001) Intrapreneurship: Construct refinement and cross-cultural validation. *Journal of Business Venturing*, 16, 495-527.
- (2003) Clarifying the intrapreneurship concept. *Journal of Small Business and Enterprise Development*, 10, 7.
- Audretsch, D., E. Lehmann & L. Plummer (2009) Agency and Governance in Strategic Entrepreneurship. *Entrepreneurship Theory and Practice*, 33, 149.
- Balkin, D. B., G. D. Markman & L. R. Gomez-Mejia (2000) Is CEO pay in high-technology firms related to innovation? *Academy of Management Journal*, 43, 1118.
- Barbato, R., R. DeMartino & P. Jacques (2009) The Entrepreneurial Motivations of Nonemployer Entrepreneurs. *New England Journal of Entrepreneurship*, 12, 33.
- Barney, J., M. Wright & D. Ketchen, J. Jr. (2001) The resource-based view of the firm: Ten years after 1991. *Journal of Management*, 27, 625.
- Barr, P. S., J. L. Stimpert & A. S. Huff (1992) Cognitive Change, Strategic Action, and Organizational Renewal. *Strategic Management Journal*, 13, 15.
- Bartlett, C. & S. Ghoshal. 2002. *Managing across borders: The transnational solution. (second edition)*. Harvard Business School Press.
- Bass, B. M. 1990. *Handbook of Leadership: A Survey of Theory and Research*. New York: Free Press.
- Baum, J. A. C., T. Calabrese & B. S. Silverman (2000) Don't go it alone: Alliance network composition and startups' performance in Canadian biotechnology. *Strategic Management Journal*, 21, 267.
- Baum, J. R., A. L. Edwin & G. S. Ken (2001) A multidimensional model of venture growth. *Academy of Management Journal*, 44, 292.

- Baum, J. R. & E. A. Locke (2004) The Relationship of Entrepreneurial Traits, Skill, and Motivation to Subsequent Venture Growth. *Journal of Applied Psychology*, 89, 587-598.
- Beauchamp, T. L. & N. E. Bowie. 2004. *Ethical Theory and Business, Seventh Edition*. New Jersey, USA: Prentice Hall.
- Benner, M. J. & M. L. Tushman (2003) Exploitation, exploration, and process management: The productivity dilemma revisited. *Academy of Management. The Academy of Management Review*, 28, 238.
- Bhave, M. P. (1994) A process model of entrepreneurial venture creation. *Journal of Business Venturing*, 9, 223-242.
- Birkinshaw, J. (1995) Encouraging entrepreneurial activity in multinational corporations. *Business Horizons*, 38, 32-8.
- (1997) Entrepreneurship in multinational corporations: The characteristics of subsidiary initiatives. *Strategic Management Journal*, 18, 207-229.
- (1998) Corporate entrepreneurship in network organizations:: How subsidiary initiative drives internal market efficiency. *European Management Journal*, 16, 355-364.
- (1999) The determinants and consequences of subsidiary initiative in multinational corporations. *Entrepreneurship Theory and Practice*, 24, 9-36.
- . 2000. *Entrepreneurship in the global firm*. London: Sage.
- (2001) Strategy and Management in MNE Subsidiaries. *Oxford Handbook of International Business*, 1, 380-402.
- Birkinshaw, J. & N. Fry (1998) Subsidiary initiatives to develop new markets. *Sloan Management Review*, 39, 51-61.
- Birkinshaw, J. & C. Gibson (2004) Building Ambidexterity Into an Organization. *MIT Sloan Management Review*, 45, 47.
- Birkinshaw, J., U. Holm, P. Thilenius & N. Arvidsson (2000) Consequences of perception gaps in the headquarters-subsidiary relationship. *International Business Review*, 9, 321-344.
- Birkinshaw, J. & N. Hood (1998) Multinational subsidiary evolution: Capability and charter change in foreign-owned subsidiary companies. *The Academy of Management Review*, 23, 773.
- (2000) Characteristics of foreign subsidiaries in industry clusters. *Journal of International Business Studies*, 31, 141.
- (2001) Unleash innovation in foreign subsidiaries. *Harvard Business Review*, 79, 131.
- Birkinshaw, J., N. Hood & S. Jonsson (1998) Building firm-specific advantages in multinational corporations: the role of subsidiary initiative. *Strategic Management Journal*, 19, 221.
- Birkinshaw, J., N. Hood & S. Young (2005) Subsidiary entrepreneurship, internal and external competitive forces, and subsidiary performance. *International Business Review*, 14, 227-248.
- Birkinshaw, J. & A. J. Morrison (1995) Configurations of strategy and structure in subsidiaries of multinational corporations. *Journal of International Business Studies*, 26, 729-53.
- Birkinshaw, J. & J. Ridderstråle (1999) Fighting the corporate immune system: a process study of subsidiary initiatives in multinational corporations. *International Business Review*, 8, 149-180.

- Birley, S. (1989) Female Entrepreneurs: Are They Really Any Different? *Journal of Small Business Management*, 27, 32.
- Block, Z. & O. A. Ornat (1987) Compensating Corporate Venture Managers. *Journal of Business Venturing*, 2, 41.
- Bommer, W. H., G. A. Rich & R. S. Rubin (2005) Changing attitudes about change: longitudinal effects of transformational leader behavior on employee cynicism about organizational change. *Journal of Organizational Behavior*, 26, 733.
- Boojihawon, D. K., P. Dimitratos & S. Young (2007) Characteristics and influences of multinational subsidiary entrepreneurial culture: The case of the advertising sector. *International Business Review*, 16, 549-572.
- Bostjan, A. (2007) Intrapreneurship: a comparative structural equation modeling study. *Industrial Management + Data Systems*, 107, 309.
- Bourgeois III, L. J. (1981) On the Measurement of Organizational Slack. *Academy of Management. The Academy of Management Review*, 6, 29.
- Brazeal, D., M. Schenkel & J. Azriel (2008) Awakening the Entrepreneurial Spirit: Exploring the Relationship Between Organizational Factors and Perceptions of Entrepreneurial Self-Efficacy and Desirability in a Corporate Setting. *New England Journal of Entrepreneurship*, 11, 17.
- Brazeal, D. V. (1993) Organizing for internally developed corporate ventures. *Journal of Business Venturing*, 8, 75.
- Brettel, M., A. Engelen & F. Heinemann (2009) New entrepreneurial ventures in a globalized world: The role of market orientation. *Journal of International Entrepreneurship*, 7, 88.
- Brockhaus, R. H., Sr. (1980) Risk Taking Propensity of Entrepreneurs. *Academy of Management Journal*, 23, 509.
- Brouwer, M. (2000) Entrepreneurship and Uncertainty: Innovation and Competition among the Many. *Small Business Economics*, 15, 149-160.
- Brown, T. E., P. Davidsson & J. Wiklund (2001) An operationalization of Stevenson's conceptualization of entrepreneurship as opportunity-based firm behavior. *Strategic Management Journal*, 22, 953.
- Buchanan, D., T. Claydon & M. Doyle (1999) Organisation development and change: The legacy of the nineties. *Human Resource Management Journal*, 9, 20.
- Burgelman, R. A. (1983a) Corporate Entrepreneurship and Strategic Management: Insights from a Process Study. *Management Science*, 29, 1349.
- (1983b) A Process Model of Internal Corporate Venturing in the Diversified Major Firm. *Administrative Science Quarterly*, 28, 223-244.
- (1984) Designs for Corporate Entrepreneurship in Established Firms. *California Management Review*, 26, 154.
- (1985a) Managing corporate entrepreneurship: New structures for implementing technological innovation. *Technology in Society*, 7, 91-103.
- (1985b) Managing the New Venture Division: Research Findings and Implications for Strategic Management. *Strategic Management Journal*, 6, 39.
- Burgers, J. H. & J. Jansen (2008) Organizational Ambidexterity and Corporate Entrepreneurship: The Differential Effects on Venturing, Innovation and Renewal Processes. *Babson College Entrepreneurship Research Conference (BCERC) 2008*.
- Busenitz, L. W. (1996) Research on entrepreneurial alertness. *Journal of Small Business Management*, 34, 35.

- Busenitz, L. W. & J. B. Barney (1997) Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making. *Journal of Business Venturing*, 12, 9-30.
- Busenitz, L. W., G. P. West, III, D. Shepherd, T. Nelson, G. N. Chandler & A. Zacharakis (2003) Entrepreneurship Research in Emergence: Past Trends and Future Directions. *Journal of Management*, 29, 285-308.
- Cantillon, R. 1756. *Essai sur la nature du commerce en general : traduit de l'anglais*. A Londres: Chez Fletcher Gyles.
- Cao, Q., E. Gedajlovic & H. Zhang (2009) Unpacking Organizational Ambidexterity: Dimensions, Contingencies, and Synergistic Effects. *Organization Science*, 20, 781.
- Carrier, C. (1994) Intrapreneurship in large firms and SMEs: A comparative study. *International Small Business Journal*, 12, 54.
- Carter, S. & W. Wilton (2006) Case section - don't blame the entrepreneur, blame the government: the centrality of the government in enterprise development. *Journal of Enterprising Culture*, 14, 65.
- Casson, M. 1982. *The Entrepreneur*. Totwa, NJ, US: Barnes and Noble Books.
- Chandler, G. N., C. Keller & D. W. Lyon (2000) Unraveling the determinants and consequences of an innovation-supportive organizational culture. *Entrepreneurship Theory and Practice*, 25, 59.
- Chandler, G. N. & D. W. Lyon (2001) Issues of research design and construct measurement in entrepreneurship research: The past decade. *Entrepreneurship Theory and Practice*, 25, 101.
- Chell, E. 2008. *The entrepreneurial personality : a social construction*. Hove, East Sussex; New York: Routledge.
- Chell, E. & K. Allman (2003) Mapping the motivations and intentions of technology orientated entrepreneurs. *R & D Management*, 33, 117.
- Choo, S. & M. Wong (2006) Entrepreneurial Intention: Triggers and Barriers to New Venture Creations in Singapore. *Singapore Management Review*, 28, 47.
- Chrisman, J. J., J. H. Chua & L. P. Steier (2002) The influence of national culture and family involvement on entrepreneurial perceptions and performance at the state level. *Entrepreneurship Theory and Practice*, 26, 113.
- Christensen, K. S. (2005) Enabling intrapreneurship: the case of a knowledge-intensive industrial company. *European Journal of Innovation Management*, 8, 305.
- Collins, C. J., P. J. Hanges & E. A. Locke (2004) The Relationship of Achievement Motivation to Entrepreneurial Behavior: A Meta-Analysis. *Human Performance*, 17, 95-117.
- Connell, J. & P. Waring (2002) The BOHICA syndrome: a symptom of cynicism towards change initiatives? *Strategic Change*, 11, 347.
- Corbett, A. C. & K. M. Hmieleski (2007) The Conflicting Cognitions of Corporate Entrepreneurs. *Entrepreneurship Theory and Practice*, 31, 103.
- Cornelius, B., H. Landström & O. Persson (2006) Entrepreneurial Studies: The Dynamic Research Front of a Developing Social Science. *Entrepreneurship Theory and Practice*, 30, 375.
- Coulson-Thomas, C. (2000) Developing a corporate learning strategy: creating intrapreneurs. *Strategic Change*, 9, 469.
- Coviello, N. E. & M. V. Jones (2004) Methodological issues in international entrepreneurship research. *Journal of Business Venturing*, 19, 485.

- Covin, J. G., K. M. Green & D. P. Slevin (2006) Strategic Process Effects on the Entrepreneurial Orientation - Sales Growth Rate Relationship. *Entrepreneurship Theory and Practice*, 30, 57-81.
- Covin, J. G. & M. P. Miles (1999) Corporate entrepreneurship and the pursuit of competitive advantage. *Entrepreneurship Theory and Practice*, 23, 47.
- Covin, J. G. & D. P. Slevin. 1986. *The development and testing of an organization-level entrepreneurship scale*. Wellesley, MA: Babson College.
- (1989) Strategic Management of Small Firms in Hostile and Benign Environments. *Strategic Management Journal*, 10, 75-87.
- (1990) New venture strategic posture, structure, and performance: An industry life cycle analysis. *Journal of Business Venturing*, 5, 123-135.
- (1991) A Conceptual Model of Entrepreneurship as Firm Behavior. *Entrepreneurship Theory and Practice*, 16, 7.
- Cromie, S. (1992) Research note: Assessing entrepreneurial inclinations. *International Small Business Journal*, 10, 66.
- Crotty, M. 1998. *The Foundation of Social Research*. London: SAGE Publications.
- Cutler, I. (2000) The cynical manager. *Management Learning*, 31, 295.
- Das, T. K. & B.-S. Teng (1997) Time and entrepreneurial risk behavior. *Entrepreneurship Theory and Practice*, 22, 69.
- Davidsson, P. & J. Wiklund (2001) Levels of analysis in entrepreneurship research: Current research practice and suggestions for the future. *Entrepreneurship Theory and Practice*, 25, 81.
- . 2007. Levels of Analysis in Entrepreneurship Research: Current Research Practice and Suggestions for the Future. In *Entrepreneurship*, 245-265.
- De Clercq, D. & M. Voronov (2009) Toward a Practice Perspective of Entrepreneurship: Entrepreneurial Legitimacy as Habitus. *International Small Business Journal*, 27, 395.
- Dean Jr., J., W. , P. Brandes & R. Dharwadkar (1998) Organizational cynicism. *Academy of Management. The Academy of Management Review*, 23, 341.
- Denton, L. & C. Campbell (2009) Dementors in our Midst: Managing the Highly Productive but Morale-Killing Employee. *Journal of Applied Management and Entrepreneurship*, 14, 3.
- Denzin, N. K. 1978. *Sociological Methods: a Sourcebook*. New York: McGraw-Hill.
- Dess, G. G., R. D. Ireland, S. A. Zahra, S. W. Floyd, J. J. Janney & P. J. Lane (2003) Emerging Issues in Corporate Entrepreneurship. *Journal of Management*, 29, 351-378.
- Dess, G. G., G. T. Lumpkin & J. G. Covin (1997) Entrepreneurial Strategy Making and Firm Performance: Tests of Contingency and Configurational Models. *Strategic Management Journal*, 18, 677-695.
- Dess, G. G., G. T. Lumpkin & J. E. McGee (1999) Linking corporate entrepreneurship to strategy, structure, and process: Suggested research directions. *Entrepreneurship Theory and Practice*, 23, 85.
- Dickson, P. & K. Weaver (2008) The role of the institutional environment in determining firm orientations towards entrepreneurial behavior. *International Entrepreneurship and Management Journal*, 4, 467-483.
- Dimitratos, P., I. Liouka & S. Young (2009) Regional location of multinational corporation subsidiaries and economic development contribution: Evidence from the UK. *Journal of World Business*, 44, 180-191.

- Dörrenbächer, C. & M. Geppert (2008) A micro-political perspective on subsidiary initiative-taking: Evidence from German-owned subsidiaries in France. *European Management Journal*, In Press, Corrected Proof.
- Douglas, E. J. & D. A. Shepherd (2000) Entrepreneurship as a utility maximizing response. *Journal of Business Venturing*, 15, 231.
- Doz, Y. & C. K. Prahalad (1984) Patterns of strategic control within multinational corporations. *Journal of International Business Studies (pre-1986)*, 15, 55.
- Drori, I., B. Honig & M. Wright (2009) Transnational Entrepreneurship: An Emergent Field of Study. *Entrepreneurship Theory and Practice*, 33, 1001-22.
- Drucker, P. 1954. *The practice of management*. New York: Harper and Row.
- Duncan, W. J., P. M. Ginter, A. C. Rucks & T. D. Jacobs (1988) Intrapreneurship And The Reinvention Of The Corporation. *Business Horizons*, 31, 16.
- Durand, D. & D. Shea (1974) Entrepreneurial activity as a function of achievement motivation and reinforcement control. *Journal of Psychology: Interdisciplinary and Applied*, 88, 57-63.
- Durand, D. E. (1974) Training and development of entrepreneurs: A comparison of motivation and skill approaches. *Journal of Small Business Management (pre-1986)*, 12, 23.
- Easterby-Smith, M., R. Thorpe & A. Lowe. 2002. *Management Research, An Introduction*. London: SAGE Publications.
- Ebner, M., C. Korunka, H. Frank & M. Lueger (2008) Intrapreneurship in der beruflichen Erstausbildung: Versuch einer begrifflichen Klärung und Operationalisierung**. *Zeitschrift für Personalforschung*, 22, 291.
- Eisenhardt, K. M. (1989a) Agency Theory: An Assessment And Review. *The Academy of Management Review*, 14, 57.
- (1989b) Building Theories From Case Study Research. *The Academy of Management Review*, 14, 532.
- (1989c) Making fast strategic decisions in high-velocity environments. *The Academy of Management Journal*, 32, 543-576.
- Eisenhardt, K. M. & M. E. Graebner (2007) Theory Building From Cases: Opportunities and Challenges. *Academy of Management Journal*, 50, 25.
- Eisenhardt, K. M. & J. A. Martin (2000) Dynamic capabilities: what are they? *Strategic Management Journal*, 21, 1105-1121.
- Enno, M., N. Peter, T. Murat & V. Gabriella (2002) Motivations and performance conditions for ethnic entrepreneurship. *Growth and Change*, 33, 238.
- Feldman, D. C. (2000) The Dilbert syndrome: How employee cynicism about ineffective management is changing the nature of careers in organizations. *The American Behavioral Scientist*, 43, 1286.
- Fitzsimmons, J. R., E. J. Douglas, B. Antoncic & R. D. Hisrich (2005) Intrapreneurship in Australian Firms. *Journal of the Australian and New Zealand Academy of Management*, 11, 17.
- Floyd, S. W. & P. J. Lane (2000) Strategizing throughout the organization: Management role conflict in strategic renewal. *Academy of Management. The Academy of Management Review*, 25, 154.
- Forbes, D. P. (2005) Are some entrepreneurs more overconfident than others? *Journal of Business Venturing*, 20, 623.
- Forlani, D. & J. W. Mullins (2000) Perceived risks and choices in entrepreneurs' new venture decisions. *Journal of Business Venturing*, 15, 305.

- Freeman, J. & J. S. Engel (2007) Models of Innovation: Startups and Mature Corporations. *California Management Review*, 50, 94.
- Fry, A. (1987) The Post-It Note: An Intrapreneurial Success. *S.A.M. Advanced Management Journal*, 52, 4.
- Gaglio, C. M. & J. A. Katz (2001) The Psychological Basis of Opportunity Identification: Entrepreneurial Alertness. *Small Business Economics*, 16, 95-111.
- Gamal, I. & G. Vaughan (2003) Ethnic Business Development: Toward a Theoretical Synthesis and Policy Framework. *Journal of Economic Issues*, 37, 1107.
- Garvin, D. A. (2004) What Every CEO Should Know About Creating New Businesses. *Harvard Business Review*, 82, 18.
- Gassmann, O. & M. M. Keupp (2007) The competitive advantage of early and rapidly internationalising SMEs in the biotechnology industry: A knowledge-based view. *Journal of World Business*, 42, 350.
- Gatewood, E. J., K. G. Shaver, J. B. Powers & W. B. Gartner (2002) Entrepreneurial expectancy, task effort, and performance. *Entrepreneurship Theory and Practice*, 27, 187.
- Geneen, H. (1985) Harold Geneen: Why Intrapreneurship Doesn't Work. *Venture*, 7, 46.
- Ghoshal, S. & C. A. Bartlett (1990) The Multinational Corporation as an Interorganizational Network. *The Academy of Management Review*, 15, 603-625.
- Gilbert, C. G. (2006) Change in the Presence of Residual Fit: Can Competing Frames Coexist? *Organization Science*, 17, 150-167.
- Glaser, B. G. & A. L. Strauss. 1967. *The discovery of grounded theory: Strategies for qualitative research*. Chicago: Aldine.
- Govindarajan, V. & C. Trimble (2005) Building Breakthrough Businesses Within Established Organizations. *Harvard Business Review*, 83, 58-68.
- Grégoire, D., D. Williams & P. Barr (2007) Measuring Entrepreneurial Alertness in the Field: Scale Development and Validation. *Entrepreneurship Research Conference. Frontiers of Entrepreneurship Research*.
- Grégoire, D. A., M. X. Noël, R. Déry & J.-P. Bécharde (2006) Is There Conceptual Convergence in Entrepreneurship Research? A Co-Citation Analysis of Frontiers of Entrepreneurship Research, 1981-2004. *Entrepreneurship Theory and Practice*, 30, 333.
- Guastello, S. J., M. L. Rieke, D. D. Guastello & S. W. Billings (1992) A study of cynicism, personality, and work values. *The Journal of Psychology*, 126, 37.
- Guba, E. G. & Y. S. Lincoln. 1989. *Fourth generation evaluation*. Newbury Park, CA: Sage.
- Gupta, V., D. Turban, S. Wasti & A. Sikdar (2009) The Role of Gender Stereotypes in Perceptions of Entrepreneurs and Intentions to Become an Entrepreneur. *Entrepreneurship Theory and Practice*, 33, 397.
- Guth, W. D. & A. Ginsberg (1990) Corporate Entrepreneurship. *Strategic Management Journal*, 11, 5.
- Hayek, F. A. (1985) Richard Cantillon. *Journal of Libertarian Studies*, 7, 217-247.
- Hayton, J. C. (2005) Promoting corporate entrepreneurship through human resource management practices: A review of empirical research. *Human Resource Management Review*, 15, 21-41.

