

Schumpeter's Entrepreneurial Function in Today's Large Corporation

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by

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Abstract

A number of studies investigated Schumpeter's entrepreneur as well as other entrepreneurial roles and innovation networks within organisations. Schumpeter introduced the entrepreneur and further brought up the entrepreneurial function that is carried out cooperatively in the large corporation. The aim of this study is to find out how the shift of the entrepreneurial function from Schumpeter Mark I to Mark II takes place when different company sizes are taken into consideration. Therefore, this research addresses the division of the entrepreneurial function across corporate functions, organisational hierarchies, activities of entrepreneurs and different intensities. With a qualitative case study approach 97 interviews in six small, seven mid-sized and eleven large companies were conducted. The analytic technique of cross-case pattern matching was used to identify emerging patterns within and across the small, mid-sized and large company case studies.

The results indicate that the corporate functions of sales and marketing, production and research and development, if existent, are involved in entrepreneurial activities but finance and controlling, human resources as well as procurement are more of a supportive nature to the entrepreneurial process across all investigated industries. In addition to that, it appears that people in leadership positions seem to be particularly important for the entrepreneurial function. Thus, an analytical framework was developed that highlights the original contribution to knowledge according to three entrepreneurial roles: the idea generators with a specific relation to sales and marketing, production and research and development, the decision maker and risk taker with regard to management, and the integrator and motivator within the organisational system. These three entrepreneurial roles and their interaction are suggested to show the dilution of Schumpeter's entrepreneur Mark I to Mark II in the larger corporation with regard to their corporate function. Due to the relatively small sample the study is of limited generalisability. Further research could therefore test the analytic framework with a more quantitative approach.

I dedicate this work to my husband Konrad
for his love, endless support, patience and encouragement
during the years of research.

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Abbreviations

CAD	computer aided design
CAQDAS	computer aided qualitative data analysis software
CEO	chief executive officer
CFO	chief financial officer
CS	case study
e.g.	exempli gratia
HRM	human resource management
I	interview
i.e.	id est
IT	information technology
n.a.	not available
P	proposition
RFID	radio frequency identification
R&D	research and development

Chapter 1. Introduction

This first introductory chapter provides a general outlook of the undertaken research project and outlines context, research gap and justification, research question, as well as the aims and objectives of the study. Furthermore, the applied research methodology and the research process of this investigation are described in brief in order to outline the general scope of research.

1.1 Research context

Across all industries and countries, companies face one common challenge: competing in an uncertain and unpredictable economic environment. Many firms try to counteract the phenomenon of uncertainty with organisational learning strategies. Learning seems to be an essential strength for firms, especially when it comes to the capability of quickly adapting to changes on the market. Furthermore, in order to remain competitive within a dynamic economic environment, it is strongly necessary for companies to innovate. Companies that are more adaptable, flexible, fast, aggressive, and innovative are better positioned not only to adjust to a dynamic, threatening, and complex external environment, but to create change in that environment (Heavey et al., 2009). That is why innovative activities of entrepreneurs are so important. Kanter stated that in today's increasingly uncertain, competitive and fast moving world, companies must rely more and more on individuals to come up with new ideas, to develop creative responses, and to push for changes before opportunities either disappear, or get exploited by others (Kanter, 1983). In the last thirty years since Kanter's statement it seems that quickness as an attribute of companies has become even more important with regard to economic changes and market trends. Continuous attentiveness and agility appear to have gained in importance.

The current research project is related to the academic field of organisational learning, innovation and corporate entrepreneurship. The diverse academic literature of this field has highlighted many different aspects of entrepreneurial roles. This investigation specifically builds upon Schumpeter's idea of the entrepreneurial function. He describes the entrepreneur as an initiating, creative and motivated person who "sees the new possibility and is able to cope with the resistance and difficulties which action always

meets outside of the ruts of established practice” (Schumpeter, 1989). These entrepreneurial active people seem to play a key role for the company when the discovery and exploitation of new opportunities are concerned. Schumpeter’s idea of a cooperatively carried out entrepreneurial function especially in larger companies points to a concept that includes a number of people who are involved in these kind of entrepreneurial activities. It further refers to larger companies with an organisational system that is differentiated according to the division of labour and the decision-making process in multiple organisational hierarchies. When innovation is concerned it appears that entrepreneurial active people interact with each other and contribute to this function.

In the academic world innovation is a broad discussed topic especially in the sense of creating changes for and within companies and their environment. Additionally, innovation is an issue that concerns various aspects of a company itself. Innovation has an impact on strategy when new technologies, processes or services are concerned, it has an impact on people and how they adapt to change due to innovation, and it has an impact on the organisational system. In practice however, innovation is a word with many facets and very different meanings and perceptions for people. As for some people innovation just means a new idea or at least something new, others also realise the consequences of innovation and its adaption. Change is challenging. This refers not only to people but also to the organisation itself. Entrepreneurial active people seem to play a key role within this innovation process. They appear to act as drivers of change and challenge the status quo. Thus, as the practice related context of this investigation is concerned, companies are more and more challenged to make use of these entrepreneurial individuals within their corporate settings. However, identifying and utilising entrepreneurial active people and especially an entrepreneurial function that cooperatively creates new combinations, as Schumpeter (1934) described it, is not an easy procedure in the own company. This is where this investigation would like to contribute.