- Heinonen, J. & J. Toivonen (2007) Approaching a deeper understanding of corporate entrepreneurship – focusing on co-evolutionary processes. *Journal of Enterprising Culture*, 15, 165.
- (2008) Corporate entrepreneurs or silent followers? *Leadership & Organization Development Journal*, 29, 583.
- Helfat, C. E. & M. Peteraf, A. (2003) The dynamic resource-based view: Capability lifecycles. *Strategic Management Journal*, 24, 997.
- Herold, D. M., N. Jayaraman & C. R. Narayanaswamy (2006) What is the Relationship between Organizational Slack and Innovation? *Journal of Managerial Issues*, 18, 372.
- Higgins, J. M. (1995) Innovate or evaporate: seven secrets of innovative corporati. *The Futurist*, 29, 42.
- Hills, G. E., G. T. Lumpkin & R. P. Singh. 1997. *Opportunity Recognition: Perceptions and Behaviors of Entrepreneurs*. Wellesley, MA: Babson College Press.
- Hisrich, R., J. Langan-Fox & S. Grant (2007) Entrepreneurship research and practice: A call to action for psychology. *American Psychologist*, 62, 575-589.
- Hisrich, R. D. (1990) Entrepreneurship/intrapreneurship. *American Psychologist*, 45, 209-222.
- Hisrich, R. D. & C. Brush (1984) The Woman Entrepreneur: Management Skills and Business Problems. *Journal of Small Business Management*, 22, 30.
- Hisrich, R. D. & M. P. Peters (1986) Establishing a New Business Venture Unit Within a Firm. *Journal of Business Venturing*, 1, 307.
- Hitt, M. A., R. D. Nixon, R. E. Hoskisson & R. Kochhar (1999) Corporate entrepreneurship and cross-functional fertilization: Activation, process and disintegration of a new product design team. *Entrepreneurship Theory and Practice*, 23, 145.
- Hofstede, G. H. 1980. *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations*. Beverly Hills, CA: Sage Publications.
- . 2001. *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations*. London: Sage Publications.
- Hoopes, D. G. & T. L. Madsen (2008) A capability-based view of competitive heterogeneity. *Industrial and Corporate Change*, 17, 393.
- Hornsby, J. S., D. F. Kuratko & R. V. Montagno (1999) Perception of internal factors for corporate entrepreneurship: A comparison of Canadian and U.S. managers. *Entrepreneurship Theory and Practice*, 24, 9.
- Hornsby, J. S., D. F. Kuratko & S. A. Zahra (2002) Middle managers' perception of the internal environment for corporate entrepreneurship: assessing a measurement scale. *Journal of Business Venturing*, 17, 253-273.
- Hornsby, J. S., D. W. Naffziger, D. F. Kuratko & R. V. Montagno (1993) An interactive model of the corporate entrepreneurship process. *Entrepreneurship Theory and Practice*, 17, 29.
- Hostager, T. J., T. C. Neil, R. L. Decker & R. D. Lorentz (1998) Seeing environmental opportunities: effects of intrapreneurial ability, efficacy, motivation and desirability. *Journal of Organizational Change Management*, 11, 11-25.
- Hoy, F. (2006) The Complicating Factor of Life Cycles in Corporate Venturing. *Entrepreneurship Theory and Practice*, 30, 831.

- Hutzschenreuter, T. & J. C. Voll (2008) Performance effects of "added cultural distance" in the path of international expansion: the case of German multinational enterprises. *Journal of International Business Studies*, 39, 53.
- Im, G. & A. Rai (2008) Knowledge Sharing Ambidexterity in Long-Term Interorganizational Relationships. *Management Science*, 54, 1281.
- Ireland, R., J. Covin & D. Kuratko (2009) Conceptualizing Corporate Entrepreneurship Strategy. *Entrepreneurship Theory and Practice*, 33, 19.
- Ireland, R. D., M. A. Hitt & D. G. Sirmon (2003) A Model of Strategic Entrepreneurship: The Construct and its Dimensions. *Journal of Management*, 29, 963-989.
- Ireland, R. D., D. F. Kuratko & M. H. Morris (2006) A health audit for corporate entrepreneurship: innovation at all levels: part II. *Journal of Business Strategy*, 27, 21-30.
- Ireland, R. D. & J. W. Webb (2007) A Cross-Disciplinary Exploration of Entrepreneurship Research. *Journal of Management*, 33, 891-927.
- Jansen, J., M. Tempelaar, F. van den Bosch & H. Volberda (2009) Structural Differentiation and Ambidexterity: The Mediating Role of Integration Mechanisms. *Organization Science*, 20, 797.
- Jantunen, A., K. Puumalainen, S. Saarenketo & K. Kyläheiko (2005) Entrepreneurial Orientation, Dynamic Capabilities and International Performance. *Journal of International Entrepreneurship*, 3, 223-243.
- Jennings, D. F. & S. L. Seaman (1994) High and low levels of organizational adaptation: An empirical analysis of strategy, structure, and performance. *Strategic Management Journal*, 15, 459.
- Jennings, M. M. 2006. *Business Ethics: Case Studies and Selected Readings, Fifth Edition*. Mason, Ohio, USA: Thomson Higher Education.
- Johnson, B. R. (1990) Toward a Multidimensional Model of Entrepreneurship: The Case of Achievement Motivation and the Entrepreneur. *Entrepreneurship Theory and Practice*, 14, 39.
- Johnson, J. L. & A. M. O'Leary-Kelly (2003) The effects of psychological contract breach and organizational cynicism: Not all social exchange violations are created equal. *Journal of Organizational Behavior*, 24, 627.
- Johnson, J. P., T. Lenartowicz & S. Apud (2006) Cross-cultural competence in international business: toward a definition and a model. *Journal of International Business Studies*, 37, 525-543.
- Jones, G. R. & J. E. Butler (1992) Managing Internal Corporate Entrepreneurship: An Agency Theory Perspective. *Journal of Management*, 18, 733.
- Kahn, W. A. (1990) Psychological Conditions of Personal Engagement and Disengagement at Work. *Academy of Management Journal*, 33, 692.
- Karra, N., P. Tracey & N. Phillips (2006) Altruism and Agency in the Family Firm: Exploring the Role of Family, Kinship, and Ethnicity. *Entrepreneurship Theory and Practice*, 30, 861.
- Keupp, M. & O. Gassmann (2009) The Past and the Future of International Entrepreneurship: A Review and Suggestions for Developing the Field. *Journal of Management*, 35, 600.
- Khandwalla, P. 1977. *The Design of Organizations*. New York: Harcourt Brace Jovanovich.

- Kirzner, I. M. 1973. *Competition and Entrepreneurship*. Chicago: University of Chicago Press.
- Knight, F. H. 1921. *Risk, Uncertainty, and Profit*. Boston, MA: Hart, Schaffner & Marx; Houghton Mifflin Co.
- Knight, G. A. (1997) Cross-cultural reliability and validity of a scale to measure firm entrepreneurial orientation. *Journal of Business Venturing*, 12, 213.
- Kodithuwakku, S. S. & P. Rosa (2002) The entrepreneurial process and economic success in a constrained environment. *Journal of Business Venturing*, 17, 431.
- Koen, P. A. (2000) Developing corporate intrapreneurs. *Engineering Management Journal*, 12, 3.
- Kogut, B. & U. Zander (1993) Knowledge of the Firm and the Evolutionary Theory of the Multinational Corporation. *Journal of International Business Studies* 24, 625-645.
- Kouriloff, M. (2000) Exploring perceptions of A Priori barriers to entrepreneurship: A multidisciplinary approach. *Entrepreneurship Theory and Practice*, 25, 59.
- Kuratko, D. & D. Audretsch (2009) Strategic Entrepreneurship: Exploring Different Perspectives of an Emerging Concept. *Entrepreneurship Theory and Practice*, 33, 1.
- Kuratko, D. F. (2005) The Emergence of Entrepreneurship Education: Development, Trends, and Challenges. *Entrepreneurship Theory and Practice*, 29, 577.
- Kuratko, D. F., J. G. Covin & R. P. Garrett (2009) Corporate venturing: Insights from actual performance. *Business Horizons*, 52, 459-467.
- Kuratko, D. F., J. S. Hornsby & J. W. Bishop (2005a) Managers' Corporate Entrepreneurial Actions and Job Satisfaction. *International Entrepreneurship and Management Journal*, 1, 275-291.
- Kuratko, D. F., J. S. Hornsby & M. G. Goldsby (2004) Sustaining corporate entrepreneurship: modelling perceived implementation and outcome comparisons at organizational and individual levels. *International Journal of Entrepreneurship and Innovation Management*, 5, 77.
- Kuratko, D. F., J. S. Hornsby & D. W. Naffziger (1997) An examination of owner's goals in sustaining entrepreneurship. *Journal of Small Business Management*, 35, 24.
- Kuratko, D. F., J. S. Hornsby, D. W. Naffziger & R. V. Montagno (1993) Implement entrepreneurial thinking in established organizations. *SAM Advanced Management Journal*, 58, 28-39.
- Kuratko, D. F., R. D. Ireland, J. G. Covin & J. S. Hornsby (2005b) A Model of Middle-Level Managers' Entrepreneurial Behavior. *Entrepreneurship Theory and Practice*, 29, 699.
- Kuratko, D. F., R. V. Montagno & J. S. Hornsby (1990) Developing an Intrapreneurial Assessment Instrument for an Effective Corporate Entrepreneurial Environment. *Strategic Management Journal (1986-1998)*, 11, 49.
- Kuratko, F. D. & M. G. Goldsby (2004) Corporate Entrepreneurs or Rogue Middle Managers? A Framework for Ethical Corporate Entrepreneurship. *Journal of Business Ethics*, 55, 13.
- Kuzel, A. J. 1992. Sampling in qualitative inquiry. In *Doing Qualitative Research. Second Edition*, ed. B. F. C. W. L. Miller, 31-44. Newbury Park, CA: Sage.
- Langowitz, N. & M. Minniti (2007) The Entrepreneurial Propensity of Women. *Entrepreneurship Theory and Practice*, 31, 341.

- Le Breton-Miller, I. & D. Miller (2006) Why Do Some Family Businesses Out-Compete? Governance, Long-Term Orientations, and Sustainable Capability. *Entrepreneurship Theory and Practice*, 30, 731.
- Lee, S. H. & C. Williams (2007) Dispersed entrepreneurship within multinational corporations: A community perspective. *Journal of World Business*, 42, 505-519.
- Leonard-Barton, D. (1990) A Dual Methodology for Case Studies: Synergistic Use of a Longitudinal Single Site with Replicated Multiple Sites. *Organization Science*, 1, 248-266.
- (1992) Core Capabilities and Core Rigidities: A Paradox in Managing New Product Development. *Strategic Management Journal*, 13, 111.
- Li, Y.-H., J.-W. Huang & M.-T. Tsai (2009) Entrepreneurial orientation and firm performance: The role of knowledge creation process. *Industrial Marketing Management*, 38, 440-449.
- Ling, Y., Z. Simsek, M. Lubatkin & J. Veiga (2008) Transformational Leadership's Role in Promoting Corporate Entrepreneurship: Examining the CEO-TMT Interface *Academy of Management Journal*, 51, 557.
- Locke, E. A. & J. R. Baum. 2007. Entrepreneurial Motivation. In *The psychology of entrepreneurship.*, 93-112. Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.
- Lounsbury, M. & M. A. Glynn (2001) Cultural entrepreneurship: Stories, legitimacy, and the acquisitions of resources. *Strategic Management Journal*, 22, 545.
- Low, M. B. (2001) The adolescence of entrepreneurship research: Specification of purpose. *Entrepreneurship Theory and Practice*, 25, 17.
- Lu, T.-E., L.-J. Chen & W.-R. Lee (2007) Subsidiary Initiatives in Subsidiary Role Changing-In the Case of the Bartlett and Ghoshal Typology. *Journal of American Academy of Business, Cambridge*, 11, 280-284.
- Lumpkin, G., K. Brigham & T. Moss (2010) Long-term orientation: Implications for the entrepreneurial orientation and performance of family businesses. *Entrepreneurship and Regional Development*, 22, 241.
- Lumpkin, G. T., Benjamin Bergmann & Lichtenstein (2005) The Role of Organizational Learning in the Opportunity-Recognition Process. *Entrepreneurship Theory and Practice*, 29, 451.
- Lumpkin, G. T., C. C. Cogliser & D. R. Schneider (2009) Understanding and Measuring Autonomy: An Entrepreneurial Orientation Perspective. *Entrepreneurship Theory and Practice*, 33, 47.
- Lumpkin, G. T. & G. G. Dess (1996a) Clarifying the Entrepreneurial Orientation Construct and Linking It to Performance. *The Academy of Management Review*, 21, 135-172.
- (1996b) Enriching the Entrepreneurial Orientation Construct-A Reply to "Entrepreneurial Orientation or Pioneer Advantage". *The Academy of Management Review*, 21, 605-607.
- . 1997. Proactiveness versus competitive aggressiveness: teasing apart key dimensions of an entrepreneurial orientation. In *Frontiers of Entrepreneurship Research*.
- (2001) Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle. *Journal of Business Venturing*, 16, 429-451.

- Mahnke, V., M. Venzin & S. A. Zahra (2007) Governing Entrepreneurial Opportunity Recognition in MNEs: Aligning Interests and Cognition Under Uncertainty. *Journal of Management Studies*, 44, 1278-1298.
- Malach-Pines, A., D. Dvir & O. Yafe-Yanai (2002) Entrepreneurs and managers: Similar yet different. *International Journal of Organizational Analysis*, 10, 172.
- Marvel, M. R., A. Griffin, J. Hebda & B. Vojak (2007) Examining the Technical Corporate Entrepreneurs' Motivation: Voices from the Field. *Entrepreneurship Theory and Practice*, 31, 753.
- McDougall, P. P. & B. M. Oviatt (2000) International entrepreneurship: The intersection of two research paths. *Academy of Management Journal*, 43, 902.
- McGaughey, S. L. (2007) Hidden ties in international new venturing: The case of portfolio entrepreneurship. *Journal of World Business*, 42, 307-321.
- Meili, E. 1990. *My Life with Cerberus*. Männedorf, Switzerland: Cerberus AG.
- Menzel, H. C., I. Aaltio & J. M. Ulijn (2007) On the way to creativity: Engineers as intrapreneurs in organizations. *Technovation*, 27, 732.
- Miles, M. B. & A. M. Huberman. 1994. *Qualitative Data Analysis (2nd edition)*. Thousand Oaks, CA: Sage.
- Miles, M. P. & J. G. Covin (2002) Exploring the practice of corporate venturing: Some common forms and their organizational implications. *Entrepreneurship Theory and Practice*, 26, 21-40.
- Miller, D. (1983) The Correlates of Entrepreneurship in Three Types of Firms. *Management Science*, 29, 770-791.
- (1986) Configurations of Strategy and Structure: Towards a Synthesis. *Strategic Management Journal*, 7, 233-249.
- (1996) Configurations Revisited. *Strategic Management Journal*, 17, 505-512.
- Miller, D. & P. Friesen. 1984. *Organizations: A Quantum View*. Englewood Cliffs, NJ: Prentice-Hall.
- Miller, D. & P. H. Friesen (1978) Archetypes of Strategy Formulation. *Management Science*, 24, 921.
- Miner, J. B. 1997. *A psychological typology of successful entrepreneurs*. Westport, CT: Quorum Books.
- (2000) Testing a psychological typology of entrepreneurship using business founders. *The Journal of Applied Behavioral Science*, 36, 43.
- Miner, J. B., N. R. Smith & J. S. Bracker (1994) Role of entrepreneurial task motivation in the growth of technologically innovative firms: Interpretations from follow-up data. *Journal of Applied Psychology*, 79, 627-630.
- Minniti, M. (2004) Entrepreneurial Alertness and Asymmetric Information in a Spin-Glass Model. *Journal of Business Venturing*, 19, 637.
- Mintzberg, H. (1996) Musings on management. *Harvard Business Review*, 74, 61.
- Mitchell, R. K., L. Busenitz, T. Lant, P. P. McDougall & e. al. (2004) The Distinctive and Inclusive Domain of Entrepreneurial Cognition Research. *Entrepreneurship Theory and Practice*, 28, 505.
- Mitchell, R. K., L. W. Busenitz, B. Bird, C. M. Gaglio, J. S. McMullen, E. A. Morse & J. B. Smith (2007) The Central Question in Entrepreneurial Cognition Research 2007. *Entrepreneurship Theory and Practice*, 31, 1.
- Mitchell, R. K., J. B. Smith, E. A. Morse, K. Seawright, W. & e. al. (2002) Are entrepreneurial cognitions universal? Assessing entrepreneurial cognitions across cultures. *Entrepreneurship Theory and Practice*, 26, 9.

- Mom, T. J. M., F. A. J. van den Bosch & H. W. Volberda (2009) Understanding Variation in Managers' Ambidexterity: Investigating Direct and Interaction Effects of Formal Structural and Personal Coordination Mechanisms. *Organization Science*, 20, 812.
- Monsen, E. W., T. Saxton & H. Patzelt (2007) Motivation and Participation in Corporate Entrepreneurship: The Moderating Effects of Risk, Effort, and Reward. *Babson College Entrepreneurship Research Conference (BCERC) 2007*.
- Morales-Gualdrón, S., A. Gutiérrez-Gracia & S. Roig Dobón (2009) The entrepreneurial motivation in academia: a multidimensional construct. *International Entrepreneurship and Management Journal*, 5, 301-317.
- Morgan, G. S., L. (1980) The case for qualitative research. *The Academy of Management Review*, 5, 491-500.
- Morosini, P., S. Shane & H. Singh (1998) National Cultural Distance and Cross-Border Acquisition Performance. *Journal of International Business Studies*, 29, 137.
- Morris, M., M. Schindehutte & J. Lesser (2002) Ethnic entrepreneurship: Do values matter? *New England Journal of Entrepreneurship*, 5, 35.
- Morris, M., J. van Vuuren, J. Cornwall & R. Scheepers (2009) Properties of balance: A pendulum effect in corporate entrepreneurship. *Business Horizons*, 52, 429.
- Morris, M. H. & F. F. Jones (1999) Entrepreneurship in established organizations: The case of the public sector. *Entrepreneurship Theory and Practice*, 24, 71.
- Morris, M. H. & D. F. Kuratko. 2002. *Corporate Entrepreneurship*. Mason, OH, US: South-Western College Publishers.
- Morris, M. H., D. F. Kuratko & J. G. Covin. 2008. *Corporate Entrepreneurship & Innovation*. Mason, OH, US: South Western Cengage Learning.
- Morrison, A. (2000) Entrepreneurship: what triggers it? *International Journal of Entrepreneurial Behaviour & Research*, 6, 59.
- Murphy, P., J. , J. Liao & H. Welsch, P. (2006) A conceptual history of entrepreneurial thought. *Journal of Management History*, 12, 12.
- Narayanan, V. K., Y. Yang & S. A. Zahra (2009) Corporate venturing and value creation: A review and proposed framework. *Research Policy*, 38, 58-76.
- Nelson, R. R. & S. G. Winter. 1982. *An evolutionary theory of economic change*. Cambridge, MA: Belknap Press.
- Newbert, S. L. (2003) Realizing the spirit and impact of Adam Smith's capitalism through entrepreneurship. *Journal of Business Ethics*, 46, 251.
- Nguyen, T. & J. Rose (2009) Building trust - Evidence from Vietnamese entrepreneurs. *Journal of Business Venturing*, 24, 165.
- Nicolaou, N., S. Shane, L. Cherkas, J. Hunkin & T. Spector (2008) Is the Tendency to Engage in Entrepreneurship Genetic? *Management Science*, 54, 167.
- Nohria, N. & R. Gulati (1995) What is the optimum amount of organizational slack? A study of the relationship between slack and innovation in multinational firms. *Academy of Management Journal*, 32.
- (1996) Is slack good or bad for innovation? *Academy of Management Journal*, 39, 1245.
- OECD & Leed Programme. 2009. Promoting entrepreneurship, employment and business competitiveness. OECD.