Furthermore, this research is conducted within the broad context of an evolutionary economic perspective. As Dosi and Nelson (1994) explained it, the focus of an investigation with an evolutionary perspective is to explain why something is what it is at a moment in time in terms of how it got there. This research concentrates on investigating how the entrepreneurial function splits up in the reflection of different

company sizes with regard to corporate functions and organisational hierarchies. It is this process of change that requires studying entrepreneurial active people within their corporate setting and daily routines. Therefore, this evolutionary approach to corporate entrepreneurship can be understood as a general point of view of how to understand the research phenomenon and how theory about the dynamics of the entrepreneurial function is generated.

1.2 Research justification

As outlined above, the current scientific discussion about organisational learning, innovation and corporate entrepreneurship provides broad insights in many different contexts. A number of authors contributed to this discussion by defining entrepreneurial roles or innovation networks. Klerkx and Aarts (2013) present the latest investigation about the interaction of multiple champions in orchestrating innovation but with a focus on multiple innovation communities across different companies and other institutions. When it comes to the entrepreneurial function that is carried out cooperatively within larger companies however, there is little knowledge about the role and relation of different corporate functions and organisational hierarchies.

When entrepreneurial roles are concerned, Augsdorfer (2012) outlined the bootleg entrepreneur within the department of research and development and asked whether other corporate functions could play a key role for the entrepreneurial process as well. The entrepreneurial function according to Schumpeter Mark I and Mark II and especially its transition when larger companies are concerned seems to have received little attention by now with regard to the division of labour and the hierarchical organisational system (Andersen, 2012). The question whether the entrepreneurial function, as Schumpeter described it, can be described to dilute in larger companies still requires research insights.

That is why this research project would like to contribute to the theory of the entrepreneurial function when different corporate functions and organisational hierarchies are involved. Furthermore, the contribution to practice refers to the identification of the corporate functions that are involved in entrepreneurial activities as well as possible influencing factors on this function in the organisational environment.

1.3 Research question

Investigating the entrepreneurial function within different corporate settings requires a clear defined research scope and approach. The literature review in chapter 2 will outline the theoretical framework around the research question in greater detail.

It is anticipated that the entrepreneurial function in a small company is carried out by the managing director as key driver of innovation. When mid-sized and large companies are concerned it becomes more difficult to identify who is involved in entrepreneurial activity. That is why the research question of this investigation reads as follows:

*Who should be considered the entrepreneur in the organisation today
as firms grow from small to large?*

This research project is interested in the way the entrepreneurial function is carried out cooperatively when the company gets bigger. That is why the question of how Schumpeter's entrepreneurial function evolves in different corporate settings needs to be discussed. In this study small, mid-sized and large companies are taken into consideration to provide a step by step investigation of this division and its consequences for each company size category. Furthermore, the role of different corporate functions and organisational hierarchies are analysed concerning the contribution to the entrepreneurial function.

1.4 Research aims and objective

It is the aim of this research to contribute to theory and practice of corporate entrepreneurship and innovation when the entrepreneurial function within organisations is considered. The investigation would like to shed some light on the influence of the division of labour and organisational hierarchies on entrepreneurial activities. Further, it is tried to investigate whether the entrepreneurial function splits up according to different intensities of entrepreneurial activities.

In order to contribute to the scientific discussion of this broad research area it is tried to define a clear scope of the study. This is done by carefully reviewing the existent and

relevant academic literature and by defining a research approach that provides detailed insights into the actual reality of this phenomenon. The aim is to generate theory from the data in the process of conducting the research.

1.5 Research methodology

This research project follows a more qualitative approach, based on grounded theory and case study research in an explorative way. It should provide insights into the practice of entrepreneurial activities and illustrate the dynamics of the entrepreneurial function. The research is conducted in Germany and designed as an inductive theory generating approach. In summary 97 interviews were conducted in six small, seven midsized and eleven large companies. The managing directors of a company were interviewed first in order to clarify the scope of the study, confidentiality issues, access to further interviews and to find out which persons are involved in entrepreneurial activities in each company. The interviews with people who are actually engaged in entrepreneurial activity gave valuable insights into the way the entrepreneurial function is carried out when companies get bigger. The interview transcripts, with a word count of 115.655 words in total, were analysed with the help of NVivo, a computer assisted qualitative software analysis tool. Two cycles of coding were applied in order to allocate the answers to the question nodes and to further look for recurring patterns. The analytic technique of cross-case pattern matching helped in two ways to conduct a systematic and thorough analysis of the massive data. First of all, the pattern matching of case studies within each investigated company sizes category helped to identify how the entrepreneurial function is carried out within small, midsized and large companies. Then, the pattern matching according to the emerged themes and across the company sizes could be completed. The subsequent analysis of the case reports with regard to the dynamics of the investigated entrepreneurial activity provides a detailed description and interpretation on a case-by-case basis. The interviews were conducted in German. In order to provide a clear chain of evidence and comprehensibility, the key findings of the interviews were summarised in a separate excel matrix in English. That is how the data for this research was collected and analysed.

1.6 Research process

The current thesis is the outcome of three years and six months of research. The research process that led to the final result is explained briefly according to the single research steps. During the first year of this study it was the aim to review the relevant existing academic literature in the field of study, identify a clear literature gap and decide on a research question as well as the methodology how to answer this question. The second year of the study started with a pilot study in order to test the developed research design in the field and get started with the interviews. This step helped to understand what kind of answers the semi-structured interviews generated and how to slightly refine the interview guide for the main study. After the pilot study the main data collection phase took place as well as the set up for the analysis of the interview data. By the beginning of the third year of research the data analysis and verification could be completed. In order to strengthen the significance of this research the findings of this investigation were presented at a scientific research conference (DRUID Academy Conference) in January 2013 in Denmark. The discussion and critical scientific review further helped to focus the findings concerning their main original contribution. In the rest of the third year and the beginning of the fourth year this doctoral thesis was written.