- OECD, L. Programme & B. f. V. B. u. Stadtentwicklung. 2009. Strengthening Entrepreneurship and Economic Development in East Germany: Lessons from Local Approaches. OECD.
- OECD, S. D. 2009. Measuring Entrepreneurship - A Collection of Indicators. ed. O.-E. E. I. Programme. OECD.
- Olivier, B. (2006) Peut-on manager les intrapreneurs ? *Revue Française de Gestion*, 32, 225.
- Ouchi, W. G. (1979) A Conceptual Framework for the Design of Organizational Control Mechanisms. *Management Science*, 25, 833.
- (1980) Markets, Bureaucracies, and Clans. *Administrative Science Quarterly*, 25, 129.
- Oviatt, B. M. & P. P. McDougall (1994) Toward a theory of international new ventures. *Journal of International Business Studies*, 25, 45.
- (2005) Defining International Entrepreneurship and Modeling the Speed of Internationalization. *Entrepreneurship Theory and Practice*, 29, 537.
- Paterson, S. L. & D. M. Brock (2002) The development of subsidiary-management research: review and theoretical analysis. *International Business Review*, 11, 139-163.
- Patton, M. Q. 2005. *Qualitative Research*. Hoboken, N.J.: John Wiley & Sons, Ltd.
- Peris-Ortiz, M. (2009) An analytical model for human resource management as an enabler of organizational renewal: a framework for corporate entrepreneurship. *International Entrepreneurship and Management Journal*, 5, 461-479.
- Perrone, V., A. Zaheer & B. McEvily (2003) Free to be trusted? Organizational constraints on trust in boundary spanners. *Organization Science*, 14, 422.
- Petrakis, P. (2007) The effects of risk and time on entrepreneurship. *International Entrepreneurship and Management Journal*, 3, 277-291.
- Petrakis, P. E. (2005) Risk Perception, Risk Propensity and Entrepreneurial Behaviour: The Greek Case. *Journal of American Academy of Business, Cambridge*, 7, 233.
- Phan, P., M. Wright, D. Ucbasaran & W. Tan (2009) Corporate entrepreneurship: Current research and future directions. *Journal of Business Venturing*, 24, 197.
- Pinchot, G. 2000. *Intrapreneuring*. New York: Harper & Row.
- Pinchot, G., III (1985) Introducing the 'Intrapreneur'. *IEEE Spectrum*, 22, 74.
- Porter, M. E. 1980. *Competitive Strategy: techniques for analyzing industries and competitors*. New York: The Free Press.
- . 1985. *Competitive Advantage: creating and sustaining superior performance*. New York: The Free Press.
- . 1998. *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. Free Press.
- Raisch, S. & J. Birkinshaw (2008) Organizational Ambidexterity: Antecedents, Outcomes, and Moderators. *Journal of Management*, 34, 375.
- Raisch, S., J. Birkinshaw, G. Probst & M. L. Tushman (2009) Organizational Ambidexterity: Balancing Exploitation and Exploration for Sustained Performance. *Organization Science*, 20, 685.
- Rauch, A., J. Wiklund, G. Lumpkin & M. Frese (2009) Entrepreneurial Orientation and Business Performance: An Assessment of Past Research and Suggestions for the Future. *Entrepreneurship Theory and Practice*, 33, 761.

- Reader, D. & D. Watkins (2006) The Social and Collaborative Nature of Entrepreneurship Scholarship: A Co-Citation and Perceptual Analysis. *Entrepreneurship Theory and Practice*, 30, 417-41.
- Reynierse, J. H. (1997) An MBTI model of entrepreneurship and bureaucracy: The psychological types of business entrepreneurs compared to business managers and executives. *Journal of Psychological Type*, 40, 3-19.
- Reynolds, P. D., N. M. Carter, W. B. Gartner & P. G. Greene (2004) The Prevalence of Nascent Entrepreneurs in the United States: Evidence from the Panel Study of Entrepreneurial Dynamics. *Small Business Economics*, 23, 263.
- Robinson, P. B., D. V. Stimpson, J. C. Huefner & H. K. Hunt (1991) An Attitude Approach to the Prediction of Entrepreneurship. *Entrepreneurship Theory and Practice*, 15, 13.
- Rosner, M. M. (1968) Economic Determinants of Organizational Innovation. *Administrative Science Quarterly*, 12, 614-625.
- Rothaermel, F. & W. Boeker (2008) Old technology meets new technology: complementarities, similarities, and alliance formation. *Strategic Management Journal*, 29, 47.
- Rothaermel, F. T. & D. L. Deeds (2004) Exploration and Exploitation Alliances in Biotechnology: A System of New Product Development. *Strategic Management Journal*, 25, 201.
- (2006) Alliance type, alliance experience and alliance management capability in high-technology ventures. *Journal of Business Venturing*, 21, 429.
- Rousseau, D. M., S. B. Sitkin, R. S. Burt & C. Camerer (1998) Not so different after all: A cross-discipline view of trust. *Academy of Management. The Academy of Management Review*, 23, 393.
- Sandberg, W. R. & C. W. Hofer (1987) Improving New Venture Performance: The Role of Strategy, Industry Structure, and the Entrepreneur. *Journal of Business Venturing*, 2, 5.
- Sassmannshausen, S. P. O., B. Kuhn & C. Volkmann. 2009. Measuring Entrepreneurial Management and Linking it with Performance: An Empirical Study in Australia. In *International Council for Small Business (ICSB). World Conference Proceedings*, 1-1. United States, Washington: International Council for Small business (ICSB).
- Sathe, V. 2003. *Corporate Entrepreneurship: Top Managers and New Business Creation*. Cambridge: Cambridge University Press.
- Schildt, H. A., S. A. Zahra & A. Sillanpää (2006) Scholarly Communities in Entrepreneurship Research: A Co-Citation Analysis. *Entrepreneurship Theory and Practice*, 30, 399.
- Schneider, M. & P. Teske (1992) Toward a Theory of the Political Entrepreneur: Evidence from Local Government. *The American Political Science Review*, 86, 737.
- Schumpeter, J. 1934. *The Theory of Economic Development*. Cambridge, MA: Harvard Business Press.
- Schwandt, T. A. 2000. Three epistemological stances for qualitative enquiry: Interpretivism, hermeneutics, and social constructionism. In *Handbook of Qualitative Research, 2nd edition*, eds. N. K. Denzin & Y. S. Lincoln. Thousand Oaks, CA: Sage.

- Shane, S. 2003. *A General Theory of Entrepreneurship: The Individual-Opportunity Nexus*. Cheltenham UK: Edward Elgar Publishing.
- Shane, S., E. A. Locke & C. J. Collins (2003) Entrepreneurial motivation. *Human Resource Management Review*, 13, 257-279.
- Shane, S. & S. Venkataraman (2000) The promise of entrepreneurship as a field of research. *The Academy of Management Review*, 25, 217-226.
- Sharfman, M. P., G. Wolf, R. B. Chase & D. A. Tansik (1988) Antecedents Of Organizational Slack. *Academy of Management. The Academy of Management Review*, 13, 601.
- Sharma, P. & J. J. Chrisman (1999) Toward a reconciliation of the definitional issues in the field of corporate entrepreneurship. *Entrepreneurship Theory and Practice*, 23, 11-27.
- Shepherd, D. A., J. G. Covin & D. F. Kuratko (2009) Project failure from corporate entrepreneurship: Managing the grief process. *Journal of Business Venturing*, 24, 588-600.
- Shleifer, A. & R. W. Vishny (1997) A survey of corporate governance. *The Journal of Finance*, 52, 737.
- Sitkin, S. B. & L. R. Weingart (1995) Determinants of risky decision-making behavior: A test of the mediating role of risk perceptions and propensity. *Academy of Management Journal*, 38, 1573.
- Smith, A. 1759. *The theory of moral sentiments*. London: Printed for A. Miller.
- Smith, A., W. Strahan & T. Cadell. 1776. *An inquiry into the nature and causes of the wealth of nations*. London: Printed for W. Strahan and T. Cadell.
- Stake, R. E. 1995. *The Art of Case Study Research*. London: SAGE Publications.
- Stanley, D. J., J. P. Meyer & L. Topolnytsky (2005) Employee Cynicism and Resistance to Organizational Change. *Journal of Business and Psychology*, 19, 429.
- Stevenson, H. H. & D. E. Gumpert (1985) The heart of entrepreneurship. *Harvard Business Review*, 63, 85-94.
- Stevenson, H. H. & J. C. Jarillo (1990) A paradigm of entrepreneurship: entrepreneurial management. *Strategic Management Journal (1986-1998)*, 11, 17-17.
- Suchman, M. C. (1995) Managing legitimacy: Strategic and institutional approaches. *The Academy of Management Review*, 20, 571.
- Sykes, H. B. (1992) Incentive Compensation for Corporate Venture Personnel. *Journal of Business Venturing*, 7, 253.
- Sykes, H. B. & Z. Block (1989) Corporate Venturing Obstacles: Sources and Solutions. *Journal of Business Venturing*, 4, 159.
- Tan, J. & M. W. Peng (2003) Organizational slack and firm performance during economic transitions: Two studies from an emerging economy. *Strategic Management Journal*, 24, 1249.
- Taylor, A. & C. E. Helfat (2009) Organizational Linkages for Surviving Technological Change: Complementary Assets, Middle Management, and Ambidexterity. *Organization Science*, 20, 718.
- Teece, D. J. (2007) Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28, 1319-1350.
- Teece, D. J., G. Pisano & A. Shuen (1997) Dynamic capabilities and strategic management. *Strategic Management Journal*, 18, 509-533.

- Thornhill, S. & R. E. White (2007) Strategic purity: A multi-industry evaluation of pure vs. hybrid business strategies. *Strategic Management Journal*, 28, 553.
- Tsang, E. W. K. (1996) In search of legitimacy: The private entrepreneur in China. *Entrepreneurship Theory and Practice*, 21, 21.
- Tsui-Auch, L. S. (2005) Unpacking Regional Ethnicity and the Strength of Ties in Shaping Ethnic Entrepreneurship. *Organization Studies*, 26, 1189.
- Tuchman, B. W. 1981. *Practicing History: Selected Essays*. New York: Knopf.
- Urbany, J. E. (2005) Inspiration and Cynicism in Values Statements. *Journal of Business Ethics*, 62, 169.
- Useem, M. (2010) Four Lessons in Adaptive Leadership. *Harvard Business Review*, 5.
- Velasquez, M. G. 2002. *Business Ethics: Concepts and Cases, 5th Edition*. New Jersey: Prentice Hall.
- Venkataraman, S. 1997. The Distinctive Domain of Entrepreneurship Research: An Editor's Perspective. In *Advances in Entrepreneurship, Firm Emergence, and Growth.*, ed. J. K. a. J. B. (eds), 119-38. Greenwich, CT: JAI Press.
- Venkataraman, N. (1989) Strategic Orientation of Business Enterprises: The Construct, Dimensionality, and Measurement. *Management Science*, 35, 942-962.
- Verbeke, A., J. J. Chrisman & W. Yuan (2007) A Note on Strategic Renewal and Corporate Venturing in the Subsidiaries of Multinational Enterprises. *Entrepreneurship Theory and Practice*, 31, 585.
- Wagner, J. & R. Sternberg (2004) Start-up activities, individual characteristics, and the regional milieu: Lessons for entrepreneurship support policies from German micro data. *The Annals of Regional Science*, 38, 219.
- Wanous, J. P., A. E. Reichers & J. T. Austin (2000) Cynicism about organizational change. *Group & Organization Management*, 25, 132.
- Watt, J. & C. Piotrowski (2008) Organizational Change Cynicism: A Review of the Literature and Intervention Strategies. *Organization Development Journal*, 26, 23.
- Welch, C. & R. Piekkari (2006) Crossing language boundaries: Qualitative interviewing in international business. *Management International Review*, 46, 417-437.
- Welter, F. & D. Smallbone (2006) Exploring the Role of Trust in Entrepreneurial Activity. *Entrepreneurship Theory and Practice*, 30, 465.
- West, G. P. (2007) Collective Cognition: When Entrepreneurial Teams, Not Individuals, Make Decisions. *Entrepreneurship Theory and Practice*, 31, 77.
- Westhead, P., D. Ucbasaran & M. Wright (2005) Decisions, Actions, and Performance: Do Novice, Serial, and Portfolio Entrepreneurs Differ? *Journal of Small Business Management*, 43, 393.
- Westhead, P. & M. Wright (1998) Novice, portfolio, and serial founders: Are they different? *Journal of Business Venturing*, 13, 173.
- Wiklund, J. (1999) The sustainability of the entrepreneurial orientation--performance relationship. *Entrepreneurship Theory and Practice*, 24, 37.
- Winter, S. G. (2003) Understanding dynamic capabilities. *Strategic Management Journal*, 24, 991.
- Woolard, E. S., Jr. (1995) Remarks on entrepreneurship: Speed, flexibility, decisiveness. *Executive Speeches*, 9, 21.
- Wright, M., K. Robbie & C. Ennew (1997) Serial entrepreneurs. *British Journal of Management*, 8, 251.

- Wu, C., M. J. Neubert & X. Yi (2007) Transformational Leadership, Cohesion Perceptions, and Employee Cynicism About Organizational Change: The Mediating Role of Justice Perceptions. *The Journal of Applied Behavioral Science*, 43, 327.
- Yahya, S. & B. Kingsman (2002) Modelling a multi-objective allocation problem in a government sponsored entrepreneur development programme. *European Journal of Operational Research*, 136, 430.
- Yates, F. & E. R. Stone. 1992. The risk construct. In *Risk-taking behaviour*, ed. Y. F., 1-26. New York: Wiley.
- Yin, R. K. 1994/2003. *Case Study Research. Design and Methods*. Newbury Park, CA: Sage.
- Young, S. & A. T. Tavares (2004) Centralization and autonomy: back to the future. *International Business Review*, 13, 215-237.
- Zahra, S. A. (1991) Predictors and Financial Outcomes of Corporate Entrepreneurship: An Exploratory Study. *Journal of Business Venturing*, 6, 259.
- (1993a) A conceptual model of entrepreneurship as firm behavior: A critique and extension. *Entrepreneurship Theory and Practice*, 17, 5.
- (1993b) Environment, corporate entrepreneurship, and financial performance: A taxonomic approach. *Journal of Business Venturing*, 8, 319-340.
- (2008) The virtuous cycle of discovery and creation of entrepreneurial opportunities. *Strategic Entrepreneurship Journal*, 2, 243-257.
- Zahra, S. A. & J. G. Covin (1995) Contextual influences on the corporate entrepreneurship-performance relationship: A longitudinal analysis. *Journal of Business Venturing*, 10, 43-58.
- Zahra, S. A. & D. M. Garvis (2000) International corporate entrepreneurship and firm performance: The moderating effect of international environmental hostility. *Journal of Business Venturing*, 15, 469-492.
- Zahra, S. A. & J. Hayton (2008) The effect of international venturing on firm performance: The moderating influence of absorptive capacity. *Journal of Business Venturing*, 23, 195.
- Zahra, S. A., J. C. Hayton & C. Salvato (2004) Entrepreneurship in Family vs. Non-Family Firms: A Resource-Based Analysis of the Effect of Organizational Culture. *Entrepreneurship Theory and Practice*, 28, 363.
- Zahra, S. A., D. F. Jennings & D. F. Kuratko (1999a) The antecedents and consequences of firm-level entrepreneurship: The state of the field. *Entrepreneurship Theory and Practice*, 24, 45.
- Zahra, S. A., A. P. Nielsen & W. C. Bogner (1999b) Corporate entrepreneurship, knowledge, and competence development. *Entrepreneurship Theory and Practice*, 23, 169.
- Zahra, S. A., R. I. Yavuz & D. Ucbasaran (2006) How Much Do You Trust Me? The Dark Side of Relational Trust in New Business Creation in Established Companies. *Entrepreneurship Theory and Practice*, 30, 541.
- Zalta, E. N. 2008. Business Ethics. In *Stanford Encyclopedia of Philosophy*, ed. S. University, <http://plato.stanford.edu/entries/ethics-business/>. Stanford University, <http://plato.stanford.edu/>.
- Zimmerman, M. A. & G. J. Zeitz (2002) Beyond survival: Achieving new venture growth by building legitimacy. *Academy of Management. The Academy of Management Review*, 27, 414.

Zollo, M. & S. G. Winter (2002) Deliberate learning and the evolution of dynamic capabilities. *Organization Science*, 13, 339.

Appendix B – Summary of the Pilot Study

In the climate of crisis and change at Siemens in recent years as described in section 1.1, the acquisition of Shinwha Electronics in South Korea by the Siemens business unit Fire Safety in 2008 was perceived by management and staff as a one of the most visible elements of trying to develop new venturing and thus overcome the firm stagnation. However, the comparable previous acquisitions of Bewator Ltd. (Sweden, 2005) by Fire Safety, and iMetrex Ltd. (India and Ireland, 2007) by the business unit Security Solutions (please compare sections 3.3.4 and 4.7) were judged by the divisional and business unit managements subsequently as failures. Setting out for a doctoral thesis in the context of this acquisition integration, it quickly became clear that there was a fundamental paradox of ever increasing transaction volumes in international mergers and acquisition despite a constantly reported majority of these transactions failing to deliver added value.

The literature review informing the subsequent pilot study research was therefore focussed on the specific configuration of multinationals buying small-to-medium sized enterprises, and the relevant factors for delivering firm performance out of such acquisitions later. This focus was further narrowed down to new subsidiaries created out of such takeovers. By taking this subsidiary entity as the core perspective, the approach followed the most recent research streams in international business, moving away from the model of centralised controls in multinationals toward the concept of a globally dispersed network of subsidiaries understood as quasi-autonomous entities (Paterson and Brock 2002:140). Reviewed literature confirmed a significant influence of the subsidiary management on delivered firm performance, with the most relevant factors being the entrepreneurial orientation - as judged by the so far most used dimensions of innovation, risk-taking and proactiveness, and aspects of legitimacy of the management as perceived within the whole firm organisation. Next, and following the aggregations in reviewed literature, the aspects of subsidiary role, its degree of granted autonomy, taken subsidiary initiatives, and the amount and quality of subsidiary resources were added. The further facets of interactions, rivalry and cross-cultural challenges with headquarters and other subsidiaries were complemented by potential challenges in institutional duality caused by diverging charters from headquarters and its global strategies, and the local government. The resulting subsidiary performance was proposed to be measured by sales growth, market share and profitability (following Lumpkin and Dess 1996a) by considering management perception as well as archival data (Rauch et al. 2009).

So the framework defined the initial key areas of investigation, and thus the initial set of factors to be evaluated for their interactions and influence toward firm performance. The researched case of the Shinwha acquisition itself was seen at the start as a typical case when considering the integration development at that time, but developed rather into a critical case because of changes in the external economic environment (i.e. the global financial crisis) and the emerging significant difficulties toward delivering firm performance as planned in the second year after the deal closure (please compare section 4.5). The case study could be considered to a certain extent as real-time longitudinal for I had been engaged in this acquisition since the respective Siemens due diligence phase II started in July 2007. It was not intended to explicitly test theory focussed on proposed mechanisms or interactions; the aim lay in gaining a deeper understanding, primarily by using so far proposed structural concepts, perspectives, base categories and influencing factors (i.e. to think in subsidiary roles, subsidiary initiatives, apply the dimensions of EO etc.) as the foundation of analysis, and adding further aspects as clearly identifiable. Thus, the case study was of explorative and descriptive character, and based on semi structured interviews, recorded observations and the analysis of linked archival data.

As the first main study result, key factors and their interactions were identified and aggregated into a respective network. Keeping the subsidiary as the main focus, the derived network elements were clustered into four groups to provide a further insight into found mechanisms. First and taken as the representation of the “operational engine” of the subsidiary, firm resources were found to primarily drive the performance, thus creating (or destroying) resources in return. Second, achieved performance was identified as the key driver for subsidiary management legitimacy as perceived by the management of the overall headquarters, and the level of granted autonomy and given freedom for defining and expanding the subsidiary role. Subsidiary management legitimacy itself proved to be a main prerequisite towards granted autonomy, with a higher level of autonomy allowing for role expansions. These factors were interpreted as the “boundaries” within which the subsidiary operated, with the evolving role definition for the subsidiary driving the obtained and deployed resources. Third, entrepreneurial orientation was found to be a key driver for initiatives to develop the subsidiary, and was influenced by the given boundaries in return; thus representing the “strategic drive” of the subsidiary. And finally, the aspects of global strategic context and strategic fit, cultural fit, relationships to headquarters and other subsidiaries, rivalries within the company and external market aspects were aggregated as the relevant “outer world” with which the subsidiary interacts.

As the second main outcome, the pilot study confirmed a significant and mutual relationship between entrepreneurial orientation and resulting firm performance in the researched context. This finding was confirmed by a very recent Meta study on EO and business performance research: “[w]hile there are conceptual arguments in favour of EO affecting performance, the other causal direction is also possible: Better performance might also stimulate EO” (Rauch et al. 2009). Furthermore, the pilot study revealed major differences in entrepreneurial orientation between the employees in the bought company, and researched Siemens organisations.

Appendix C – Derivation of Relevant Fields of Involved Literature

This appendix describes the steps carried out prior to the literature review as reported in sections 2.2 and 2.3.

C.1 – Initial map of relevant aspects

The given research question for the starting point of the literature review can be divided into three key aspects: (1) entrepreneurship, (2) the local Siemens organisation context, and (3) how to strengthen entrepreneurship in these locations (please see Figure 8-1 for the aggregation of all cited elements and graphical representations indicating the different types of elements). Regarding entrepreneurship (1), different entrepreneurial constructs - corporate entrepreneurship (CE), international entrepreneurship (IE), or intrapreneurship - need to be analysed for their appropriateness for the research (a). Definitions and operationalisations of underlying basic elements of entrepreneurship (b) or proposed aggregations like entrepreneurial orientation (EO, c) are required for carrying out the research and contain the concept of innovation (d), being also one aspect of involved competitive advantage (e). Which elements of the predominant literature of entrepreneurship in the context of starting-up companies could be transposed into the environment of a well established MNE (f) also needs to be investigated.

The aspect of local Siemens organisations (2) leads to the application of business theory in general (g, theory of the firm etc.), relevant organisational theories (h), the aspects of culture and cultural differences (i), and involved rivalry (k) as found relevant by the pilot study findings. Within the business context, resources and thus the application of a resource based view (l) could be considered as well as underlying approaches like international network theories (m; seeing MNEs primarily as a network of highly independent SMEs), and systems theory (n) where applicable, with a specific focus on the concept of loosely coupled systems (o) when considering the MNE – subsidiary configurations. A pre-selection of the locations for the subsequent field research (p) may be influential to the research design, and the Siemens action plan for strengthening local entrepreneurship (q; please compare section 3.3.3) may be informative regarding concepts and definition as well as expected results and respective KPIs.