1.7 Structure of the thesis

Chapter 2 of this thesis presents a review of the current literature. The discussion of the relevant existing contributions in the research area refers to Schumpeter's early contributions to the concept of the entrepreneur and the entrepreneurial function, its evolutionary economic framework as well as the literature streams of corporate entrepreneurship. The main identified entrepreneurial roles are outlined in order to define a clear scope of the study that leads to the research question.

Chapter 3 discusses the applied methodology of this research project and describes its philosophy, approach and concrete strategy according to data collection and analysis in order to explain how the research question is answered. Furthermore, the quality of this investigation with regard to reliability and validity are reviewed critically as well as the strengths and limitations of this study.

Chapter 4-7 can be summarised as findings chapters. Entrepreneurial activity appears differently in every company size which is why the findings are presented according to the respective company size. Chapter 4 reports the findings in small companies, Chapter 5 those of mid-sized companies and Chapter 6 those of large companies. Each of these chapters is structured according to the main themes of this investigation and the dynamics of the entrepreneurial function.

Chapter 7 presents additional findings about facilitating factors and barriers of entrepreneurial activity and reviews possible rival explanations.

Chapter 8 further discusses the findings in reference to the reviewed literature. With the help of the summarised key findings the identified entrepreneurial roles and their contribution to the entrepreneurial function were outlined. After that, an analytical framework of the evolution of the entrepreneurial function across the different company sizes is presented.

Chapter 9 finally highlights the conclusions of this research and refers back to the initial focus of the study. The main contributions are outlined briefly as well as some managerial recommendations followed by a few more general implications of the study. At the end ideas for further research are presented.

1.8 Summary and outlook

In summary, it can be stated that the topic under investigation refers to a wide and complex field of research. On the one hand, investigating the division of the entrepreneurial function requires research in three different relating streams of literature: organisational learning, innovation and corporate entrepreneurship. On the other hand, research in different company sizes is crucial to understand the dynamics and relation of this entrepreneurial function to different corporate functions and hierarchical levels. This chapter provided a brief overview of this research project and its broader context, development and conduct.

Chapter 2. Literature Review

2.1 Introduction

This chapter outlines the literature review in order to identify the research gap and ground the research question within the relevant existing literature streams. First, the concept of Schumpeter's entrepreneur and its relation to an evolutionary approach of entrepreneurship is established as the general analytic framework for this research project. Schumpeter's contribution to the entrepreneurial function can be understood as main basis for this investigation. Then, the literature stream of corporate entrepreneurship is taken into consideration in order to show the development of scientific contributions concerning entrepreneurial activities within organisations and explain important influencing factors for the entrepreneurial function. Subsequently, existing entrepreneurial roles and their attributes are outlined to complete the scientific picture about contributions to the entrepreneurial function. After that, research gap and research question of the current investigation are explained in the context of the reviewed literature. The chapter closes with a brief summary of the theoretical background and an outlook of how the identified research question will be addressed methodologically in the next chapter.

2.2 Schumpeter's entrepreneur

First of all, Schumpeter's introduction of the entrepreneur is outlined in the following. However, in order to understand the essence of Schumpeter's early contribution to the concept of corporate entrepreneurship it is important to further see his entrepreneurial idea in the light of the economic framework in which it was established. That is why the evolutionary framework to corporate entrepreneurship will be explained afterwards.

2.2.1 *Schumpeter Mark I and Mark II*

Joseph Alois Schumpeter is often called "the father of entrepreneurship" because he first introduced the entrepreneur within the context of economic change. In his books, "The Theory of Economic Development" (Schumpeter, 1934) and "Capitalism, Socialism and Democracy" (Schumpeter, 1942), he proposed two major patterns of

innovative activities, which were later labelled as Schumpeter Mark I and Schumpeter Mark II by Nelson and Winter and Kamien and Schwartz (Nelson and Winter, 1982, Kamien and Schwartz, 1982).

In his first work Schumpeter characterized the pattern of innovative activity by new firms as playing a major role, due to new entrepreneurs with novel ideas, products or processes, in turn launching new enterprises (Schumpeter, 1934). These entrepreneurs therefore “challenge established firms and continuously disrupt the current ways of production, organisation and distribution” (Malerba and Orsenigo, 1995). That is where Schumpeter introduced the entrepreneur into the context of the evolution of economic change – termed Schumpeter Mark I. This creative destruction pattern is also referred to as “widening”, where innovations are introduced by firms that did not innovate before (Breschi et al., 2000). Andersen (2012) describes the Mark I model as an evolution from routine behaviour in the circular flow of economic life that is restarted because of the innovative disturbance by a swarm of Schumpeterian entrepreneurs.

In his second work Schumpeter discussed the relevance of industrial research and development (R&D) for technological innovation with specific consideration of large firms (Schumpeter, 1942). Within these large firms, there is an accumulated stock of knowledge in specific technological areas. This is due to an institutionalized innovation process with the creation of R&D laboratories and enormous capacities of researchers, technicians and engineers. The large firms are the ones who “create entry barriers to new entrepreneurs and small firms” (Malerba and Orsenigo, 1995). This pattern of innovative activity (Schumpeter Mark II) is also referred to as creative accumulation or “deepening”, as the innovations are being introduced by firms that innovated before (Breschi et al., 2000). Established firms therefore seem to combine the two activities of replicating given routines on the one side, and engaging in moves and counter-moves on the other side (Andersen, 2012). In this context Schumpeter further describes the entrepreneur as an initiating, creative and motivated person who “sees the new possibility and is able to cope with the resistance and difficulties which action always meets outside of the ruts of established practice (Schumpeter, 1989). He identified the entrepreneur as someone who...