To strengthen entrepreneurship (3), the pilot study results indicated the relevance of aspects of capabilities (r), trust and legitimacy (s), long term orientation (t), autonomy and respective granted roles (u, including the aspect of transfer pricing, v). These elements shall be augmented

with further concepts found relevant in the literature review (w). Existing studies from the OECD (e.g. OECD 2009, OECD and Leed Programme 2009, OECD et al. 2009; x) about how to strengthen local entrepreneurship (as identified within the pilot study reviews) may further inform about applicable theory and fields of proposed activities.

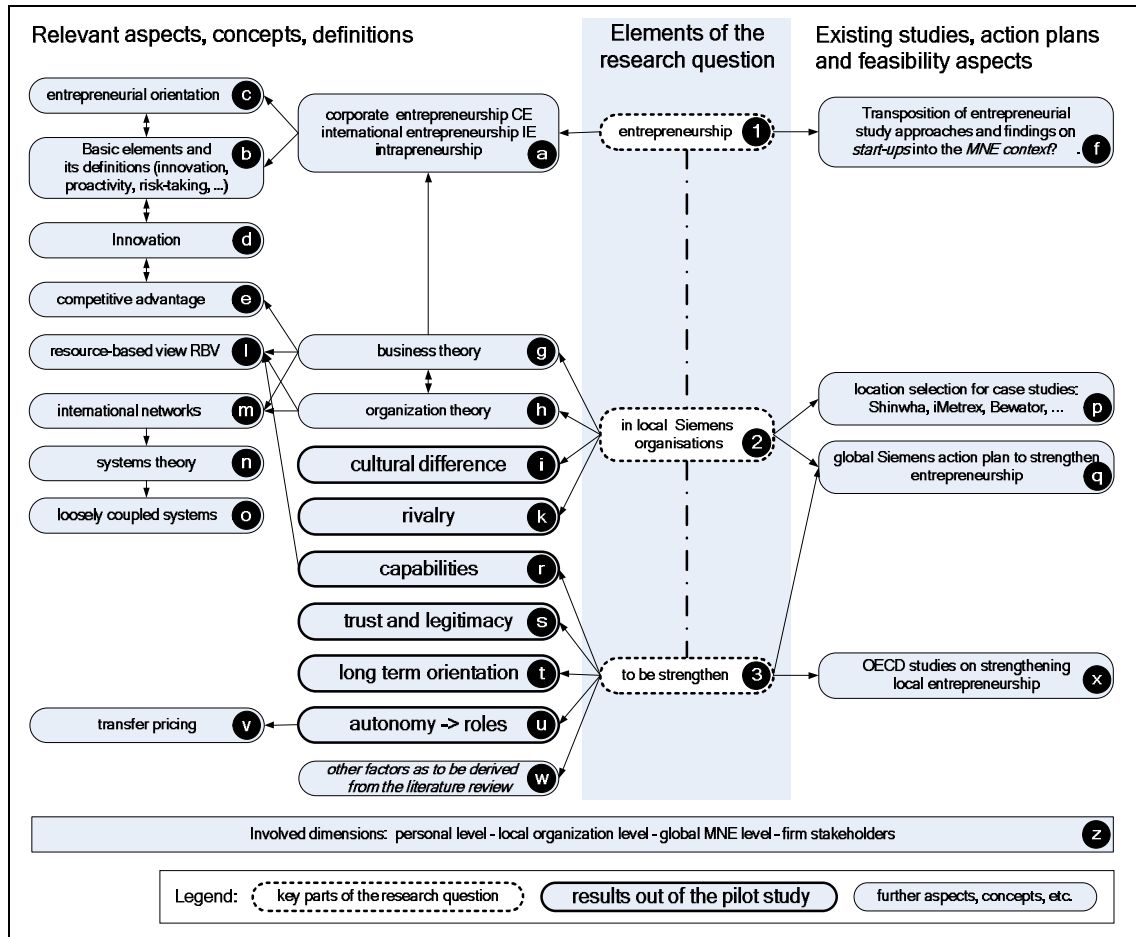


Figure 8-1 – Initial map of elements found relevant for further investigation

To narrow down the number of aspects investigated toward a set of dimensions applicable to the limited scope of a DBA research, elements potentially fostering or hindering entrepreneurial activity were taken as a key focus. Different levels of significance (to individuals, local organisations, global organisation and firm stakeholders; z) may exist in the identified factors which need to be considered in parallel.

C.2 - An organising framework of main research streams

“Rather than explaining and predicting a unique set of empirical phenomena, entrepreneurship has become a broad label under which a hodgepodge of research is housed” (Shane and Venkataraman 2000: 217). Indeed, the term seems to cover a vast set of researched topics and

applied perspectives today, facing an ongoing discussion if it already represents an independent research domain, with attempts to define the term itself but still waiting for the acceptance of a mutually shared definition (Busenitz et al. 2003, Cornelius et al. 2006, Grégoire et al. 2006, Reader and Watkins 2006, Schildt et al. 2006). Since no generally accepted “landscape” of the entrepreneurial research domain could be identified, a synthesis of aspects out of main theories, current main research streams in entrepreneurship, and the further analysis of respective research papers shall provide a certain completeness of factors - the basis for further narrowing down the scope towards core dimensions important for answering the research question.

Several authors have used “levels” or “layers” as a first organising dimension of researched entrepreneurial aspects (Davidsson and Wiklund 2001, Keupp and Gassmann 2009). As a synthesis of these approaches, five distinct levels of entrepreneurial facets shall be used here: personal (A1), personal and firm (A2) for aggregated aspects existing on both levels, firm (A3), respective specific industry (A4) the firm is operating in, and the external environment with all further stakeholder aspects (A5, please see Figure 8-2 for the complete aggregation).

One of the historically most popular entrepreneurial dimensions is the entrepreneur as a person. Many person specific aspects given by nature or environment have been researched: the effects of a family background of entrepreneurs (Chrisman, Chua and Steier 2002, Karra, Tracey and Phillips 2006), of gender – and especially female entrepreneurship (Hisrich and Brush 1984, Birley 1989, Gatewood et al. 2002, Langowitz and Minniti 2007, Gupta et al. 2009), various ethnic specifics often labelled as ethnic entrepreneurship (Aldrich and Waldinger 1990, Enno et al. 2002, Morris, Schindehutte and Lesser 2002, Gamal and Vaughan 2003, Tsui-Auch 2005), entrepreneurial predisposition by genetics (Nicolaou et al. 2008), or the influences of

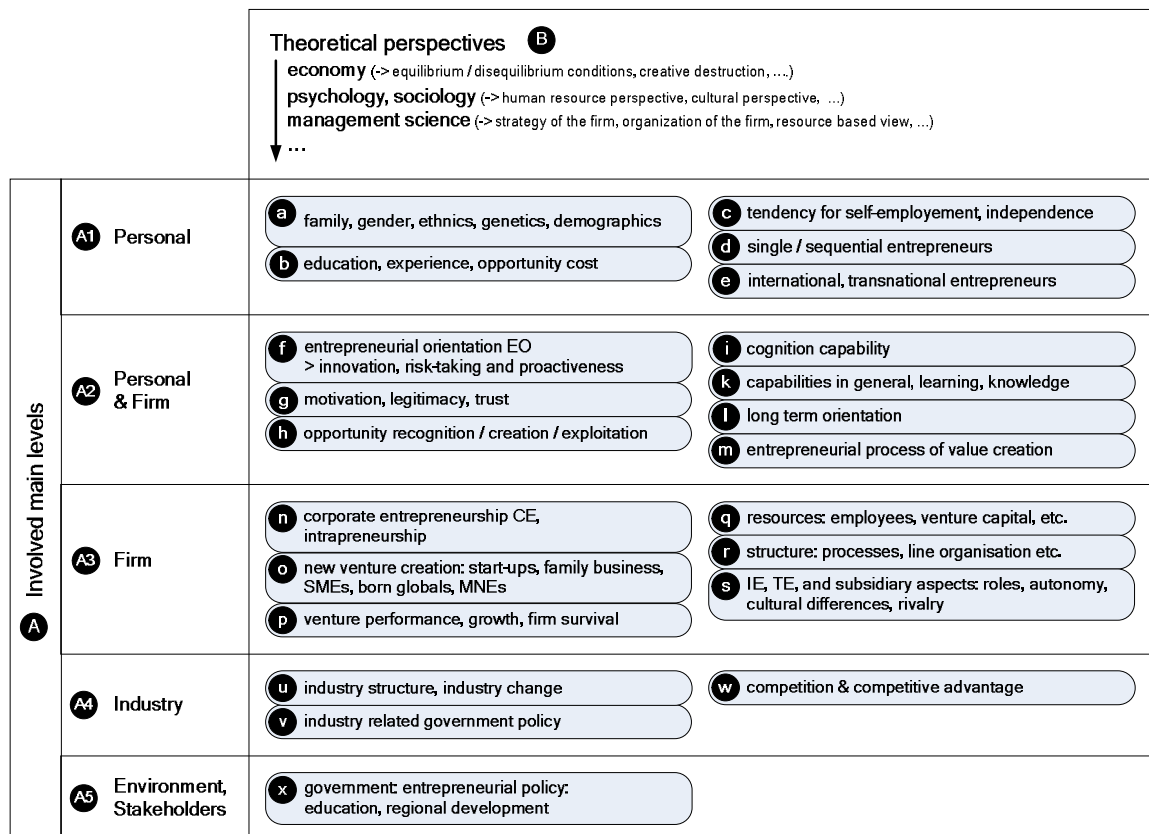


Figure 8-2 – Organising framework of entrepreneurial research streams and perspectives

demographic changes (please compare factor a in Figure 2.3; and Robinson et al. 1991, Wagner and Sternberg 2004, Reynolds et al. 2004). Aspects related to individual development like education, business experience, or the opportunity cost to pursue entrepreneurial activities in a given situation in life form a next field of research (b; Shane 2003: 61ff). Successful entrepreneurial acting represents self-employment when setting up one’s own venture, and leads to economic independence in the case of success (c; Cantillon 1756, Casson 1982:115, Hayek 1985); this becomes one of the identified key motives to pursue entrepreneurial ventures. Some entrepreneurs set up only one venture in their life whereas others act as serial (or habitual) entrepreneurs (d; Wright, Robbie and Ennew 1997, Westhead and Wright 1998, Westhead, Ucbasaran and Wright 2005). In a recently emerging research field, the specific aspect of entrepreneurs acting internationally (or trans-nationally when changing locations over time, thus building a growing international network of relations) are investigated (e; Oviatt and McDougall 1994, Keupp and Gassmann 2009, Drori et al. 2009).

In recent decades, the aspects of the “entrepreneurial” firm became increasingly important, and aspects initially seen as being part of the acting entrepreneurs are now researched in the context

of firm organisations and respective teams as well. The most popular conceptualisation of entrepreneurial behaviour is entrepreneurial orientation EO (f), initially focussed on the factors innovation, risk-taking and proactiveness (Miller 1983: 771) and used in more than 100 studies so far for characterizing individuals as well as teams and firms (Rauch et al. 2009). The influence of psychological factors (g) like motivation (Durand and Shea 1974, Johnson 1990, Chell and Allman 2003, Barbato, DeMartino and Jacques 2009), legitimacy (Tsang 1996, Lounsbury and Glynn 2001, McGaughey 2007, De Clercq and Voronov 2009) and trust (Welter and Smallbone 2006, Zahra et al. 2006, Nguyen and Rose 2009) on entrepreneurial behaviour has been researched as well. Entrepreneurial opportunities have to be recognized or created, and subsequently exploited – a key field of entrepreneurial research and still hotly disputed (h; Hills et al. 1997, Alvarez and Barney 2007, Zahra 2008). To recognize entrepreneurial opportunities, cognition capabilities are required to obtain and combine information (i; Mitchell et al. 2007). This opens up the research field of required capabilities in general (Teece et al. 1997, Teece 2007), respective learning (Lumpkin et al. 2005) and created knowledge (k; Zahra et al. 1999b, Li et al. 2009). Many of these aspects are linked to an involved long term orientation (LTO, l) on a personal and a firm level. To represent all these aspects and thus the whole chain of value creation, entrepreneurial process models are increasingly used (aspect m; Hornsby et al. 1993, Bhave 1994, Dess et al. 1999, Kodithuwakku and Rosa 2002).

In many cases, entrepreneurs create new ventures to exploit a business opportunity. This can be a one-person start-up, the beginning of a family business, a small- to medium sized enterprise (SME), a company initially planned to act globally (popular as the “born global” approach) or even the rise of a huge multi-national entity (MNE) like Google or Microsoft (o). New ventures can also be pursued by already established firms, usually contextualized as corporate entrepreneurship CE or corporate venturing CV, and may just represent new combinations of existing resources (n; Burgelman 1984, Dess et al. 2003). These firm perspectives of entrepreneurship are used to analyse whole sets of basic elements (like EO, aspects of resources, capabilities, processes and organisation etc.; please compare Phan et al. 2009); and some authors are using more specific labels for their perspectives like strategic entrepreneurship (Ireland, Hitt and Sirmon 2003, Kuratko and Audretsch 2009).

Coming back to the more basic elements of the analysis on the company level, created firm performance fostering further growth - or even just allowing the firm survival – is increasingly researched in the context of entrepreneurship (p; Lumpkin and Dess 1996a, Wiklund 1999, Rauch et al. 2009). To exploit new business opportunities, resources like employees, venture

capital and intellectual capital are required (q), and firm structures such as processes and line organisations are applied (r). On the aspect of international (or transnational) entrepreneurs (please compare aspect e), there are several articles proposing the concept of international entrepreneurship as "[...] the discovery, enactment, evaluation and exploitation of opportunities across national borders to create future goods and services" (Oviatt and McDougall 2005), or transnational entrepreneurship focussing on "[...] entrepreneurial activities that are carried out in a cross-national context, and initiated by actors who are embedded in at least two different social and economic arenas" (s; Drori et al. 2009: 1001). This international perspective is also linked to a growing research on the subsidiaries of MNEs, their role and levels of autonomy (Birkinshaw 1997, Birkinshaw and Hood 2000, Birkinshaw 2000, Birkinshaw 2001, Birkinshaw et al. 2005), involved cultural differences, and rivalry among subsidiaries and headquarters on internal and external markets.

Most firms operate in a specific industrial context, and thus are influenced – and may influence – a respective industry change (u; Sandberg and Hofer 1987, Covin and Slevin 1989) which also can be driven by governmental actions (v). The firms are exposed to the competition within this industry and are seeking competitive advantage within this context by entrepreneurial and other activities (w).

Key research streams investigating further stakeholders are focussed on the government (x), and its entrepreneurial policies (Yahya and Kingsman 2002, Schneider and Teske 1992, Carter and Wilton 2006) especially dealing with entrepreneurial education (Kuratko 2005) and regional development programs (Wagner and Sternberg 2004, OECD et al. 2009).

And as a last major aspect, the phenomenon of entrepreneurship has to be seen in a macro-economical context reaching back to ancient and medieval times. Activities in farming, warfare, architecture and engineering could be defined as entrepreneurial arbitrage between asymmetries in demand and supply, based on an emerging inter-industry competition and an “entrepreneur” primarily dealing with economic risk, uncertainty and innovation (Murphy, Liao and Welsch 2006). The subsequent development of the conceptualisation of entrepreneurship was an integral part of emerging economic theories, starting in the 1770s and comprising the aspects of divided labour and thus entrepreneurial action as creating new combinations of resources, i.e. entrepreneurial innovation as destruction of old and construction of new resource

configurations; respective market models of equilibrium and disequilibrium¹²⁰, and the effects of imperfect or randomly dispersed knowledge (Shane 2003, Murphy et al. 2006). In a third main phase starting in the 1970s, entrepreneurial research became more multidisciplinary especially by including concepts of sociology and psychology. These scientific perspectives (B) are currently considered in various combinations as foundations of most of the specific entrepreneurship research streams depicted so far. Interestingly, there are also calls within these disciplines to focus more specifically on entrepreneurship aspects (Hisrich et al. 2007) in return. These fundamental aspects may therefore be relevant for the study here in two ways: to be reverted to when necessary to clarify theoretical aspects more fundamentally, and to search for studies, within these research domains, which specifically address entrepreneurship (as happens quite frequently in the domain of human resource management).

¹²⁰ General equilibrium theory is part of neoclassical economics and can be seen as rooted in the work of the French economist Léon Walras (1834-1910). As one key aspect, it postulates that market prices represent the equilibrium of supply and demand for a specific good (compare: O'Sullivan, B., Sheffrin, S. M. (2002) *Economics: Principles in Action*. Upper Saddle River, New Jersey: Pearson Prentice Hall).

Appendix D – List of collected data

The following list is focussed on the most important data sources which have been used for the main study. In fact, many more observations did take place, and a vast amount of secondary data has been processed in my normal work as “fully embedded” manager at Siemens Fire Safety.

1. Primary Data: Interviews

Interviewee ¹²¹	Date of interview	total duration
Sandra Amrein	9.11.2010	1:08
Paul Amstutz	15.7.2010	1:52
Michael Bosshard	3.9.2010	1:57
Connie Clark	8.8.2010	1:38
John Davis	1.10.2010	1:15
Ralf Dunkel	21.10.2010	1:29
Karl Huber	29.7.2010	1:11
HW Kim	9.8.2010	1:24
Hans Meier	20.8.2010	1:34
Peter Mueller	21.7.2010	0:50
Robert Schmid	19.8.2010	2:10
Keiko Safaia	4.10.2010	1:24
Jan Traber	15.9.2010	2:35
Yao Wang	7.9.2010	1:43
SH Wong	3.11.2010	1:34
	total	23:44
	on average per interview	1:35

2. Secondary Data

Sources outside Siemens

- <http://www.guardian.co.uk/business/2008/dec/16/regulation-siemens-scandal-bribery>
- <http://www.transparency.org>
- <http://www.businessweek.com/chapter/degeus.htm>
- http://money.cnn.com/magazines/fortune/global500/2010/full_list/

Siemens company sources

- Siemens Annual Reports 2005-2010
- “Siemens RPS New Collaboration Model NCM Guideline / Version 7 / Sep 2010”, 170 pages
- ESPC legislation: http://www.siemensgovt.com/cap_oep_energys_savings.html
- Patents: http://www.siemens.com/innovation/en/about_fande/patents/index.htm

¹²¹ All names of interviewees changed for confidentiality reasons.

Vision, Mission, top+ and 3i

- http://www.siemens.com/annual/10/_pdf/Siemens_AR2010_Vision.pdf,
- <http://www.siemens.com/about/en/index/values.htm>
- http://www.siemens.com/about/de/index/vision_strategie/one_siemens.htm
- http://www.siemens.com/annual/10/_pdf/Siemens_AR2010_OneSiemens.pdf
- http://www.siemens.com/innovation/pool/en/2010/innovation_at_siemens_10_08_2010_e.pdf
- https://workspace.sbt.siemens.com/content/00000013/intranet_docs/GC%20Documents/division_presentation_bt_en.pdf
- Quality: https://intra.industry.siemens.com/bt/global/en/process_quality/procedures/
- top+ Program:
 - https://intra1.siemens.com/topplus/en/about_topplus/index.htm
 - [topplus_overview_presentation_6_2010.ppt](#)
- 3i Program: continuous_improvement_channel/3iprogram_chan/Pages/3iprogram.aspx

Product Lifecycle Management

- Siemens Process House definitions: <https://processworld.siemens.com>

Human Resource Management

- Siemens Leadership Framework: <https://intranet.siemens.com/slf>
- Competences: https://workspace.sbt.siemens.com/content/00001002/lcm/competence_excellence
- Capabilities: https://intranet.cd.siemens.com/cms/cde/en/default/Documents/SLF_CapabilitiesInDetail_en.pdf

Shinwha Acquisition and Integration

- Shinwha due diligence report – phase II, 2007-09-21, PPT presentation, 50 pages
- Siemens Shinwha investment proposals
 - 07-12-13 I-Vorlage_SERENA_FinalFinal.pdf , 6 pages, confidential
 - 070426 – P-Vorlage.tif, 1 Page, confidential
- Siemens Industry press release: Shinwha acquisition, 2008-04-01, 3 pages
- Shinwha acquisition, summary for internal communication, 2008-04, 6 pages
- Shinwha post merger integration employee survey, 2008-12-29, PPT, 35 pages
- Shinwha post merger integration employee survey, 2009-05-13, PPT, 36 pages
- Action plan as a reaction to the second employee survey, 2009-06-28, internal email
- Periodical data on Shinwha:
 - weekly minutes of PLM integration telephone conference
 - monthly financial reports
 - quarterly integration reports

SMART Project

- Siemens SMART initiative: https://intra1.siemens.com/topplus/en/about_topplus/smart_initiative.htm
- Organization Benchmarking - key findings_V5.pdf
- SMART project reports:
 - I BT FS M3 Headquarters Definition – 2010-06-16.pdf
 - I BT FS M3 – 3 Steps approach – 2010-07.pdf
 - I BT FS M3 HQ Guiding Principles – V19 of 2010-06-15.pdf

SP new setup

- Intranet publications on Bewator / iMetrex / takeovers (various locations)

➤ Letter of John Davis – Head of SP – 2010-07-08.pdf

Appendix E – Interview Partners and their relevant roles

Name	(acronym)	Relevant Role
Paul Amstutz ¹²²	PA	Regional Coordinator for Korea and China
Sandra Amrein	SW	Management Development at Siemens Corporate Office Munich
Daniel Bertok	SB	CEO till end of September 2009 and main initiator of the acquisition of Shinwha Electronics Lt.
Michael Bosshard	MB	Regional Manager for Korea in FS HQ since March 2010
Connie Clark	CC	Global Head of Product Line Intrusion (before SP new setup)
John Davis	JD	CEO of SP new setup
Ralf Dunkel	RD	Global Project Lead SMART Initiative, at Siemens Corporate Office Munich
Karl Huber	KH	Global Head of FS SYS (comprising all central R&D and PM functions, and the product business responsibility)
HW Kim	HWK	CFO till end of August 2010 CFO till end of August 2010
YK Lim	YKL	Head of BT FS Korea, and former CEO of the Shinwha Fire Protection business (own legal entity)
Hans Meier	HM	Global Head of FS Human Resources
Peter Mueller	PM	CEO of the Fire Safety business unit
OK Park	OKP	CEO of Shinwha, CEO of subsequent FS organisation till September 2009
Robert Schmid	RS	Head of Product Line Intrusion Sensors within SP new setup
Keiko Safaia	KS	CMO (Chief Marketing Officer) previously founder and CEO of iMetrex
Jan Traber	JT	Integration Manager iMetrex
Yao Wang	YW	Head of Product Management
SH Wong	SHW	Factory Manager at Gimpo (since 1998) Head of R&D and Manufacturing (since mid of 2009)

Legend: HQ – headquarters organisation

Table 8-1 – Interview Partners and their relevant roles

¹²² All names of interviewees changed for confidentiality reasons.

Appendix F – Participant information and consent forms

Participant Information Sheet

You are being invited to take part in a research project. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me if there is anything that is not clear of if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

What is the project about?

This research project centres on entrepreneurial behaviour within multi national enterprises (MNEs). It particularly focusses on the factors relevant to fostering entrepreneurship in MNE environments.

What is the purpose of the project?

Based on the identification of relevant dimensions of entrepreneurship, approaches should be identified on how to foster entrepreneurial behaviour in a successful way.

Who is sponsoring the project?

The project is approved by the management of Siemens I BT FS headquarters in Switzerland. FS headquarters is not having any influence in the research project but is - of course - interested in the outcomes of the project. Because this project is part of my DBA studies, the University of Strathclyde is also a sponsor.

What is your involvement?

The project will last for about 3 years. The nature of your involvement is: *interview partner*. The involvement in the project will be based on interviews only, comprising 1-2 hours. The interview may be recorded, but access to this data is restricted to named researchers and supervisors. Electronic data will be stored digitally in a secure password protected location with anonymity ensured. Hard copies will be stored in a protected private location.

It is up to you to decide whether to take part. If you do decide to take part you will be given this information sheet to keep (and be asked to sign a consent form). If you decide to take part you are still free to withdraw at any time.

All information that is given from you during the course of the research will be kept strictly confidential. Any information about you that is distributed will have your name removed and your anonymity protected unless you explicitly agree otherwise.

If you have any questions or concerns, the supervisor of this research project and I can be contacted as following:

Joe Amberg
Siemens Schweiz AG
I BT FS ST&BE
Tel: +41 41 724 28 07 (fixed line)
Tel: +41 79 592 59 14 (mobile)
joe.amberg@siemens.com

Sara McGaughey
Professor of International Management,
Director, Strathclyde International Business Unit
Strathclyde University, Glasgow, Scotland
Tel: +44 141 553 6122
sara.mcgaughey@gsb.strath.ac.uk

Thank you very much for reading this participant information sheet and taking part in the research project.

Participant Consent Form

This consent form is related to the research carried out by JOE AMBERG, DBA student at the University of Strathclyde, whose research title is:

“How can entrepreneurship be strengthened within local Siemens organisations?”

1. Your participation is voluntary.
2. Your signature on the consent form indicates:
 - that you are aware of what your participation involves, and of any potential risks;
 - that all your questions concerning the study have been satisfactorily answered.
3. You can terminate your participation at any time without giving a reason and without any of your rights being affected.
4. You can also ask to have your data withdrawn from the study.
5. You are under no obligation to respond to all aspects of the procedure: for example, you can refrain from answering any interview question(s) about which you feel uncomfortable.
6. You understand that all information you give will be treated with the utmost confidentiality and their anonymity will be respected at all times except where explicitly agreed otherwise.
7. Where relevant, you give your consent to the investigators to access specified records (if applicable).
8. Where relevant, you give permission for the investigator to maintain records of the study should a follow-up to the study be conducted in the future, or a further study be undertaken.

Please also delete as appropriate:

I **agree / disagree** to have my interview audio-recorded.

I **agree / disagree** for my data to be retained by the researcher for comparison purposes for later studies.

I **agree / disagree** to preview results of research if requested before they are used.

I give consent to the research.

Signature of participant

Please also print name below

Date _____

Appendix G – Questionnaire scheme for the semi-structured interviews

		case specific											case independent				
		1		2				3					IBT	Siemens			
		Shinwha		SMART Project				SP new setup					FS	AG			
		Michael Bosshard	HW Kim	SH Wong	Karl Huber	Karl Huber	Yao Wang	Paul Amstutz	Jan Traber	Connie Clark	John Davis	Keiko Safaia	Robert Schmid	Peter Mueller	Hans Meier	Ralf Dunkel	Sandra Amrein
		PM/Sales HQ	CFO Korea	R/D, PM Korea	PM/Sales HQ	PL China	PM China	R&D China	PM/Sales HQ	CEO	former CEO	PM/Sales entity	IBTFS CEO	IBTFS HR	PL SMART initiative	Management development	
a) Overall business rationales of researched cases																	
-1	What is the main competitive strategy involved? (differentiation, cost leadership, specific market (niche, region), mix of all / not applicable)	X	X	X	X	X	X	X	X	X	X	X	X	X			
-2	Maturity of the involved business? (Scale of 1=emerging to 5=mature offered)	X	X	X	X	X	X	X	X	X	X	X	X	X			
-3	Degree of innovativeness of the involved business? (Scale of 1=low to 5=high offered)	X	X	X	X	X	X	X	X	X	X	X	X	X			
-4	Entry barriers for new competitors? (Scale of 1=low to 5=high offered)	X	X	X	X	X	X	X	X	X	X	X	X	X			
-5	What is your role?	X	X	X	X	X	X	X	X	X	X	X	X	X			
-6	Other key aspects?	X	X	X	X	X	X	X	X	X	X	X	X	X			
b) Entrepreneurship backgrounds																	
-1	What is your understanding of the term “entrepreneurship”? What comes to your mind if you hear “entrepreneurship”?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-2	What would you understand by “corporate entrepreneurship”?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-3	Do we have entrepreneurs / corporate entrepreneurs at Siemens? Who are they?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-4	How positive are you about entrepreneurship – how important is entrepreneurship in the Siemens context?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-5	What does Siemens top management try to achieve with <the specific project / case>?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-6	Would you consider the<the specific project / case> as an obviously entrepreneurial endeavour?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-7	Would you consider the acquisition of a competitor as an obviously entrepreneurial endeavour?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
c) Organisation and Processes																	

-1	What aspects or elements out of Siemens definitions regarding processes and organisation are relevant? [PEP, matrix organisation, ...]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	-> which of these aspects or elements do you see as specifically fostering or hindering entrepreneurial behaviour?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-2	What are the effects of the compliance rules – and the increased pressure on being compliant – on entrepreneurial behaviour?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-3	What are the effects of the exclusive sales rights per country on entrepreneurial behaviour?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-4	Are there any definitions of an entrepreneurial process at Siemens AG?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-5	Are there any definitions of an entrepreneurial process for the overall SMART initiative?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-6	Are there differences between “entrepreneurial” process definitions and “normal” ones?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-7	Is it important to have process definitions especially guiding entrepreneurial activity? Why? In which areas?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Explanation of the entrepreneurial process as defined in Figure 2-3 to give the foundation for the subsequent questions																	
d) Ambidexterity management and required slack resources																	
-1	Have you ever experienced conflicts between operating the established business – and searching & exploiting new business opportunities at the same time?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-2	Are there maybe even mutual benefits of operating an established business and searching & exploiting new business opportunities at the same time?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-3	Can running business – and searching & exploiting new business opportunities – be done by the same management, and the same resources?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-4	Do we have enough resources to investigate & exploit new business opportunities? What / who are these resources? Are they planned (yearly budgets etc.)? Are they adequate (quality, knowledge, ...)?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-5	Is the entrepreneurial activity primarily limited by existing (maybe too small) resources?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-6	Within <your case / your project>: are there any specific definitions on how to deal with the challenges in ambidexterity management and required slack resources?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-7	Overall: what are your top three action items regarding organisation and processes to foster entrepreneurial activities... - in the context of <your case / your project> - subsidiaries in general	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
e) Empowerment and HR aspects [meant for the HR representatives only]																	
-1	Do you see a relation between the level of personal empowerment of employees (as granted by superiors) and the notion to go for entrepreneurial activities?															X	X
-2	Is there an adequate culture in Siemens of empowering employees regarding the set-up of new business ventures and to run a business (competences to decide, ...)?															X	X
-3	Do we have the adequate people (quality and quantity) to act entrepreneurially? If not: what are possible reasons for leaks?															X	X
-4	New Siemens Leadership Framework concept: do you see any impact towards the entrepreneurial activities at Siemens? What is the relevance of Siemens Leadership Framework towards entrepreneurial behaviour?															X	X
-5	New Siemens Leadership Framework concept: what employee feedback did you get regarding the reference profiles?																X
-6	What are the effects of the current top talent program towards entrepreneurial activities?																X
-7	What kind of role should – or could - HR management play towards fostering entrepreneurial activity?															X	X
-8	Do you see other relevant aspects of people empowerment and HR activities possibly influencing entrepreneurial activity at Siemens? Possible action items?															X	X
-9	Comment in an interview with a Siemens CEO: “...within the body of the business, you know, people are quite cynical about people development, and therefore entrepreneurship”. [your reaction?]																X
f) Granted business mandates																	
-1	How are the mandates defined regarding responsibilities and competences to decide [process areas; product portfolio, geographical sales regions, ...]?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-2	Who is informing / who is informed about granted mandates?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

-3	Are these mandate definitions appropriate? Are there maybe leaks in the definitions?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-4	Are there gaps between these definitions and the perceived practice? Examples?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-5	What kind of hurdles have been experienced when people try to act as mandated? Examples?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-6	Are there fields of contradictions (of granted responsibilities and competences etc.) with other mandates existing? Examples?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-7	Other mandate aspects?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-8	Overall: what are your top three action items regarding granted mandates / responsibilities and competencies to foster entrepreneurial activities... - in the context of <your case / your project> - in subsidiaries in general	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
g) Long term orientation																	
-1	What are the given time horizons of the respective business strategies? Is this appropriate? (Scale of 1=too short, 3=appropriate, 5=too long offered)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-2	What are the given time horizons of the respective innovations? Is this appropriate? (Scale of 1=too short, 3=appropriate, 5=too long offered)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-3	What are typical periods of service of involved key managers (project lead, CEO)? Is this appropriate? (Scale of 1=too short, 3=appropriate, 5=too long offered)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-4	Do you see relations between the length of service and 1. delivered business results (measured by growth and profit)? 2. showed notion for going for entrepreneurial activities?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-5	Other aspects regarding time horizons?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-6	Overall: what are your top three action items regarding involved time horizons to foster entrepreneurial activities in subsidiaries (and globally) at Siemens?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
h) Summary on organisation/processes, granted mandates, long-term orientation																	
-1	How important do you consider these factors for the notion / ability etc. of going for entrepreneurial activity? Three scales (1=low, 5=high) offered for all three aspects	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
-2	Do you see relevant interactions between these factors? [figure included with the three aspects as bubbles, and arrows with question marks among them]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
i) Further factors - optional																	
-1	How important do you consider these further factors for the notion / ability etc. of going for entrepreneurial activity in your project / your entity? (for each question, a scale with 1=not important to 5=very important was offered) - degree of autonomy [regarding headquarters / line organisation] - degree of autonomy [regarding other projects / other subsidiary] - entrepreneurial posture [in headquarters / line organisation] - entrepreneurial posture [in the projects / in the subsidiary] - entrepreneurial posture [in the region of the project / subsidiary] - acceptance and established culture of having subsidiary initiatives - overall capabilities of involved managers and employees - cognition capabilities of involved managers and employees - motivation and reward systems for management and employees - effects of management legitimacy as perceived by the employees - effects of trust into the respective management	X	X					X	X	X	X			X		X	
z) Final question...																	
-1	Have we missed addressing aspects you consider as important...?	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Table 8-2 – Detailed questionnaires for all involved interview participants

Appendix H - Study findings on how to foster CE / intrapreneurship

Reviewed studies focussing on **success factors to foster entrepreneurship in existing firms** (please see Section 2.1.18 for the summary and comment):

Study	Focus	Methodology	Main findings	Proposed future directions of research and practice
1 (Fry 1987)	<ul style="list-style-type: none"> • Key factors for intrapreneurial success 	<ul style="list-style-type: none"> • Single case study (3M, post-it innovation) 	<p>Key success factor is to develop a creative climate:</p> <ol style="list-style-type: none"> 1. Provide intrapreneurship the necessary time and resources 2. Be sure management sponsors the concept. Management must also convey: <ul style="list-style-type: none"> • Trust • Expectation of excellence • A long term focus • The practical rewards of the sponsorship function • An openness to criticism. People who want to change things are not always selective in what they look at. • A willingness to facilitate change. 3. Give intrapreneurs freedom. Sponsors must not manage their program. 4. Forgiveness, freedom to fail, leeway to change directions. 5. Enrich the climate by sharing goals. People like to work in realistic directions, and don't want to have their time wasted. 	(none)
2 (Kuratko et al. 1990)	<ul style="list-style-type: none"> • Measure the effectiveness of an environment or culture for the implementation of intrapreneurial ideas • Assess the factor structure of intrapreneurship culture • Focussed upon internal ambient factors impacting intrapreneurial behaviour. 	<ul style="list-style-type: none"> • Quasi-experimental design set in a Fortune 500 firm in the Midwest (US) • Application of the intrapreneurship assessment instrument (IAI) 	<ul style="list-style-type: none"> • Support for the existence of an underlying set of environmental factors that need to be recognized for organisations introducing intrapreneurial concepts • Identified three main factors: management support for intrapreneurship, organisational structure (“organisations need some guidelines to direct or redirect resources towards establishing effective intrapreneuring”, “counter the bureaucratic barriers to innovation”, “structural freedom and support”, “flexible policies and procedures”, “concern for job descriptions”), and resource availability • Study results suggest that intrapreneurship training may be effective in altering individual perceptions of the work environment 	<ul style="list-style-type: none"> • More research is needed to refine both the concept of intrapreneuring and the environment which fosters it

<p>3 (Brazeal 1993)</p>	<ul style="list-style-type: none"> • Factors relevant to organise new ventures in existing firms • Focus of involved managers 	<ul style="list-style-type: none"> • Questionnaire to 1,000 upper middle managers in Fortune 500 manufacturing firms. 	<p>Key findings informing managerial practice:</p> <ol style="list-style-type: none"> 1. Making available both formal and informal structural outlets for creative activities to all managers. This means actively building venture groups as well as allowing free time to pursue projects of one's own undertaking. 2. Reinforcing innovative behaviours and the opportunity to engage in innovative activities with both financial and nonfinancial rewards for all managers 3. Recruiting for corporate entrepreneuring positions within the organisation. Managers in upper middle management positions are not "deadheads", but potentially creative, resourceful individuals interested in innovation. <p>Required organisational activities are seen in "structural arrangements" like "venture groups, task forces, strategic business units, freedom to engage in projects of one's own undertaking, and unofficial projects (e.g., bootlegging, skunkworks)"</p>	<ul style="list-style-type: none"> • By what means may executives identify potential corporate entrepreneurs? • When and by whatever means make potential corporate entrepreneurs their presence known? • How should corporate entrepreneurs be rewarded?
<p>4 (Higgins 1995)</p>	<ul style="list-style-type: none"> • Practitioner view on most important constructs of successful companies (3M, GE, Microsoft, Apple, Sony etc.) 	<ul style="list-style-type: none"> • (Informal) case studies 	<p>The study states seven main principles of innovative organisations:</p> <ol style="list-style-type: none"> 1. a stated and working strategy of innovation 2. forming teams 3. rewarding creativity and innovation 4. allowing mistakes 5. training in creativity 6. managing the organisational culture 7. creating new opportunities proactively 	<p>(none)</p>
<p>5 (Antoncic and Hisrich 2001)</p>	<ul style="list-style-type: none"> • Intrapreneurship construct refinement and cross-cultural validation 	<ul style="list-style-type: none"> • Literature review • Mail surveys with top business executives in US (51) and Slovenia (141) • Application of the ENTRESALE and the "corporate entrepreneurship scale" 	<ul style="list-style-type: none"> • Intrapreneurship construct to be based on four aspects: new business venturing, innovativeness, self-renewal, proactiveness • The correlation of the antecedents in organisation and environment towards the outcome (growth, profitability) confirmed the significance of: <ul style="list-style-type: none"> - nurture organisational structures ("loose intra-organisational boundaries" etc.) and values conducive to intrapreneurial activities - open and quality communication - existence of formal controls - intensive environmental scanning - management support - organisational support • Construct and findings are generalizable over different cultures 	<ul style="list-style-type: none"> • Differential effects of the intrapreneurship dimensions on performance should be further explored, even though they are not found in this study • New measures of performance are needed for the performance-based differentiation of firms • Developed cross-culturally comparable constructs should be used in future entrepreneurship research in further countries

<p>6 (Dess et al. 2003)</p>	<ul style="list-style-type: none"> Identify emerging issues in corporate entrepreneurship 	<ul style="list-style-type: none"> Literature review 	<p>Found inhibitors for intrapreneurial success:</p> <ol style="list-style-type: none"> Corporate entrepreneurship often fails because large organisations present hostile environments for creative ideas Innovative proposals are frequently defeated by financial control systems and other formalities that are typical of large bureaucracies Creating collateral organisations, such as new venture divisions can isolate entrepreneurial processes from the parent organisation. The isolation also makes it less likely that their initiatives will harmonize with the needs of the core business, which, in turn, reduces the likelihood that new ventures receive the support and acceptance, necessary to become commercially viable Even when the CE process is established within the core of a firm, virtually all entrepreneurial initiatives face some degree of survival risk induced either by the structural or strategic context 	<ul style="list-style-type: none"> The applied social exchange perspective also suggests that two new constructs, dominant logic consensus and strategic role conflict, should be examined by future CE leadership studies. Other streams of management research can provide guidance on how to operationalize both constructs.
<p>7 (Hayton 2005)</p>	<ul style="list-style-type: none"> HRM perspective on how to promote corporate entrepreneurship 	<ul style="list-style-type: none"> Literature review 	<p>Identified general factors:</p> <ul style="list-style-type: none"> Socialization & Team-Oriented Training Risk Taking Performance Evaluations and Incentives to promote risk taking behaviours Organisational Support Trust Internal & External Exchange of Information Resources <p>Specific HRM focus:</p> <ul style="list-style-type: none"> encourage internal and external knowledge acquisition and integration encourage risk taking and acceptance of failure encouraging risk acceptance and collaboration building relationships among employees build a positive social exchange climate recognise entrepreneurial achievements (rewards) 	<p>Future research needs to address:</p> <ul style="list-style-type: none"> how entrepreneurial firms design jobs loosely while maintaining the ability to monitor and reward performance what the relationship is between intrinsic and extrinsic rewards and entrepreneurial contributions <p>Current literature is seen as somewhat limited by the lack of a conceptual framework for linking HR practices to CE</p>
<p>8 (Christensen 2005)</p>	<ul style="list-style-type: none"> Provide an understanding of the various factors that enable intrapreneurship in established firms 	<ul style="list-style-type: none"> Single case study of intrapreneurship in a large knowledge intensive industrial firm 	<ul style="list-style-type: none"> The dimensions as proposed by Kuratko, Montagno and Hornsby (1990) are not sufficient to encourage intrapreneurship in a knowledge-intensive company The authors propose the following eight dimensions as relevant: communication, culture, process, rewards, (top) management support, resources, organisational structure, and risk Not all factors directly encourage intrapreneurship, although 	<ul style="list-style-type: none"> Studies related to the enablers are important. Are there more than eight, and which? How are they related? And how can managers exploit the synergies involved? Up to now we don't know if and how these factors can be used to turn the intrapreneurial level up and down.