...“carries out new combinations and leads the means of production into new channels and may thereby reap an entrepreneurial profit” (Nelson and Winter, 1982).

However, the Schumpeterian entrepreneur does not seem to be motivated by the greed of gain. In fact profits are not sufficient as final cause because Schumpeter’s description refers to a ‘restless entrepreneur’ driven by the delight and joy of creating (Schumpeter, 1949, O’Boyle, 2010). For Schumpeter, innovations are such disruptions that emanate from a social deviance from norms and from daring entrepreneurs (Louca, 2014). It becomes obvious that Schumpeter sees the entrepreneur as “specially gifted”, within the context of innovations “only accessible to people with certain qualities” (Schumpeter, 1934). Moreover, he distinguishes the entrepreneur from the manager of a firm who runs it on established lines, and indicates that the entrepreneur needs to overcome the “inertia implied by the inherent tendency of the circular flow towards equilibrium” (Harvey et al., 2010). Schumpeter’s thoughts on the entrepreneur, therefore, represent a change from previous traditions (Augsdorfer, 1996).

When it comes to the definition of the entrepreneur for the large corporation today Schumpeter introduced another important thought by proposing the idea of the entrepreneurial function:

“The entrepreneurial function need not be embodied in a physical person and in particular in a single physical person. Every social environment has its own ways of filling the entrepreneurial function. [...] Again the entrepreneurial function may be and often is filled cooperatively. With the development of the largest-scale corporations this has evidently become of major importance: aptitudes that no single individual combines can thus be built into a corporate personality; on the other hand, the constituent physical personalities must inevitably to some extent, and very often to a serious extent, interfere with each other. In many cases, therefore, it is difficult or even impossible to name an individual that acts as “the entrepreneur” in a concern.” (Schumpeter, 1949)

This thought brings up the potential of rejecting the concept of a single human being acting as “the entrepreneur” within the corporation. It is therefore important for this investigation to broaden the understanding of the entrepreneur and to include the

entrepreneurial function which opens up the possibility of being carried out cooperatively. However, Schumpeter did not explicitly relate the entrepreneurial activity to a specific corporate function or organisational hierarchy. But he distinguished the act of innovation from the act of invention.

“To carry any improvement into effect is a task entirely different from the inventing of it, and a task, moreover, requiring entirely different kinds of aptitudes. Although entrepreneurs may be inventors just as they may be capitalists, they are inventors not by nature of their function but by coincidence and vice versa. Besides, the innovation which it is the function of entrepreneurs to carry out need not necessarily be any inventions at all.”
(Schumpeter, 1934)

This statement emphasises that successful innovation is an act of will, not necessarily of intellect (Herbert and Link, 2006). That means the personal will to change and challenge the existing status quo and the creation of something new to the world is the main goal of an entrepreneur according to the core idea of Schumpeter.

In the end, the review of the Schumpeterian entrepreneurial idea shows that there has been a real historical transition from the firms and mechanisms of the Mark I model to the firms and mechanisms of Mark II when firms in the late nineteenth century realised that a separate department of research and development is necessary to survive competition (Andersen, 2012). However, this innovative investment in building up research and development competences within larger organisation only seems to reflect a part of the whole entrepreneurial function today.

2.2.2 Evolutionary framework to corporate entrepreneurship

As outlined above this research project and especially Schumpeter’s ideas of the entrepreneur need to be considered in the broader context of an evolutionary economic perspective. This is why the environmental settings of economic change and uncertainty as well as their relation to organisational learning and innovation are briefly discussed in the following sections.

Economic change:

Economic change, its reasons and consequences, are discussed by many scholars. To explain the fundamental backgrounds, many different economic theories have been advanced. Although neoclassical economic theory provides a fruitful way of looking at certain macroeconomic patterns, it has been unsuccessful in explaining the phenomenon of technological change and entrepreneurship (Nelson and Winter, 1982). It seems obvious that technological change and innovation play an important role in an economy's development. In 1934 Schumpeter proposed an evolutionary perspective in which he described innovation as deviation from routine behaviour, arguing that innovation continually upsets equilibrium (Nelson and Winter, 1982). The theory was based on the assumption of macroeconomic equilibrium, which is perpetually being destroyed by entrepreneurs who attempt to introduce innovations. Schumpeter's view on the capitalist economy was to explain it as a system that is constantly in motion and never reaches equilibrium.

“I felt that there was a source of energy within the economic system which would of itself disrupt any equilibrium that might be attained. If this is so, then there must be a purely economic theory of economic change which does not merely rely on external factors propelling the economic system from one equilibrium to another. It is such a theory that I have tried to build.” (Schumpeter, 1989)

The evolution “from one equilibrium to another” shows that Schumpeter was likewise attracted to industrial revolutions that tumble the prevailing structures with remarkable regularity (Schumpeter, 1942). These recurring phases of “creative destruction”, as Schumpeter termed it, represent the essential criteria for economic development and growth (Schumpeter, 1934). It shows the transformative power of new developments in the context of organisations. Creative destruction occurs when the technology that emerges is ultimately able to successfully invade other niches (Adner and Levinthal, 2002). This invasion describes the possibility of overcoming boundaries that existed over a period of time but could not be overcome until this point of creative destruction through new technological developments.

In their book “An Evolutionary Theory of Economic Change”, Nelson and Winter (1982) applied evolutionary theory to analyse the effect of autonomous changes in market conditions, as well as change induced by endogenous innovation (Nelson and Winter, 1982). According to their researched assumptions, the key ideas of evolutionary theory are that firms at any time are viewed as possessing various capabilities, procedures, and decision rules, which determine what they do depending on the given external conditions (Nelson and Winter, 1982). A large extent of Nelson and Winter’s discussion on evolutionary theory refers back to Schumpeter’s view of economic evolution. In his book “The Theory of Economic Development” (1934), Schumpeter described “development” as “only such changes in economic life as are not forced upon it from without but arise by its own initiative, from within” (Schumpeter, 1934). For him, the important factor of economic change was to “carry out new combinations”, and seen in the context of competition “new combinations mean the competitive elimination of the old” (Schumpeter, 1934). That is why old technology becomes obsolete and simply gets outperformed. The new combinations refer to the introduction of new products, new methods of production or new markets. This is what Schumpeter described as change from routine economic growth to “dynamic” economic development (Schumpeter, 1934).

Schumpeter further outlines the necessity for this creative type of economic acting as an impulse within existing continuities, which in turn breaks new ground and thus enables the transition to new economic levels (Schumpeter, 1934). This is why Schumpeter emphasises the role of the entrepreneur who carries out new combinations and who “leads” in the sense of outpacing other producers of the same branch (Nelson and Winter, 1982). Many scholars have emphasised the positive impacts of the entrepreneur, both in practice-oriented (Drucker, 1985), as well as in academic-oriented (Stevenson and Jarillo, 1990) literature. The link between entrepreneurship, discontinuous technological change, and creative destruction is said to be critical to the long-term viability and competitiveness of the economy (Spencer and Kirchoff, 2006).

In the end, the complexity of different interacting cycles, coupled with the disequilibrating force of innovation as Schumpeter explained it, generate a theoretical framework of understanding the economic system as a system of dynamic nature (Hagedoorn, 1996). In order to understand the connection between entrepreneurial activity on an individual level within a single company and its broader consequences for

economic change and development, it is important to further consider what drives this change. Knight emphasised the key characteristic of such changes, as it is impossible to calculate the right thing to do due to uncertainty (Nelson and Winter, 1982). The issue of uncertainty therefore must be addressed.

Uncertainty:

Environmental settings have an important impact on companies. Since companies are not isolated, each must interact within a complex environmental system of influencing factors such as markets, the economic situation, competition, customers and suppliers, regulatory institutions, employees, ecology, science, technology, etc. The larger the number of factors and the more heterogeneous they are, the more complex the environment becomes (Augsdorfer, 1996). Additionally, this complex environment is not a static and predictable one, rather it is one of high dynamic nature. Companies that dominate one generation of technology often fail to maintain leadership in the next (Utterback, 1996, Christensen, 1997). The reason is that the environment is characterized by a high degree of uncertainty and complexity (Knight, 1940). The aspect of uncertainty therefore seems to play an important role within the corporate environment of a company. Pfeffer and Salancik asserted that uncertainty refers to the extent to which future states of the environment can be anticipated or accurately predicted (Salancik and Pfeffer, 1978). However, prediction and calculation of future scenarios have been difficult tasks for all companies, due to the influence of many uncertain factors. Knight was the first to differentiate the term of uncertainty, and argued that uncertainty and risk need to be distinguished from one another. According to his definition, risk is where decision-making happens with unknown outcomes but known ex-ante probability distributions (Knight, 1940). He states that the essential difference is found in the measurability:

“The essential fact is that “risk” means in some cases a quantity susceptible of measurement, while at other times it is something distinctly not of this character; and there are far-reaching and crucial differences in the bearings of the phenomenon depending on which of the two is really present and operating. [...] It will appear that a *measurable* uncertainty, or “risk” proper, as we shall use the term, is so far different from an *unmeasurable* one that it is not in effect an uncertainty at all. We shall accordingly restrict the term “uncertainty” to cases of the non-quantitative type. It is this “true”

uncertainty, and not risk, as has been argued, which forms the basis of a valid theory of profit and accounts for the divergence between actual and theoretical competition.” (Knight, 1940)

This Knightian distinction between risk and uncertainty highlights the fact that there is true uncertainty, which despite statistical probabilities truly remains unpredictable. In Knight’s view, true uncertainty is the only source of profit, since they would disappear as soon as change would become predictable (Brouwer, 2000).

“If any of these changes take place regularly, whether progressively or periodically or according to whatever known law, their consequences in the price system and the economic organisation can be briefly disposed off.” (Knight, 1940)

The discussion of uncertainty also affects research in the context of breakthrough innovation, which can be understood as highly uncertain, yet important for the economic development of a company and its competitors. Rice, O’Connor and Pierantozzi (2008) used four different categories to explain the phenomenon of uncertainty for their studies of breakthrough innovation projects: technical, market, organisational and resource uncertainty. For example, the technical uncertainties relate to the completeness and correctness of the underlying scientific knowledge, and the extent to which the technical specifications of the product can be implemented. Market uncertainties include, among others, the degree to which customer needs are clear and well understood, as well as the extent to which conventional forms of interaction between the customer and the product can be used. Organisational uncertainties relate to the organisational dynamism and include organisational resistance, lack of continuity and persistence, inconsistency in expectations and metrics, changes in internal and external partners, as well as changes in strategic commitment. Finally, resource uncertainties, include financial resources as well as competencies (Rice et al., 2008).

In this context, McMullen and Shepherd (2006) further contributed to the current scientific discussion about uncertainty in the entrepreneurial process. They considered the amount of perceived uncertainty and the willingness to bear uncertainty by entrepreneurs (McMullen and Shepherd, 2006). Their study shows the important influence of uncertainty on managerial thought and therefore also on the decision whether entrepreneurs engage in entrepreneurial action within the organisation or not.