			<p>some are necessary in order to create an intrapreneurial climate</p> <ul style="list-style-type: none"> • Cited aspects of required organisational structure: “networks, loosely coupled organisations, and project organisations; collaboration and the pooling of competencies in cross-functional business units”. “Matrix and functional, or ‘silo’, organisations can inhibit corporate entrepreneurship with respect to new business creation.” 	
9 (Fitzsimmons et al. 2005)	<ul style="list-style-type: none"> • Relation between entrepreneurial dimensions and resulting firm performance 	<ul style="list-style-type: none"> • Questionnaires returned by 70 CEOs of Australian businesses with more than 100 employees 	<ul style="list-style-type: none"> • Significant positive relationship between organisational support and resulting profitability • Negative relation of self-renewal activities and resulting firm performance due to longer term effects • Unresolved effects of – suggested - time-lag effects of growth strategies towards not recognizable performance effects 	<ul style="list-style-type: none"> • Further investigation into the relationship between the role of an innovative supportive culture and resulting firm performance
10 (Menzel et al. 2007)	<ul style="list-style-type: none"> • Technological innovation, • R&D engineers 	<ul style="list-style-type: none"> • Primarily literature review • Some empirical evidence from investigating 156 Dutch firms 	<ul style="list-style-type: none"> • Key inhibitors are “organisational barriers to intrapreneurship and lack of individuals who think and act intrapreneurial” (740) • Proposed key activities are proposed to foster intrapreneurship: <ol style="list-style-type: none"> 1. Set up a physical environment to compensate for and create new ways of physical nearness, and stimulate mutual co-operation that goes beyond time and space. 2. Set clear goals, strategies and tasks 3. Eliminate organisational structures that obscure personal responsibility and homogenize individual actions 4. Promote communication and knowledge sharing and idea generation within the organisation and across disciplinary borders. 5. Top management must encourage intrapreneurship by making human and financial resources available and allocated, such as rewarding engineers for intrapreneurial action, irrespective of a possible failure. 6. Would-be and active intrapreneurs need advocates. These are key stakeholders - not necessarily direct superiors - who support intrapreneurs with their broad experience in conducting projects, corporate politics, and professional knowledge. Their main task should thus be coaching the intrapreneur. 7. Resources are required in terms of people, time and room to manoeuvre. Individual talent and potential are highly relevant 	<ul style="list-style-type: none"> • It is needed to study how the generation of ideas can be supported on the company level so that it becomes day to day practice and the core of the company’s culture. • More research into the definition and modelling of intrapreneurship-supportive culture is needed. • More effort has to be made to implement intrapreneurship in the settings of existing companies and in engineering and R&D settings in particular • The existing knowledge must be brought back into the field by designing interventions and tools that can be used to tech and train intrapreneurship at school, universities and in companies

Table 8-3 – Study findings on how to foster CE / intrapreneurship

Appendix I – Coding Structure

Primary structure from interview questionnaires	Secondary structure from data
0 - Pre Discussion	Autonomy from headquarters - line organisation
A - Business rationale of researched case	Autonomy from other projects - subsidiaries
Competitive strategy	Entrepreneurial posture in headquarters - line organisation
Business maturity	Entrepreneurial posture in other projects - subsidiaries
Degree of innovativeness	Entrepreneurial posture in the region - cluster office
Entry barriers	Culture of subsidiary initiative
Other aspects	Overall capabilities
	Cognition capabilities
B - Entrepreneurship backgrounds	Motivation - recognition - reward
Personal entrepreneurship definition	Legitimacy
Current entrepreneurs at Siemens	Trust
Relevance of entrepreneurship for Siemens	Institutional duality
Current entrepreneurial endeavours	Entrepreneurial orientation
	Autonomy
C - Organisation and Processes	Competitive aggressiveness
Most relevant elements	Innovativeness
Compliance rules	Proactiveness
Exclusive sales rights	Risk-taking
Entrepreneurial process	
Relevance of a guiding entrepreneurial process	Firm performance
	Firm resources
D - Ambidexterity management and slack resources	Manufacturing resources
Ambidexterity conflicts	R&D resources
Ambidexterity benefits	Sales resources
Shared resources	Scarcities of resources
Opportunity recognition limited by resources	
Opportunity recognition limited by other factors	Culture and values
Specific definitions in the projects or entities	Company culture
Proposed actions	Gaps and challenges
	Achievement recognition
E - Mandates	Autonomy
Definitions	Career factors
Informing about mandates	applied metrics
Gaps and hurdles	managing expectations
Other aspects	
Proposed actions	Coaching and sponsorship
	Company values
F - Long term orientation LTO	Decisiveness
Time horizons of strategy and innovations	Diversity
Length of service of executives	Empowerment
LTO interaction with delivered results	Encouragement (innovation, new business)

Appendix K – Data Displays

The subsequent data displays summarise all answers as given in the interviews (please compare Table 8-1 for the used abbreviations of the interviewees, and Appendix G for the used questionnaire).

K1 – Understanding of the terms “entrepreneurship” and ”entrepreneur”

This first aspect is essential to understand the context of respondents understanding of entrepreneurship - as the foundation for the subsequent answers.

		Case1: Shinwha – FS KR	Case2: SMART	Case3: SP	Siemens in general
CEO / CFO / PL	in HQ		RD 1. an entrepreneur is the same for the business as an inventor for the R&D 2. takes the risk, the responsibility, explores the path 3. thinks outside the box and beyond the obvious 4. CE have two functions, 1. integrating business in the whole corporation, and 2. acting as entrepreneurs at headquarters	KS 1. “bias for decision”: decide, don’t ask too many people, don’t worry too much about decisions 2. it is <i>essential</i> to take more decisions than we see today, or you will miss many opportunities 3. to be open for contrarian views 4. CE: you need to have the buy-in of the organisation 5. CE has per definition a different baseline (complexity of processes and organisations) than independent entrepreneurship	PM 1. entrepreneurship is: being successful with the 80% approach, meaning: a fast decision is better than no decision. 2. Corporate entrepreneurship is to be successful in finding the balance of doing entrepreneurship within a corporate matrix HM 1. “Entrepreneurship is an attitude of a person: how he handles his activities inside the company” 2. entrepreneurship is <i>not</i> a process 3. entrepreneurship is essential to survive as a company
	in entities	HWK 1. “It means I am having all power to implement our business to achieve a target, to expand the market share, to increase the business sales volume.” 2. it is like the landlord – I have the ownership 3. corporate entrepreneurship is stewardship for the shareholder, also to administer the risk -> the long term risk of the company – to lose the market – is in having <i>no</i> entrepreneurship	KH 1. entrepreneurship is primarily ownership 2. an entrepreneur has a clear vision 3. an entrepreneur is decisive 4. an entrepreneur is a good communicator (-> buy in) 5. also for a CE the key question is: would I do that if it would be my money?	JD 1. “you are looking at opportunities, and responding to them in an innovative, creative, where you are finding a quick and different solutions in a profitable manner to opportunities that you are able to identify in the market place” 2. corporate entrepreneurship is tremendously influenced by the existing organisation, culture, requested KPIs 3. Apple is a good example of successful CE, the right culture, quick responses to customer needs	

Middle management	in HQ	<p>MB</p> <ol style="list-style-type: none"> 1. entrepreneurship is the ability to spot a gap in the market and develop a solution that can make money 2. market focussed, and quick in reaction 3. a CE can successfully work in a corporate framework, understands the boundaries, and can localise the global framework 	<p>PA</p> <ol style="list-style-type: none"> 1. "Clear business responsibility, to have the freedom to take risks - allowed to take risks, and forced to take risks- and to make decisions" 2. profit and loss responsibility on the commercial side 	<p>CC</p> <ol style="list-style-type: none"> 1. "Taking ownership of a topic, driving it actively, and being accountable." all together are required – AND! 2. CE means that a "company... creating the environment and culture, supporting that individuals can be entrepreneurs." 3. a corporate entrepreneur is "somebody who is involving himself, but just for the full benefit of Siemens." (not primarily for his own sake – his own career) <p>JT</p> <ol style="list-style-type: none"> 1. an entrepreneur believes in his idea and is willing to give his last shirt to make it happen 2. successful entrepreneurs are strong characters 3. a successful entrepreneur does not just need a brilliant (technical) idea – he needs to understand and interpret the market 4. a good intrapreneur does not ask for permission, he asks for excuse – afterwards if it did not work 5. a good intrapreneur is prepared to be fired every day 	<p>SA</p> <ol style="list-style-type: none"> 1. strategic innovative orientation 2. thinks into the future, takes an idea to the next level 3. creativity 4. business result orientation
	in entities	<p>SHW</p> <ol style="list-style-type: none"> 1. should know about the market, the trends, the technology; customer oriented 2. should have a very good networking 3. should be creative 4. should challenge the business, ideas, ... 5. strong leadership 	<p>YW</p> <ol style="list-style-type: none"> 1. entrepreneurship means: ownership, accountability, decision power, your own resources supporting the business 2. corporate entrepreneurship is very difficult because of missing competences / responsibilities 3. entrepreneurship is of key importance, we could be severely hit by bold moves of our competitors 	<p>RS</p> <ol style="list-style-type: none"> 1. an entrepreneur takes all the responsibility and decisions from A-Z 2. a corporate entrepreneur has "50 percent non-egoism to something which is besides or even against his own part" -> go for all the surrounding stuff as well 3. a corporate entrepreneur has to integrate all aspects, has to be a good communicator 	

Table 8-5 – Understanding of entrepreneurship

K2.1 – Organisations and Processes – Reported key issues

		Case1: Shinwha – FS KR	Case2: SMART	Case3: SP	Siemens in general
CEO / CFO / PL	in headquarters		<p>RD</p> <ol style="list-style-type: none"> 1. importance of getting the right amount of responsibility for respective operating heads (BU, segment, PL, ...) 2. processes are not the main hindering factor, it is more the culture and especially missing trust and openness -> requires a new style of how to lead the company 3. more empowerment 4. less dependencies ("cut lines") 5. focus on fewer issues 	<p>KS</p> <ol style="list-style-type: none"> 1. in CE, the baseline or the ecosystem is different – to independent entrepreneurship -> density of processes, complex organisation, reduced autonomy => this is given and has to be accepted 	<p>PM</p> <ol style="list-style-type: none"> 1. PEP, matrix organisation etc. is a prerequisite to have an endeavour like SMART being flying -> global organisation, common language 2. organisations and processes have to fit the – pretty different – requirements of subsidiaries or headquarters 3. in the SP context, the normal Siemens processes and organisation are rather hindering – therefore it has been set up differently <p>HM</p> <ol style="list-style-type: none"> 1. all Siemens processes are aimed at big organisations and hinder entrepreneurship (refers to all failed integrations of smaller companies) 2. no real cut out of the SP new setup, still part of all main processes (HR, compliance rules etc.)
	in entities	<p>HWK</p> <ol style="list-style-type: none"> 1. too heavy compliance process / rules, but a clear consequence of the bribery scandal beforehand -> significant influence of the selection of employees (exchange of people, especially in Asia / Korea) 2. an accounting system like SAP is good since it provides very good transparency (is worth the cost) 	<p>KH</p> <ol style="list-style-type: none"> 1. PEP is good and establishes a common language, but has to be used in lighter versions 2. some processes (HR, IT) are too heavy, especially for smaller entities (SP, subsidiaries like FS KR) 3. processes are not made – and applied for a products business, especially not for the new M3 SMART products 	<p>JD</p> <ol style="list-style-type: none"> 1. good processes (PEP etc.) – typically applied in the field of exploitation – ensure a proper running exploitation (quality, readiness of delivery etc.) and thus are essential to give the entrepreneurs the freedom to concentrate on new opportunities 2. a small entity like SP has to spend too much time with internal issues (LOA, terms and conditions, etc.) – because we are Siemens – and this gives a too strong focus on internals instead of spending the time with customers 	

Middle management	in headquarters	<p>MB</p> <ol style="list-style-type: none"> 1. on the side of entrepreneurial opportunity recognition, processes are a distraction – they are very good for running the established business 2. currently we are too much internally focussed 3. focus is too short term 4. to less involvement of regional companies on the opportunity recognition / innovation side 	<p>PA</p> <ol style="list-style-type: none"> 1. the own passion to drive the business is not on the same level as at our competitors 2. we do not have this individual – responsible – autonomy seeking organisation 3. the organisational set up is too complex, especially in regard of cost of services within siemens – we have there a cost disadvantage 	<p>CC</p> <ol style="list-style-type: none"> 1. PEP is essential to run PLM, it can be used in the light weight version, and creates accountability 2. matrix organisation was and is clearly hindering entrepreneurial activity in SP 3. current financial process and reporting is hindering a product business – not appropriate (missing transparency about sold products -> manage quality issues, take the right PM decisions) 4. salary framework is too tight, you cannot hire top people 5. rigidity of labour markets in Germany and France – you cannot freely decide on resources (also a Siemens context) <p>JT</p> <ol style="list-style-type: none"> 1. Siemens is like a public authority, like government 2. key importance on entrepreneurial thinking includes culture and mindset 3. matrix organisation is simply given by the complexity of the given global organisation 4. PEP is an artefact of today's mindset – North-West European thinking which does not fit for other world regions 5. SP new setup eases some of these hindering factors 	<p>SA</p> <ol style="list-style-type: none"> 1. give an environment an entrepreneur can live within 2. given the size of Siemens an all the countries we are in, you will always have a kind of matrix
	in entities	<p>SHW</p> <ol style="list-style-type: none"> 1. approval process in purchasing is not adequate, far too high escalation to people which anyway we cannot judge 2. risk aversion is leading to additional risks 3. culture of having these escalated decisions is significantly slowing down the company 4. compliance rules! 	<p>YW</p> <ol style="list-style-type: none"> 1. in the matrix organisation you do not know who is your boss 2. PEP is a good and helpful process, but could further be simplified 3. weak definitions of the supply chain and sales process 4. current logistics process far too cumbersome 	<p>RS</p> <ol style="list-style-type: none"> 1. organisation should be split into smaller units (reduced matrix), with granted true business ownership, including decisions about where to manufacture and sell for a respective PM 2. PEP is a good backbone but has to be used adequately (PEP tiny etc.) 	

Table 8-6 – Organisations and Processes – Reported key issues

K2.2 – Organisations and Processes – Ambidexterity management aspects

		Case1: Shinwha – FS KR	Case2: SMART	Case3: SP	Siemens in general
CEO / CFO / PL	in headquarters		<p>RD</p> <ol style="list-style-type: none"> 1. entrepreneurs are the balancers of the trade-off of exploration – exploitation 2. risk-averse German culture is limiting on the side of exploration 3. we could do more on exploration side resource-wise 4. clear impact of the financial crisis to the budget cuts on the exploration side 	<p>KS</p> <ol style="list-style-type: none"> 1. "I don't think you have manager who are equally good in both." 2. separate operational excellence via a COO etc. 3. too few resources on exploration side due to short term goals 	<p>PM</p> <ol style="list-style-type: none"> 1. there is a tendency to hide behind what you are used to do, and continuing, because there is some uncertainty of doing something different -> hinders the organisation to be faster in establishing and exploiting new businesses 2. it needs different people with different knowledge for exploration / exploitation; set up projects, or centre of competences for exploration 3. we have to improve and faster adapt the competences in exploration 4. SP too small resources, FS: investing takes place despite the crisis <p>HM</p> <ol style="list-style-type: none"> 1. previous Cerberus setup with having the same people and organisation doing all was not successful 2. another approach in a former company – with completely separated teams – did not work either 3. you need some oddballs upfront to have new ideas out side the box – but then come down to reality to have any result in the end 4. some people – willing and capable of – can work over the whole process 5. real innovation, business innovation is missing today, we are focussed on incremental technical innovation 6. I doubt if we have the right entrepreneurial climate today

	in entities	<p>HWK</p> <ol style="list-style-type: none"> 1. FS KR is in restructuring due to missing profit, we are short term oriented now 2. one key aspect is to switch from make to buy – frees up resources and improves profitability -> go for exploration again 3. mutual doing of exploration and exploitation can only take place as far as the knowledge and experience is there 4. existing people are just repeating what they have already done -> we need to inject new ideas, and partially replace managers 5. amount of resources for exploration is OK, quality is not -> capabilities, going for new business, for service business, even English skills 	<p>KH</p> <ol style="list-style-type: none"> 1. clear target conflict 2. keep the things separate (own rooms etc.) for people doing exploration 3. be aware of the risks of cannibalizing the own existing business -> get over internal resistance to do that, otherwise competition will cannibalize you! 4. requires more empowerment on the side of exploration 5. limitation on exploration side is given by the quality of people, and decisiveness of the management... 	<p>JD</p> <ol style="list-style-type: none"> 1. there are many mutual benefits: apply customer feedbacks, have shared knowledge, mutual learning 2. exploring activities cannot just be “hung at the end of an employees job description” 3. doing significant exploring is more a question of clear goals and priorities than the absolute level of resources 4. running the exploitation properly – especially by having good processes – is an important prerequisite to go for successful exploration 	
Middle management	in headquarters	<p>MB</p> <ol style="list-style-type: none"> 1. there should be no handover. the idea should be exploited by the same people 2. ambidexterity problems –caused by HQ - are avoided in the countries by not revealing the activities (stealth operations) 3. many new opportunities are coming from customers in the regional companies -> they will never reach HQ (see 2) – we have a significant regional companies-HQ problem here 4. discussions with HQ are avoided by regional companies – too slow, too hindering 5. HQ does not recognize all the creativity existing in the regional companies 6. to overcome this: “system house approach as proposed by Milde 	<p>PA</p> <ol style="list-style-type: none"> 1. on the recognition side we have difficulty in understanding the customer, especially in M3 which is new for us 2. in M3, you need local people who understand local needs, local customers 3. exploration and exploitation cannot be done by the same people, because <ol style="list-style-type: none"> a. they will get lost in setting priorities b. you need different people capabilities 4. amount of resources is OK, it is more about setting the right priorities 5. limitation is in the organisation set-up and the way Siemens is managed 	<p>CC</p> <ol style="list-style-type: none"> 1. “on a level of a BU or segment leader, [entrepreneurs] would probably die or suffocate in this environment, because I don't think the framework is given to support that kind of behaviour.” 2. SP: missing decisions / priorities between exploration and exploitation activities 3. SP: key issues especially in the evaluation/decision phase – no decisions 4. there can be one overall manager, but you need specific groups working on the issues 5. mutual benefit is knowledge exchange, but separation has to take place in the broad work <p>JT</p> <ol style="list-style-type: none"> 1. this conflict clearly exists 2. I would see some think tank upfront for exploration. But you have to have people there who are not just coming from university, who have real experience 3. for disruptive innovation, think even of separate start-ups like Intel is doing – and then integrate if it gets successful 4. smaller innovation steps can be done by existing own people 	<p>SA</p> <ol style="list-style-type: none"> 1. has to be split by capabilities 2. big limitation in missing exchange of knowledge throughout the whole Siemens 3. exploration limited by the (old) Siemens culture – not really feeling as innovators, pioneers 4. entrepreneurs have also to match with the respective national cultures

	in entities	<p>SHW</p> <ol style="list-style-type: none"> 1. short term orientation – due to performance measuring, bonus, incentives – clearly limits exploration -> no investment in long term activities, including customer relationships ! 2. risk aversion clearly limits exploration 3. missing knowledge about products and customers limits the recognition of new opportunities 	<p>YW</p> <ol style="list-style-type: none"> 1. PM is typical job to experience these conflicts; exploitation problems – like quality leaks – are always priority one and will stop the exploration tasks 2. same management doing both is OK, same resources underneath is a problem -> one person cannot do both, working with priorities does not really work 3. we do not have enough resources for exploration at the moment (FS China scope) 4. even on a technology side we do not have enough activities today –even from HQ side 	<p>RS</p> <ol style="list-style-type: none"> 1. huge struggle with getting the resources on the exploration side 2. missing support on the exploration side from the established way of setting yearly targets, and measure target fulfilment 3. room for exploitation tremendously depends on the prosperity of you running the business 4. doing exploitation and exploration with the same people puts them out of their “comfort zone” 5. BT overall: enough resources for exploration, but not focussed enough, no convincing results 6. SP: very tight resources currently 	
--	--------------------	---	--	--	--

Table 8-7 – Ambidexterity management aspects

K2.3 – Organisations and Processes – Ambidexterity management aspects – Cluster analysis

Elements <i>occurrence</i>		Case1	Case2	Case3	Siemens	CEO / CFO / PL		Middle management	
		FS KR	SMART	SP	overall	HQ	subsidiary	HQ	subsidiary
Limitation by resources - capabilities	9	HWK, SHW	KH, PA	KS, JT	PM, HM, SA	KS, PM, HM, KH	HWK	PA, JT, SA	SHW
Limitation by resources - amount	4		RD, YW	RS	PM	RD, PM			YW, RS
Separation reason: focus / priorities	7		KH, PA, YW	JD, CC, JT, RS			KH, JD	PA, CC, JT	YW, RS
Separation reason: capabilities	7	HWK	RS	KS, JT	PM, HM, SA	KS, PM, HM	HWK	PA, JT, SA	
Limitation by company culture	7	MB	RD, PA, YW	CC, RS	HM	RD, HM		MB, PA, CC	YW, RS
Limitation by short term profitability	6	HWK, SHW	RD	KS, RS	PM	PM, RD, KS	HWK		RS
Limitation by management decisiveness	5	MB	KH	JD, CC	PM	PM	KH, JD	MB, CC	SHW
Limitation by risk-averseness – missing openness for new ideas / creativity	4	HWK, SHW	KH		PM	PM	HWK, KH		SHW

Legend: yellow marked cells contain most respondents (but consider disproportionate numbers of respondents per column!)