These subjects of uncertainty can be transferred to all kinds of innovation a company endeavours. Therefore, it seems to be important for companies in a given economic environment with truly uncertain factors, to find solutions for how to deal with uncertainty in order to survive and remain competitive. Rice et al. (2008) already implemented the factor of competencies within their uncertainty concept. Hence, the next section will deal with the matter of organisational learning and building competencies with regard to innovation.

Organisational learning:

In order to compensate for uncertainty companies need to learn (Senge, 1990). Many scholars have discussed the phenomenon of how organisations become learning organisations in order to encounter the issue of uncertainty. Nonaka argued that learning concerns all parts of the company (Nonaka, 1991), and therefore does not only refer to the department of research and development or strategy. According to Senge, it particularly concerns individuals.

“Organisations learn only through individuals who learn. Individual learning does not guarantee organisational learning. But without it no organisational learning occurs.” (Senge, 1990)

Senge was one of the first to define a learning organisation with a focus on individuals. He argued that organisations have to be able to learn how to cope with environmental changes. This learning becomes even more difficult because organisations face certain learning disabilities such as the excessive commitment of individuals to their own positions, or being unaware of slow, gradual processes that present greater threats than immediate events (Senge, 1990). To combat these learning disabilities, he proposes five disciplines that organisations need in order to become learning organisations. The first discipline is called “personal mastery”, and stresses continual clarification and deepening of personal vision, focusing energies, developing patience, and seeing reality objectively (Senge, 1990). The second discipline concerns “mental models”, which Senge defined as deeply ingrained assumptions, generalisations, or even pictures of images that influence how we understand the world and how we take action (Senge, 1990). “Building a shared vision”, the third discipline, is a practice of unearthing shared pictures of the future that foster genuine commitment and involvement, rather than

compliance (Senge, 1990). The fourth discipline, “team learning”, promotes the capacity of team members to suspend assumptions, and enter into authentic thinking together (Senge, 1990). The fifth discipline, however, integrates the previous four in the sense of “systems thinking”, defined as a framework for seeing interrelationships rather than things, as well as seeing patterns of change rather than static “snapshots” (Senge, 1997). These five disciplines can act as antidotes to learning disabilities (Senge, 1990). As previously discussed, the factor of uncertainty due to a constantly changing environment requires both flexibility, as well as the capability to quickly adapt to changes. This can be implemented if the company focuses on learning and the building of competencies, which starts at the level of each individual and needs to be transferred into organisational learning. Argyris and Schon stated that organisational learning occurs when individuals within an organisation experience a problematic situation and inquire it on the organisation’s behalf (Argyris and Schon, 1996).

Following an evolutionary perspective, the focus on individuals and their contribution to dynamic processes seems to be of even more importance. Händeler considers the individual human being to be the most important production factor of the future due to the shift from an industrial to information-driven economy and society (Händeler, 2009). The way individuals can manage this important information role, relates back to their own learning capabilities. In order to counteract a dynamic environment, companies must find a way to build competencies for the future, and also learn how to adjust their knowledge quickly enough to keep pace with the ever changing market. According to Hannan and Freeman, only companies that are able to adapt themselves to a changing environment will be able to survive (Hannan and Freeman, 1977).

Learning is further associated with knowledge and competencies. This is because learning is a process that leads to the production of knowledge, and because knowledge is ephemeral. It must constantly be revised and updated (Harrison and Leitch, 2005). In the context of knowledge creation Dess et al. distinguished two types of organisational learning: acquisitive and experimental learning. Acquisitive learning takes place when the firm gains access to and subsequently internalizes pre-existing knowledge from its external environment whereas experimental learning occurs inside of the company and generates knowledge that is distinctive to it (Dess et al., 2003). The notion of “knowledge” in its broadest sense includes expertise, skills and information. Since Schumpeter’s era, it is known that the ability to assimilate new knowledge depends on

the amount and variety of prior knowledge (Schumpeter, 1954). That also means that it is easier for companies to learn when new knowledge relates to a pre-existing knowledge structure. These knowledge structures also refer to technological trajectories (Dosi, 1982), meaning the past history of a technological knowledge direction of a company, as well as the development of competencies. In other words, the direction of a firm heavily depends on its past technological and knowledge trajectories and how they are organized (Pavitt, 1990).

Amara et al. further argued that technological uncertainty refers to the degree to which the development of products or processes involves the creation of new knowledge. Hence, the greater the knowledge-creation demands, the greater the degree of novelty of innovation (Amara et al., 2008), and therefore the greater the chance to remain competitive. This is where Schumpeter's "creative destruction" reminds us of the special abilities to overcome the paradox situation of an ambidextrous organisation, which serves both, the requirements of incremental development, and parallel advances radical innovation projects, which, over time push the old technology to become obsolete (Tushman and O'Reilly, 1996). The consequence of learning, therefore, seems to be an enhanced ability to deal with uncertainty and change within the company's environment.

The result of a learning organisation can be explained as a company with knowledge and capabilities, in order to get to new technological trajectories. Cohen and Levinthal defined this learning capability as the ability of firms to identify, assimilate, transform and exploit knowledge – the firm's absorptive capacity (Cohen and Levinthal, 1990). The ability to exploit external knowledge is therefore a critical component of a company's innovative capability. It becomes clear that managing knowledge, especially new knowledge, plays a central role within the context of organisational learning. Effective innovation cannot occur without higher learning abilities (Tran, 2008). However, the organisation itself appears to have a supporting role as well in this context. A supportive learning environment, leadership that actually reinforces learning and concrete learning processes through trainings and feedback are outlined as main characteristics for a learning organisation (Garvin et al., 2008).

As this research refers to innovative activities of entrepreneurs, it is interesting to consider organisational learning in this context. For Smilor, learning is not an optional

extra, but is central to the entrepreneurial process (Smilor and Feeser, 1991). Effective entrepreneurs are exceptional learners, who seize all opportunities and areas to learn from customers, suppliers, competitors, employees, associates, as well as other entrepreneurs. Not only do they learn from experience, but also by doing. That is why they learn from what works, and more importantly, from what does not work (Harrison and Leitch, 2005). Furthermore, Cope emphasises that entrepreneurial learning takes place within the context of the complex, interactive learning relationship, existing between entrepreneur, business, and the larger environment (Cope, 2005). It seems to be clear that organisational learning and innovation are related to each other in both ways.

Innovation and innovative activities:

Schumpeter was one of the first economists to stress innovation as the engine and inexhaustible source of economic growth (Brouwer, 2000). As Nelson equally stated companies need to innovate, otherwise they will fail to survive (Nelson, 1961). There is no doubt that in order to remain competitive companies need to innovate. Christensen furthermore highlights the danger of concentrating on current customers and ignoring potential new markets and new technologies (Christensen, 1997). Companies seem to face the constant risk of missing out on new technological opportunities. The only way to rise to this challenge is to actively engage in innovation. It seems to be equally clear that the costs of innovation are growing rapidly because of the decreasing useful life span for any new idea. Therefore, organisations must not only innovate, they also have to transform their ideas into marketable products and services quickly, or they will lack the funds to support continued innovation (Argyris, 1965). Furthermore, Van Es and Van der Wal (2012) pointed out that innovative behaviour of companies essentially consisted of technical and business process optimization, new types of collaboration, and renewing competencies and developing a fitting strategy. That means, that non-technical innovation domains greatly gained in importance (Van Es and Van der Wal, 2012). The urgent need for companies to invest in innovations of all kinds seems to be obvious.

But how do organisations manage the balancing act of being and remaining competitive? According to Tushman and O'Reilly, organisations must be ambidextrous – able to implement both incremental and revolutionary change (Tushman and O'Reilly, 1996). This requires organisational and management skills in order to be able to both compete in a mature market, as well as to develop new products and services. Competing in a mature market means managing cost, efficiency, and incremental

innovation, whereas the development of new products and services requires radical or discontinuous innovation, speed, and flexibility (Tushman and O'Reilly, 1996). Hence, overcoming inertia and dynamic conservatism becomes increasingly important. There are many companies able to maintain their current position under steady state conditions, but struggle as soon as the rules of the game change. However, organisations must do both simultaneously, which remains a challenging task across all industries.

“The difficulty lies, not in the new ideas, but in escaping from the old ones.”

(John Maynard Keynes)

Across a wide range of sizes, sectors, and geographical locations, organisations have developed a series of behaviours, which help them deal with the challenge of innovation. These kinds of organisational behaviour include aspects like agility, flexibility, the ability to learn fast, and the lack of preconceptions about the ways in which things might evolve (Bessant et al., 2005). There is no doubt that managing innovation is a challenging task, especially in the context of being an ambidextrous organisation. It might be easier to concentrate on the current competition and attempt to manage the business successfully by serving actual customers. But the more the focus gets confined to the actual organisational situation, the more dangerous it becomes. Competitors might be one crucial step ahead in innovating for the future.

At this point it is important to define what exactly is meant by innovative activities. Dyer, Gregersen and Christensen identified five discovery skills and refer to them as the “innovators DNA” in order to create new ideas (Dyer et al., 2009). They introduced five patterns of action: questioning, observing, experimenting, networking, and associating. *Questioning* allows the innovator to break out of the status quo and consider new possibilities. *Observing* helps the innovator to detect small behavioural details that suggest new ways of doing things. *Experimenting* means to relentlessly try on new experiences and to explore the world. *Networking* helps to gain radically different perspectives from individuals from diverse backgrounds. These patterns of action help the innovator *associate* to cultivate new insights (Dyer et al., 2009). Within this research the innovative activities are defined as at least one of these five discovery skills.

It is interesting to consider where innovative ideas come from. As Brem and Voigt (2009) pointed out, there are two common ways innovation impulses differ. On the one hand, market pull mirrors satisfaction of customer needs. On the other hand, technology push shows that the stimulus for new products and processes comes from internal or external research (Brem and Voigt, 2009). In order to meet the challenge of making use of innovation impulses, Chesbrough (2003) stressed that the creation and use of multi-company collaborative networks, in which knowledge is transferred and members of the networks continuously attempt to innovate (Brem and Voigt, 2009). The importance of these network members shows that individual people within the organisation seem to play a key role. Therefore, the question of where the innovative power of an organisation actually originates, and whether it can be facilitated within the organisation, are important questions that point in the direction of entrepreneurial behaviour, creativity and entrepreneurship. It can be stated for this research project that taking an evolutionary perspective means to consider the idea of entrepreneurial activities as dynamic processes that transform the company from within. These dynamic processes emerge due to actions of diverse agents with bounded rationality who are capable of experimenting and discovering new rules and thus learn from experience and interaction (Dosi and Nelson, 1994). Simon (1991) emphasised bounded rationality of human beings as limits upon the ability to adapt optimally, or even satisfactorily, to complex environments. Therefore, learning and innovative agents of change seem to play a key role for the economic development of a company. That is why this research is interested in innovative activities of entrepreneurs within different company sizes. It is assumed that innovation in small firms happen with new ideas of the central managing director and inventor of the business idea. In this context it is interesting that a significant fraction of new firms formed in an industry are likely to be employee founded by building on technical and marketing know-how from their parent organisations in order to introduce product and process innovation (Agarwal and Shar, 2014). It appears that corporate functions seem to have an influence on how innovation is carried out by entrepreneurs within the organisation. Furthermore, Garud et al. (2014) show that past experiences of entrepreneurs shape the nature of opportunities entrepreneurs conceptualize in the future. Innovative activities of entrepreneurs are therefore influenced by the envisioned personal experiences of single individuals. That is why it is so important to take a closer look into the phenomenon of entrepreneurial action within the organisational setting.