Table 8-8 – Ambidexterity management aspects – Cluster Analysis

K2.4 – Organisations and Processes – Reported top action items

		Case1: Shinwha – FS KR	Case2: SMART	Case3: SP	Siemens in general
CEO / CFO / PL	in headquarters		<p>RD</p> <p>“Yes, I think it is very much in the cultural arena, so... I think the top three for me which come to my mind would be”:</p> <ol style="list-style-type: none"> 1. quick decision making 2. collaboration regional companies - HQ 3. trust 	<p>KS</p> <p>“First of all there has to be a culture of taking decisions, and taking ownership, this has to be broadened.”</p> <p>-> BT working groups as an example</p>	<p><i>PM</i></p> <ol style="list-style-type: none"> 1. focus 2. clear communication 3. empowerment <p><i>HM</i></p> <ol style="list-style-type: none"> 1. small little groups having this opportunity to think out of the box on a technical but as well on a business side 2. stronger inclusion of the regional companies in idea creation and evolvement 3. decide case by case if the implementation is done in existing organisations – or new ones
	in entities	<p>HWK</p> <ol style="list-style-type: none"> 1. simplify the regulation 2. people motivation 3. trust the people 4. compensation of employees (is currently not competitive) 	<p>KH</p> <ol style="list-style-type: none"> 1. empowerment 2. reduced complexity by cutting some lines to the headquarters -> autonomy 	<p>JD</p> <ol style="list-style-type: none"> 1. organisations and processes that are light version 2. make entrepreneurship a key KPI, and you judge that by new products, new initiatives 3. more cross-organisational initiatives, that we could learn from other sectors of Siemens world, to see how they are achieving entrepreneurial activities in their areas 	

Middle management	in headquarters	<p>MB</p> <ol style="list-style-type: none"> gaining transparency of the entrepreneurial activities that already go on, and give an award for entrepreneurial activity Then reward it, make sure that our management see that there is personal recognition for this kind of thinking this idea from Milde of certification of a branch to be capable of investing and making their own local decisions -> autonomy more involvement of the regional companies in the opportunity recognition / innovation process set up of a "system house" (Milde) 	<p>PA</p> <ol style="list-style-type: none"> Get the right local people on board, with full attention to this business keep the organisation lean set priorities, set the right priorities 	<p>CC</p> <ol style="list-style-type: none"> strengthening of the evaluation and decision making on entrepreneurial opportunities; empowerment giving the accountability, and monitoring the thing afterwards rewarding the team that has worked on that <p>JT</p> <ol style="list-style-type: none"> cultural change towards more freedom and failure forgiveness free time for senior management watching out for new entrepreneurial opportunities positive competition towards new entrepreneurial endeavours (granting awards etc.) 	<p>SA</p> <ol style="list-style-type: none"> spend enough time to identify who we have on board (entrepreneurs), get the right people on board start communication, connect people, set up a network of entrepreneurs do something similar as 3i in the area of entrepreneurship -> recognition
	in entities	<p>RS</p> <ol style="list-style-type: none"> Change the culture of too many limitations, and no risk taking missing capabilities bad measuring systems - KPIs, do not measure capabilities or performance adequately reason for missing capabilities: inflexible salary system 	<p>YW</p> <ol style="list-style-type: none"> build up the sales setup to push the sales in the different countries, build up processes to collect the requirements and the market information from the countries define clear responsibility of the different functions 	<p>RS</p> <ol style="list-style-type: none"> change in management style, organisation style, having people with full responsibilities, organisational simplification, smaller groups, no matrix you need the right people ... everybody has to trust this guy Target setting, incentives. 	

Table 8-9 – Organisations and Processes – Reported top action items

K2.5 – Organisations and Processes – Reported top action items - Cluster analysis

Elements <i>occurrence</i>		Case1	Case2	Case3	Siemens	CEO / CFO / PL		Middle management	
		FS KR	SMART	SP	overall	HQ	subsidiary	HQ	subsidiary
introduce entrepreneurial KPIs, transparency, entrepreneurship awards	6	MB, SHW		JD, CC, JT	SA		JD	MB, CC, JT, SA	SHW
empowerment, accountability, more responsibility, ownership	6		KH, YW	CC, RS, KS	PM	PM, KS	KH	CC	YW, RS
motivation, rewards, compensation	4	HWK, MB		CC, RS			HWK	MB, CC	RS
reduce complexity (organisation, regulation, processes)	4	HWK	PA	JD, RS			HWK, JD	PA	RS
decisiveness, decisions, set priorities, give focus	4		PA, RD	KS	PM	RD, KS, PM		PA	
get the right entrepreneurial people	4	SHW	PA	RS	SA			PA,SA	RS, SHW
collaboration of headquarters with regional companies	3	MB	RD		HM	RD, HM		MB	
provide more autonomy, freedom	3	MB, SHW	KH				KH	MB	SHW
more, better communication; best practice sharing Siemens-wide	3			JD	PM, SA	PM	JD	SA	
trust	2	HWK	RD			RD	HWK		
allow new venture organisations, strengthen respective organisations	2		YW		HM	HM			YW
foster entrepreneurial thinking	2			JT	HM	HM		JT	
failure forgiveness	1			JT				JT	

Legend: yellow marked cells contain most respondents (but consider disproportionate numbers of respondents per column!)

Table 8-10 – Organisations and Processes – Reported top action items - Cluster analysis

K3.1 – Granted Mandates – Reported key issues

		Case1: Shinwha – FS KR	Case2: SMART	Case3: SP	Siemens in general
CEO / CFO / PL	in headquarters		<p>RD</p> <ol style="list-style-type: none"> 1. big issue about the fear in Germany to lose business to far East 2. tremendous culture change when setting now a focus on M3 market mandates 3. SMART mandates are still only known to a few people within the overall Siemens organisation 	<p>KS</p> <ol style="list-style-type: none"> 1. decision making capabilities are not really used in practice 2. too much room for expectation management of superiors 	<p>PM</p> <ol style="list-style-type: none"> 1. good approach of use-cases (SMART) – is much clearer to employees than just abstract responsibility lists 2. in SP new setup, there are communication leaks 3. FS KR: problems with clarifications for international projects 4. mandates for Far East countries also create fears among European employees to lose their jobs <p>HM</p> <ol style="list-style-type: none"> 1. SMART: not clear how this will work in the end – we mix responsibilities! 2. “one side, you centralise everything, and on the other hand, you decentralise, this is a barrel burst!” 3. SMART on a global scale. “It is chaos per definition! Whenever we.. would really have entrepreneurship, this organisation would have exploded much earlier then it will come”
	in entities	<p>HWK</p> <ol style="list-style-type: none"> 1. “there is no own decision, only top down guideline, rules and regulation. Only implementing the regulation, that's all.” 2. In terms of competence centre [extinguishing], that stopped, no progress” 3. “...only ping-pong. [...] Everybody is saying, is not my job, but I can give opinion, I can coach, but is not my responsibility. It's a ping-pong.” 	<p>KH</p> <ol style="list-style-type: none"> 1. try the use-case approach as in SMART 2. in the end you need the real heart blood of the responsible to make it fly 	<p>JD</p> <ol style="list-style-type: none"> 1. changing the SP mandates was quite an effort – a lot of time invested with many countries, many issues to be sorted out (shared offices etc.) 2. excavation has been tremendously difficult sometimes... 3. “being carved out” leads to significant challenges about going on with the business 	

Middle management	in headquarters	<p>MB</p> <ol style="list-style-type: none"> 1. FS KR mandate is not backed by a local strategy 2. current low performance drastically reduces the “mandate” – the autonomy to decide about major steps 3. misalignment of objectives between local beliefs and the headquarter strategy 	<p>PA</p> <ol style="list-style-type: none"> 1. mandate of the SMART project and the SMART HQ is pretty clear 2. challenge is the freedom on an operational level when going global 3. communication is a key issue 	<p>CC</p> <ol style="list-style-type: none"> 1. iMetrex: complete confusion about the mandate 2. SP: mixed up mandates because of the different geographical coverage of FS and SES 3. SP new setup: clear mandate, but internal fights about losing the products now 4. communication: deliberate strategy from some executives to never write down anything – to not be accountable in the end <p>JT</p> <ol style="list-style-type: none"> 1. do I really have to care about mandates? It is only important that someone decides! 2. thinking in mandates gives blindness for all missed business opportunities – I am just doing what I have an explicit mandate for 3. current problems are: “zero risk culture, not willing to expose himself, career orientation, not being accountable” 	<p>SA</p> <p>---</p>
	in entities	<p>SHW</p> <ol style="list-style-type: none"> 1. more flexible mandate required to react to the market situation and market requirements 2. specific processes required for level-1 and level-2, especially approval process definitions 	<p>YW</p> <ol style="list-style-type: none"> 1. on first sight we got a clear SMART mandate – but how to really synchronize with all the countries and respective portfolios? 2. missing mandate foundation: no clear structure how we think regarding market characteristics – it is not just about product features to successfully separate market segments! 	<p>RS</p> <ol style="list-style-type: none"> 1. huge change in SP new setup 2. much more alignment of mandates than before – by repeated discussions with all involved (HQ and regional companies) 3. rather weakly defined at the moment 	

Table 8-11 – Organisations and Processes – Granted Mandates – Reported key issues

K3.2 – Granted Mandates – Reported key issues – Cluster analysis

Elements <i>occurrence</i>		Case1	Case2	Case3	Siemens	CEO / CFO / PL		Middle management	
		FS KR	SMART	SP	overall	HQ	subsidiary	HQ	subsidiary
Unclear / missing mandate	5	HWK		JD, CC, RS	HM	HM	HWK, JD	CC	RS
Contradicting mandates / not backed mandates by strategy etc.	4	MB	YW	CC	HM	HM		MB, CC	YW
Mandates not accepted / fought against	4	MB	RD, PA		PM	RD, PM		MB, PA	
Not deciding on mandates / avoiding defined mandates	4	HWK		CC, JT	PM	PM	HWK	CC, JT	
Lack of mandate communication	3		RD, PA		PM	RD, PM		PA	
Difficulty to work as mandated	2		YW	JD			JD		YW
Mandates are not used in practice	1			KS		KS			
Mandate limited by actual performance	1	MB						MB	
Expectation management	1			KS		KS			

Legend: yellow marked cells contain most respondents (but consider disproportionate numbers of respondents per column!)

Table 8-12 – Granted Mandates – Reported key issues – Cluster analysis

K3.3 – Granted Mandates – Proposed top action items

		Case1: Shinwha – FS KR	Case2: SMART	Case3: SP	Siemens in general
CEO / CFO / PL	in headquarters		RD 1.grant more trust to business responsible	KS 1.reduce the basis for expectation management 2.reduce massive gaps between current capabilities – and required capabilities (sales, thinking from customer needs instead from developed products)	PM 1.clear and cascaded communication, all levels in the organisation have to be addressed adequately HM 1. more clarification concerning responsibilities 2. current ideas of mandates have to be drastically changed / clarified to allow real entrepreneurship
	in	HWK 1. clearer communication for headquarters required 2. clearer definition for the driver for an issue 3. faster decisions required, use deadlines	KH 1.define mandates by concrete use-cases	JD 1.clearer communication, more repetition of communication 2.invest more in relationships to really make it happen in the end	
Middle management	in headquarters	MB 1.close the capability gaps first (sales, project execution, set up of a local strategy) 2.align FS HQ strategy with local FS KR strategy in a way which is backed by FS KR employees	PA 1.communication: make people understand their roles 2.interpret mandates as adaptable, and adapt them consequently	CC 1. more written and published mandates 2. address more openly conflicting mandates, and solve them 3. set priorities, don't try to do ten things at the same time JT 1. foster decisiveness, don't believe in mandates 2. to do so, get away from the current "zero risk" culture	SA ---
	in entities	SHW 1. separate process definition for level-1 and level-2 required within Korea 2. if the global products are too expensive, there has to be a way to have cheaper local products	YW 1. grant more freedom to act on local markets 2. freedom to build up the sales channels globally (M3 – SMART)	RS – New SP setup 1. clarify the mandate, make the boss a real CEO 2. reduce number of regulations, thus enhance the area of local competences to decide	

Table 8-13 – Granted Mandates – Proposed top action items

K3.4 – Granted Mandates – Proposed top action items – Cluster analysis

Elements <i>occurrence</i>		Case1	Case2	Case3	Siemens	CEO / CFO / PL		Middle management	
		FS KR	SMART	SP	overall	HQ	subsidiary	HQ	subsidiary
more / better communication, better definitions, written definitions, make use-cases, align with strategy	8	HWK, MB	KH, PA	JD, CC, RS	PM	PM	HWK, KH, JD	MB, PA, CC	RS
grant more freedom for local organisations, allow adaptation of mandates, resolve mandate conflicts	5	SHW	YW	CC, RS	HM	HM		CC	SHW, YW, RS
clearer definition of responsibilities, of the drivers of a topic; make the driver a CEO	3	HWK		RS	HM	HM	HWK		RS
get away from the current “zero risk culture”, foster decisiveness, grant trust, invest in relationships	3		RD	JD, JT		RD	JD	JT	
faster decisions, clear priorities	2	HWK		CC			HWK	CC	
reduce the gap between current capabilities, and required capabilities	2	MB		KS		KS		MB	
stop expectation management	1			KS		KS			
reduce number of regulations	1			RS					RS

Legend: yellow marked cells contain most respondents (but consider disproportionate numbers of respondents per column!)

Table 8-14 – Granted Mandates – Proposed top action items – Cluster analysis

K4.1 – Long Term Orientation – Reported key issues

		Case1: Shinwha – FS KR	Case2: SMART	Case3: SP	Siemens in general
CEO / CFO / PL	in headquarters		<p>RD</p> <ol style="list-style-type: none"> 1. time horizon in SMART is appropriate 2. BU heads should stay for 5 to 7 years 3. leaving executives should also be measured by a well filled innovation pipeline 4. have not experienced a direct relation between length of service and delivered results 	<p>KS</p> <ol style="list-style-type: none"> 1. not convinced about the current “rotation model” of executives -> too big loss of domain knowledge 2. longer term stays would improve business results and the notion to go for entrepreneurial endeavours 	<p>PM</p> <ol style="list-style-type: none"> 1. three years time frame for executives is too short to be confronted with your failures and your successes 2. “if you look at the changes we had in Korea, which is part of the disaster we are in, you see the delivered business results” <p>HM</p> <ol style="list-style-type: none"> 1. “we are changing people too often in key positions” 2. “nobody has to... handle the mistakes he has done, and to bring it in an appropriate situation” 3. therefore executives go for short term optimization 4. on the other side, shorter terms have “the advantage that having new people, they have new ideas, and that brings a good... let’s say... that avoids that you become ... lethargic.”
	in entities	<p>HWK</p> <ol style="list-style-type: none"> 1. Siemens considered after the acquisition 5 years – this is the right way 2. regarding innovations, planning is currently too short term 3. executives (Sascha, Sander): too short, five years would be better 4. length of service is very important, business is based on long term relationships and selling of big projects by top management 	<p>KH</p> <ol style="list-style-type: none"> 1. think about having local people in the key roles 2. executives are too short in respective positions, no “footprint” achievable, results not measurable 3. five years would be OK 	<p>JD</p> <ol style="list-style-type: none"> 1. SP strategy: less than 3 years is unrealistic, more than 3 years indicates too little decisiveness to reach goals 2. Siemens CEOs: should stay for 5 years 3. “length of service is a massive issue, because if it is too short, you don’t see things through, it sends all the wrong messages to the staff, and they don’t become entrepreneurial, they don’t care” 4. “it was a standing joke amongst my staff about how long new CEOs may gonna last” 	

Middle management	in headquarters	<p>MB</p> <ol style="list-style-type: none"> 1. long term service of previous company heads 2. very short term stays of Sascha and Sander -> in an acquisition, leadership consistency is required 3. integration should have been speeded up 	<p>PA</p> <ol style="list-style-type: none"> 1. personally I miss a five years roadmap in SMART: to which countries to go, and why 2. short term stays of executives always bear the risk that the decisions are not sustainable 3. longer term stays bear the risk of losing flexibility, having no fresh blood, no new ideas 4. currently it is rather that we maybe don't have the right – entrepreneurial – people 	<p>CC</p> <ol style="list-style-type: none"> 1. SP old setup: planning was too long term, without really changing something, not following up the results, just kept on it without reaching the goal 2. FS extinguishing is exactly the same... 3. "I don't believe three years is the right time, I believe five years is more the right time, at the same time I believe that some people turn blind after five years, I believe that some managers are here for five years, and they don't change anything, because it has worked for the last five years." <p>JT</p> <ol style="list-style-type: none"> 1. length of service of key executives is too short 2. entrepreneurial means a kind of investment, where you are also harvesting in the end 3. decisions take too long, we repeatedly miss windows of opportunity 	<p>SA</p> <ol style="list-style-type: none"> 1. retention of executives is quite high 2. required duration in executive jobs depends on the specific circumstances 3. relation of length of service to delivered results depends on people and circumstances 4. senior executive retention plans (shares, stock options) are very long term
	in entities	<p>SHW</p> <ol style="list-style-type: none"> 1. CEOs should stay for 4..5 years, today it is just a short term focus on delivered profit 2. also dependent on the person – Sascha was highly entrepreneurial despite only staying three years 	<p>YW</p> <ol style="list-style-type: none"> 1. executive stays are too short 2. I don't see a big influence from the boss sitting here – we are doing the business anyway (middle management of FS China is very long term) 3. longer term stays in general means more entrepreneurial, shorter term stays will lead to short term optimization 	<p>RS</p> <ol style="list-style-type: none"> 1. no real strategy in the old set-up, therefore a time horizon was no issue 2. CEO service periods previously 2..3 years – clearly too short 3. key issue in longer term horizons needed for product innovations – but a two year horizon to carve SP out 4. I don't see a systematic relation of length of service and delivered results 	

Table 8-15 – Long Term Orientation – Reported key issues

K4.2 – Long Term Orientation – Reported key issues – Cluster analysis

Elements <i>occurrence</i>		Case1	Case2	Case3	Siemens	CEO / CFO / PL		Middle management	
		FS KR	SMART	SP	overall	HQ	subsidiary	HQ	subsidiary
executives should stay longer	14	HWK, MB, SHW	RD, KH, PA, YW	KS, JD, CC, JT, RS	PM, HM	RD, KS, PM, HM	HWK, KH, JD	MB, PA, CC, JT	SHW, YW, RS
existing relation of executive stay and delivered results (growth, profit)	2		YW	KS		KS			YW
no relation of executive stay and delivered results (growth, profit)	2		RD	RS		RD			RS
too long stays of executive lead to less entrepreneurial activity	2		PA		HM	HM		PA	
relation of executive stay and delivered results is person dependent	2	SHW			SA			SA	SHW
innovation pipeline should also be measured	1		RD			RD			
appoint more locals into executive positions	1		KH				KH		
executives lack entrepreneurship	1		PA					PA	
long term strategy, but was neither achieved nor corrected	1			CC				CC	
decisions take too long	1			JT				JT	

Legend: yellow marked cells contain most respondents (but consider disproportionate numbers of respondents per column!)

Table 8-16 – Long Term Orientation – Reported key issues – Cluster analysis

K4.3 – Long Term Orientation – Proposed top action items

		Case1: Shinwha – FS KR	Case2: SMART	Case3: SP	Siemens in general
CEO / CFO / PL	in headquarters		RD 1.close the loop towards entrepreneurship: make the executives accountable, let them build up businesses, measure them -> make it five years on average	KS 1. longer term stays of executives and key employees -> knowledge is key, especially at BT 2. hire more people from outside – from the same industry – then from other Siemens divisions	PM 1. longer stays of executives, but depending on the situation 2. turn around situations - like FS several years ago – need more than 3..5 years HM 1. change the Siemens career model to 5..10 year stays 2. simplify the organisation to make responsibilities clear 3. get rid of the current culture that everybody wants to be involved, but nobody is in the end responsible
	in entities	HWK 1. longer periods of service for executives 2. long term perspective of increasing the quality of products and employees required 3. common understanding and mutual agreement regarding the development of new products with HQ required 4. caring for the employees, give them a long term vision, motivate them	KH 1. go for 5 years in executive positions 2. appoint more local people	JD 1. Siemens CEOs should stay for 5 years 2. poor performance needs to have consequences; you have to follow and track every aspect of the business 3. succession planning must reward entrepreneurs 4. promotion of entrepreneurship and entrepreneurs must be communicated	

Middle management	in headquarters	<p>MB</p> <ol style="list-style-type: none"> organise next time a longer term integration manager do integrations faster clearly indicate to FS KR employees that the Siemens engagement is long term – no carve out planned 	<p>PA</p> <ol style="list-style-type: none"> SMART: create a transparent 5 year roadmap make sure that the right people stay the right time in executive positions -> domain experience, entrepreneurial orientation, experience in business development, focussed (not 1000 jobs in parallel) 	<p>CC</p> <ol style="list-style-type: none"> it is not primarily about the time of service, you can have shorter stays of highly entrepreneurial executives, you can have longer stays and nothing is changed key is to get into a risk-taking culture key is to have executives really interested in the business – not asking the first day what their next job in two years time will be executives should be measured in targets beyond one year set the right incentives <p>JT</p> <ol style="list-style-type: none"> average time of service should be five years CEO: 5..10 years at the same time, faster decision cycles are required 	<p>SA</p> <ol style="list-style-type: none"> the new CEO principle is the right approach, but needs further time to be fully implemented achievements have to be judged individually
	in entities	<p>SHW</p> <ol style="list-style-type: none"> go for 4.5 years in executive positions change the performance measuring, include the creation of new businesses set up longer term incentives – incentive plans 	<p>YW</p> <ol style="list-style-type: none"> longer stays preferable, but very limited influence on the real work done at FS China 	<p>RS</p> <ol style="list-style-type: none"> clearly defined time targets, and respective milestones 	

Table 8-17 – Long Term Orientation – Proposed top action items

K4.4 – Long Term Orientation – Reported top action items– Cluster analysis

Elements <i>occurrence</i>		Case1	Case2	Case3	Siemens	CEO / CFO / PL		Middle management	
		FS KR	SMART	SP	overall	HQ	subsidiary	HQ	subsidiary
longer stays of executives, around five years for a CEOs	12	HWK, MB, SHW	RD, KH, PA, YW	KS, JD, JT	PM, HM	RD, KS, PM, HM	HWK, KH, JD	MB, PA, JT	SHW, YW
make executives accountable, measure and incentivise performance over several years, low performance has to have consequences	6	SHW	RD	JD, CC, RS	HM	RD, HM	JD	CC	SHW, RS
appoint different people: locals, true entrepreneurs, not career makers	5		KH, PA	KS, JD, CC		KS	KH, JD	PA, CC	
knowledge drain: longer stays improve capabilities	2	HWK		KS		KS	HWK		
care for employees, motivate them, communicate entrepreneurship	2	HWK		JD			HWK, JD		
simplify the organisation to clarify responsibilities	1				HM	HM			
do integrations faster	1	MB						MB	
change culture towards risk-taking	1			CC				CC	
faster decisions required	1			JT				JT	

Legend: yellow marked cells contain most respondents (but consider disproportionate numbers of respondents per column!)

Table 8-18 – Long Term Orientation – Reported top action items – Cluster analysis

K5.1 – Interactions between aspects

Used abbreviations for the elements interacting: OP – organisations and processes, GM – granted mandates, LTO – long term orientation

		Case1: Shinwha – FS KR	Case2: SMART	Case3: SP	Siemens in general
CEO / CFO / PL	in headquarters		<p>RD</p> <ol style="list-style-type: none"> 1. all influence each other to a certain extent... 2. GM -> OP, GM has to fit into the organisation (has then to be setup that way) 3. GM -> LTO: GMs are long term oriented! 4. LTO -> OP: OP could be short term oriented, organisation can regularly be adapted 	<p>KS</p> <ol style="list-style-type: none"> 1. LTO does not depend on the other elements, can be established anyway 2. GM: great mandates require strong people 3. OP: processes depend on the availability of knowledgeable people, competences of people 	<p>PM</p> <ol style="list-style-type: none"> 1. LTO – OP: setting up OP requires a long term orientation 2. OP -> LTO: good processes allow short term orientation, you can replace people more easily; weak processes imply long term orientation = people dependence 3. LTO->GM short term orientation makes it difficult to grant mandates <p>HM</p> <ol style="list-style-type: none"> 1. OP -> GM: OP defines mandates 2. GM -> LTO: time limited mandates kills long term entrepreneurial aspects 3. OP <-> LTO good balance required, don't keep a certain organisation forever, adaptation all 3..6 years required 4. overall: good balance required
	in entities	<p>HWK</p> <ol style="list-style-type: none"> 1. is a <i>network</i> of many interactions 2. OP -> LTO: good and efficient processes create motivation, people will stay long term + create profit -> allows long term investments into new business 3. GM -> LTO an entrepreneurial mandate is long term 4. GM -> OP: clear understanding of the mandate leads to respective process improvements 	<p>KH</p> <ol style="list-style-type: none"> 1. GM -> OP: the more unclear the mandates, the more processes you need 2. OP: with more processes, you kill entrepreneurship, you get thousands of steps to follow -> slow down, really really long... 3. LTO – OP: you need a stable organisation for LTO, but they should evolve over time 	<p>JD</p> <ol style="list-style-type: none"> 1. all factors are linked 2. GM -> OP/LTO: GM are needed within the organisation and have to be linked to LTO to make real progress 3. GM <-> organisation: catch-22 situation! 4. LTO -> OP people being there long term will challenge OP more 	

Middle management	in headquarters	<p>MB</p> <ol style="list-style-type: none"> OP -> GM: a global organisation needs to grant mandates in a clear and easy way OP -> LTO: processes should even allow for short term implementations 	<p>PA</p> <ol style="list-style-type: none"> GM <-> OP: there are dependencies, there are relations... LTO -> OP: set up and change the organisation according to your long term strategy / goals GM -> LTO: strategy has to be long term, and GM has to be in line with strategies 	<p>CC</p> <ol style="list-style-type: none"> OP – GM: a process implicates mandates LTO <-> GM: mandates have to be longer term OP -> GM: a process implicates mandates <p>JT</p> <ol style="list-style-type: none"> GM -> LTO: mandates have to be long term oriented OP -> GM: disagree that OP defines GM OP -> GM/LTO: if you change the organisation every third year, you cannot have a CE with the same mandate for 10 years -> requires some "mental" continuity roles in process are <i>never</i> people independent 	<p>SA</p> <ol style="list-style-type: none"> OP follows GM and LTO LTO is key aspect (which we have lost over the years) LTO -> GM people need to have GM to follow LTO goals processes are needed to run an organisation, it is the "oil in the engine" people are the key factor (not processes), and long term goal definition defines the required capabilities of people, and the you define mandates, and appropriate organisations and processes
	in entities	<p>SHW</p> <ol style="list-style-type: none"> OP->LTO: OP should be stable and support new businesses OP->GM: OP should support GM GM should be quite stable 	<p>YW</p> <ol style="list-style-type: none"> all linked to each other OP -> LTO, if the process gives a certain kind of freedom -> satisfaction -> LTO of employees OP -> GM: complex process and organisation avoids clear mandates GM -> LTO the appropriateness of mandate defines about the LTO of employees LTO -> OP: long term orientation will lead to more business oriented organisations OP -> LTO: if OP provides a certain freedom for decision, and respective satisfaction, people will stay long term LTO -> OP: long term staying people will change organisations as required 	<p>RS</p> <ol style="list-style-type: none"> OP -> GM: the clearer and easier the organisation, the more easily you can give mandates, it follows out of the organisation GM -> LTO: a meaningful (entrepreneurial) GM has to have a long term horizon processes: do not interact 	

Table 8-19 – Interactions between aspects

K5.2 – Interactions between aspects – Cluster analysis

Elements <i>occurrence</i>		Case1	Case2	Case3	Siemens	CEO / CFO / PL		Middle management	
		FS KR	SMART	SP	overall	HQ	subsidiary	HQ	subsidiary
General									
all aspects are interacting	3	HWK	RD, YW			RD	HWK		YW
all aspects have to be well balanced	1				HM	HM			
Organisations and processes OP									
OP to be adapted / changed over time according to the LTO goals	4		RD, KH, PA		HM	RD, HM	KH	PA	
people being there long term will much harder challenge for OP	1			JD			JD		
setting up OP requires LTO	1				PM	PM			
OP need a certain stability over time to allow LTO, but adaptations are required nevertheless	3	SHW	KH	JT			KH	JT	SHW
OP <i>define</i> GM, GM <i>follow</i> out of the organisation	2			RS	HM	HM			RS
OP does <i>not</i> define GM - but follow GM / LTO	2			JT	SA			JT, SA	
OP <i>need / implicate</i> defined mandates	1			CC				CC	
OP have to support GM, have to be set up according to GM	1		RD			RD			
OP require competent and knowledgeable people	3			KS, JT	SA	KS		JT, SA	
well defined OP foster LTO of employees	2	HWK	YW				HWK		YW
well defined OP allow short term orientation by people independence	1	MB			PM	PM		MB	
complex OP avoid clear mandates	1		YW						YW
process aspect does not interact with other factors	1			RS					RS
too many processes kill entrepreneurship	1		KH				KH		
Granted Mandates GM									
GM have to be long term, otherwise they are	8	HWK,	RD	JD, CC,	SA	RD	HWK, JD	CC, JT,	SHW, RS

not entrepreneurial		SHW		JT, RS				SA	
great mandates require strong people	2			KS	HM	KS, HM			
well defined long term mandates lead to improvements of OP; badly defined mandates lead to too many processes	2	HWK	KH				HWK, KH		
GM have to be in line with LTO strategies	2		PA		SA			PA, SA	
appropriate GM create LTO of employees	1		YW						YW
GM and organisation: catch-22 situation!	1			JD			JD		
Long Time Orientation LTO									
LTO is required to set up and improve OP	4		PA, YW	JD	PM	PM	JD	PA	YW
LTO is required to grant appropriate mandates	2				PM, SA	PM		SA	
LTO does not interact with other factors	1			KS		KS			

Legend: yellow marked cells contain most respondents (but consider disproportionate numbers of respondents per column!)

Table 8-20 – Interactions between aspects – Cluster analysis

K5.3 – Importance of key aspects – Cluster analysis

Interviewees have been asked to rate the importance of key aspects on scales of 1 (not important) to 5 (very important). 12 Respondents provided respective judgments. Peter Mueller (PM) split his opinion along the three investigated cases, reflected here in three values in the left half of the table, and a summary value on the right. Split values for organisations and processes are taken with half the weight when building the averages.

Elements	<i>average</i>	Case1	Case2	Case3	Siemens	CEO / CFO / PL		Middle management	
		FS KR	SMART	SP	overall	HQ	subsidiary	HQ	subsidiary
Organisation & Processes		SHW: 4 HWK:4	RD: 4 PM: 5 PA: 5 YW: 4	KS: 4 PM: 3 JD: 3 CC: 3		RD: 4 KS: 4 PM: 4	JD: 3	HWK:4 PA: 5 CC: 3	SHW: 4 YW: 4
- Organisation				RS: 5	HM: 4-5	HM: 4-5			
- Processes		PM: 4	KH: 2	RS: 2	HM: 4	HM: 4	KH: 2		
	=4	= 4	= 4.22	= 3.5	=4.25	=4.1	=2.7	=4	=4
Granted Mandates		SHW: 2 PM: 2 HWK: 5	KH: 5 RD: 5 PM: 4 PA: 4 YW: 4	KS: 4 RS: 5 PM: 5 JD: 3 CC: 2	HM: 2-3	RD: 5 KS: 4 HM: 2-3 PM: 3.7	KH: 5 JD: 3	HWK: 5 PA: 4 CC: 2	SHW: 4 YW: 4
	=3.6	= 3	= 4.4	= 3.8	= 2.5	=3.8	=4	=3.7	=4
Long Term Orientation		SHW: 3-4 PM: 5 HWK:4	KH:4 RD: 3 PM: 3 PA: 3-4 YW: 5	KS: 4 RS: 2 PM: 2 JD: 5 CC: 3	HM: 3	RD: 3 KS: 4 HM: 3 PM: 3.3	KH:4 JD: 5	HWK:4 PA: 3-4 CC: 3	SHW: 3-4 YW: 5
	=3.6	= 4.2	= 3.7	= 3.2	= 3	=3.3	=4.5	=3.5	=4.2

Table 8-21 – Importance of key aspects – Cluster analysis

K6.1 – Further reported issues – Findings and action items

		Case1: Shinwha – FS KR	Case2: SMART	Case3: SP	Siemens in general
CEO / CFO / PL	in headquarters		<p>RD</p> <ol style="list-style-type: none"> 1. allow mistakes! 2. avoid making entrepreneurial activities “Himmelfahrtskommandos” – all chances to fail, but no big reward and recognition if you succeed 3. “it is very much in the cultural arena, so... I think the top three for me which come to my mind would be: quick decision making, would be collaboration... and... well, might be a very similar, but I say it never the less: third would be: trust.” 4. “we are still a very German minded company... [...] ... most of the management is still German, and the others got very German minded...”. “I think, in terms of risk taking, German people are typically quite risk-aware, so... also we at Siemens have certainly a tendency to more focus on the short term things, on the existing things...” 	<p>KS</p> <ol style="list-style-type: none"> 1. “...the culture of bringing to table topics which will give longer term value and taking risks, or taking responsibility for bringing such.. investing in such areas, this needs to come.” 2. “First of all there has to be a culture of taking decisions, and taking ownership, this has to be broadened.” 3. “BT needs to hire more people from competition, and not so much from internal... found within Siemens” 4. “there is too much room for expectation management. And this I see is a really translation ... a failure in translating our ideas to reality, because it's not so much about how best we can exploit an opportunity. It's pretty much about: what is your perception, and how do I keep your perception in a frame work that I can that outperform, and then everybody is happy.” 5. In M&A processes, there is no entrepreneurship. Far too many stakeholders are involved there -> process too slow, you miss many opportunities, overall picture is missed later on in the integration phase (no explicit mentioning of trust) 	<p>PM</p> <ol style="list-style-type: none"> 1. “we are in a change process, because now it is the time - what we predicted three to four years ago - when we said the investment into the old portfolio due to the streamlining will go down, and we have more money to invest in innovations - is now available, because we increased innovation and new topics in our budget significantly; we have not yet reached the level of competence in all these new business types to really drive it forward.” (no explicit mentioning of trust and culture) <p>HM</p> <ol style="list-style-type: none"> 1. “...we are running the wrong direction! At the moment, nobody wants to make a decisions, because as soon as he does a decision, and it might be that this decision is wrong, we have the culture that we need to find somebody who has done the decision, and... because it was a wrong decision, he needs to be punished.” 2. today there is a type of “audit culture”, to find mistakes, and to blame people – this kills entrepreneurship 3. “...in the recruiting process: to have more people who really are... willing to make this decision and have the capabilities to do it. And at the end, I mean... this cultural change, we can as well try to influence the line management in order to go more in this direction...” (no explicit mentioning of trust)

	in entities	<p>HWK</p> <p>1. "...Siemens policy, is very simple: don't trust the employee, don't trust the customer. This is their principle! Based on this principle how we do the business? But we can do the compliance in another arrangement. We trust the people, we trust the customer, we trust the officials behaviour. Then, we can do."</p> <p>2. "...caring the people. People is the number one asset in the solutions business. Mean: to motivate people, need to give a clear vision to them."</p> <p>3. "German culture is more... logical... and then based on... contract.. very logical. Korean culture: less logical, less contraction, but more emotion, more based on... human relationship." (no explicit mentioning of culture)</p>	<p>KH</p> <p>1. culture has to be fostered towards allowing mistakes; people are today not willing to take over these risks since they are considered as "Himmelfahrtskommandos", where you can lose everything, but gain little in case of success</p> <p>2. -> entrepreneurial success has also to be made public, and the real drivers behind have to be honoured</p> <p>3. "everything starts with the vision, why I am here, what makes me unique, I mean: this kind of: why somebody pay my salary, yeah, I am part of this kind of organisation, and, based on the vision, you have a strategy, and then you can say: OK, what are the different business fields I would like to invest in..." (no explicit mentioning of trust and culture)</p>	<p>JD</p> <p>1. "within the body of the business, you know, people are quite cynical about people development, and therefore entrepreneurship"</p> <p>2. "the culture and the KPIs don't really encourage true customer and market engagement. As a result of which, entrepreneurship is reduced, because these guys aren't being faced with opportunities."</p> <p>3. "It's culture. I think, we are too... the behaviours got rewarded are not necessarily in line with the behaviours of entrepreneurship." (no explicit mentioning of trust)</p>	
--	--------------------	---	--	--	--

Middle management in headquarters	<p>MB</p> <ol style="list-style-type: none"> 1. "there is a fundamental operating level that you must achieve before I trust you to take risks with entrepreneurial activities. 2. "if you are the leader in a business unit, at the moment the culture is: not to show that you taking risk! And I think you have to be seen to be taking risks, if you want to foster entrepreneurial activity." 3. "inherent nature of people in my belief is you want to do a good job for someone who you respect." 4. "We breed this kind of person to be internally focussed, and then we expect them to be called an entrepreneur." 5. go for the Milde approach to establish a "global systems house" 6. go for Mildes approach to have certified subsidiaries -> certification level defines the level of freedom 	<p>PA</p> <ol style="list-style-type: none"> 1. "dominant are the management values, the way of driving business in Siemens... This would be then important, if you would have these autonomy seeking people... and also the environment... which we don't have." 2. "act local, and serve lean" 3. "...there are other requirements which are at least so important as the period of service. The work load - that this person can really serve... and is available, not having thousand jobs beside this... focussed... Domain experience... and experience in business development." 4. "it is more important to have the right people, and in general to reduce hindering factors. " <p>(no explicit mentioning of trust and culture)</p>	<p>CC</p> <ol style="list-style-type: none"> 1. "it is now in the culture, that when people even come to an interview, they're already saying: what do I have... what is gonna be done in two years. So I think that is wrong, That is really... [...] too short scopes in career planning." 2. "I believe that there is a risk taking culture that you need." 3. the appropriate culture is overall very important (no explicit mentioning of trust) <p>JT</p> <ol style="list-style-type: none"> 1. "Zero risk culture, not willing to expose himself, career orientation, not being accounted." 2. "I would say we have enough resources, but we lack the culture of trial and error, and we don't want to get punished for doing something wrong, and... now coming back which also goes to the fundamental cultural aspect of a large corporation, Siemens style, where... rather following the rules than trying something new, and entrepreneurial: try something, take the risk. So in that sense: I would say: resources is not the issue, the culture is the issue." 3. "Let's say, Siemens in that sense is... has a rule based culture, and not a value based culture, because you can achieve the integrity, and compliance also by living it. By trust." 4. "if we as Siemens want to be successful as a global player, we will fail if we think the German way" 	<p>SA</p> <ol style="list-style-type: none"> 1. key issue is how to identify entrepreneurs, especially in interviews – what is our reference profile out of Siemens Leadership Framework 2. "I think it has a lot to do with culture, and if you look at the latest approach that Peter Löscher has taken to innovation by reminding us of being a company of pioneers, I think he has taken this cultural aspect of entrepreneurship very much into making sure that the organisation feels: there is space to be an entrepreneur, and to be innovative..." 3. "...this thing "if Siemens knew what Siemens knows"... and I think there is a lot to that! We have a lot of knowledge within the organisation, but we tend to reinvent the wheel sometimes, because we just don't know that somebody else is working on the same thing." 4. "...in general I think again it is a cultural thing, and even an inter-cultural thing, you would find more risk takers in other cultures than in Germany... The German culture per definition is not particularly risk taking." <p>(no explicit mentioning of trust)</p>
--	--	---	---	--

	in entities	<p>SHW</p> <ol style="list-style-type: none"> 1. more exchange needed between business units about their businesses, innovative ideas and approaches (instead of just exchanging past business figures) 2. "It very much depends on the company culture. But... in case of Siemens, Siemens is a very conservative company, and they... the people don't want to change and process and regulations; I think the... in Siemens, not easy to be an entrepreneur" 3. "also we need the speed, but we don't have any speed in our company organisations..." <p>(no explicit mentioning of trust)</p>	<p>YW</p> <ol style="list-style-type: none"> 1. we need a leaner development, and a leaner production / logistics 2. "And right now, the situation is that if something goes wrong, you easily can shift your responsibility, oh this does not belong to my responsibility, somebody has done something wrong..." 3. "I have to say that there is somehow a complete "no risk" [culture] to the company" 4. "...we are basically a technology company, most of the managers - they are actually... developing ourselves from engineers, so basically we have an engineers mind. And then, based on this kind of culture, we want to somehow predict various kinds of events" 5. "...these processes help everybody somehow to get rid of his own responsibility, or risk." <p>(no explicit mentioning of trust)</p>	<p>RS – New SP setup</p> <ol style="list-style-type: none"> 1. The approach to control everything should be replaced by the concept of trust. And if somebody breaks the given trust he will immediately be fired 2. "really having people with full responsibilities" → "by organisational simplification, smaller groups, no matrix" 3. "you need the right people, who are really willing to work, and accept... yeah, that if this guy is responsible, you have ... everybody has to trust this guy" 4. different culture required, getting away from an escalation culture, stop hiring people who just want to make career, establish entrepreneurial posture in the management 	
--	--------------------	--	--	---	--

Table 8-22 – Further reported issues – Findings and action items

K6.2 – Further reported issues – Cluster analysis

Elements <i>occurrence</i>		Case1	Case2	Case3	Siemens	CEO / CFO / PL		Middle management	
		FS KR	SMART	SP	overall	HQ	subsidiary	HQ	subsidiary
different people required: more competences / domain knowhow, less career oriented	7		PA	KS, JD, CC, RS	PM, HM	KS, PM, HM	JD	PA, CC	RS
culture of taking risks required (today: “zero risk culture”)	7	MB	KH, YW, RD	KS, CC, JT		KS, RD	KH	MB, CC, JT	YW
culture based on trust instead of comprehensive controlling and audits	5	HWK	RD	JT, RS	HM	RD, HM	HWK	JT	RS
too much internally focussed, engineering culture around product development, unwilling to change	5	MB, SHW	YW	JD, JT			JD	MB, JT	SHW, YW
forgiveness for failures	4		RD, YW	JT	HM	RD, HM		JT	YW
diversity/national cultures: still very German minded, national cultural gaps	4	HWK	RD	JT	SA	RD	HWK	JT, SA	
decision culture, (take decisions, take decisions quicker, speed up things)	3	SHW		KS	HM	KS, HM			SHW
set the right targets by values and KPIs, stop expectation management	3		PA	KS, JD		KS	JD	PA	
provide employee motivation by a respective vision and culture	3	HWK	KH		SA		HWK, KH	SA	
more collaboration and information exchange	3	SHW	RD		SA	RD		SA	SHW
grant rewards for entrepreneurial achievements	2		RD, KH			RD	KH		
simplify OP / leaner OP	1		YW						YW

Legend: yellow marked cells contain most respondents (but consider disproportionate numbers of respondents per column!)

Table 8-23 – Further reported issues – Cluster analysis