The outlined evolutionary framework explains the background conditions for entrepreneurial activities with regards to economic change, the role of uncertainty, organisational learning and innovation. It is this framework that serves as basis for the investigation of the entrepreneurial function as key subject under study. Schumpeter's question of who should be considered the entrepreneur in the large corporation today sounds simple but stresses a phenomenon that requires a closer look from multiple perspectives. His entrepreneurial idea had an important influence of on a wide range of the scientific community and across different literature streams such as corporate entrepreneurship that is taken into consideration in the next subsection.

2.3 Corporate entrepreneurship

The broader context of corporate entrepreneurship shall be outlined with regard to Schumpeter and his relation to the Austrian school of thought, as well as other concepts of corporate entrepreneurship and important influencing factors.

2.3.1 *Schumpeter and the Austrian school*

The literature provides many thoughts on the exploitation of entrepreneurial opportunities and the creative processes within organisations, which all refer to the field of entrepreneurship. In the context of the most formative approaches in history, the Austrian, as well as more specifically the Schumpeterian approach, must be mentioned. In his entrepreneurship approach, Schumpeter suggests the entrepreneur to be the driving force of changing an existing situation, and therefore, he promotes disequilibrium. The entrepreneurial activities result in major innovations, or even in systematic changes, which generate new development processes and, which create or widen the technological gap between leaders and followers on the market (Cheah, 1990). It is clear that a focus on innovations by entrepreneurs is becoming even more important as global competition offers more entrepreneurial opportunities from a greater pool of people (Harvey et al., 2010). As previously discussed, such innovative efforts of revolutionizing character are proposed by Schumpeter as the process of "creative destruction". Hence, Schumpeter did not only concentrate on technical skills and expertise of the entrepreneur alone. The exercise of intuition and strategy was of

particular importance (Schumpeter, 1934), as well as seeing the entrepreneurial process embedded into the whole organisational context.

The Austrian school, in contrast, critiqued Schumpeter's view of disequilibrium and instead promoted changes within an existing situation. That means that not only will existing profitable discrepancies, gaps, as well as mismatches in knowledge and information be perceived and exploited, but also that the entrepreneur will only act to capitalize upon the opportunity (Cheah, 1990). These Austrian ideas have been associated with, among others, Ludwig van Mises, Friedrich Hayek, and the earlier work of Israel Kirzner. However, even if there are differences of opinion between Schumpeter and his Austrian critics, they do agree on some points. In the context of the entrepreneur it seems to be wrong to see them as excluding contrasts. It is more appropriate to suggest that the Schumpeterian and Kirznerian entrepreneurs are complementary and that neither has meaning without the other. After the Schumpeterian entrepreneur disrupts the existing equilibrium by creating disequilibrium, the Kirznerian entrepreneur "takes over, making corrections that initiate convergence toward a new equilibrium in which all actor's plans are fully coordinated" (Chiles et al., 2007). Therefore, it seems that the distinction between Schumpeterian and Austrian entrepreneurs is sufficiently comprehensive to encompass all types of entrepreneurs, whether in small or large businesses, new ventures or established companies (Cheah, 1990). Douhan et al. noticed that Kirzner has made the Austrian school intelligible for non-Austrians by "bridging the chasm between Austrian thinking and mainstream thinking". Because of this, the crucial role of entrepreneurship and the individual entrepreneur has become visible to a much broader audience (Douhan et al., 2007). However, for this research the understanding of Schumpeter's entrepreneur and the entrepreneurial function build the main theoretical foundation. It is further important to consider how individual entrepreneurs carry out innovative activities within their corporate settings. That is why the next subsection deals with further concepts of corporate entrepreneurship.

2.3.2 Other concepts of corporate entrepreneurship

In order to conceive the various definitions, as well as research directions related to the notion of "entrepreneurship", and "corporate entrepreneurship" in particular, it is

important to consider several scholarly developments over time. Some of the research has emphasised several activities, such as the creation of new organisations (Gartner, 1989), the new combination of existing factors (Schumpeter, 1934), the exploration and exploitation of opportunities (Kirzner, 1973), the bearing of uncertainty (Knight, 1940), and so forth (Ulhoi, 2005). Others have emphasised environmental influences to find out what attracts entrepreneurial ideas and where they come from (Johnson, 2010). The increase of recent research in this field has also led to a segmentation into different disciplines e.g. intrapreneurship (Pinchot, 1985), corporate entrepreneurship (Covin and Slevin, 1991, Chang, 2000, Garvin and Levesque, 2006), sustainable entrepreneurship (Cohen and Winn, 2007), with diverse approaches and theories. Other scholars, for example Shane and Venkataraman (2000), suggest that entrepreneurship involves the study of the sources of opportunities, the processes of discovery, evaluation and taking advantage of the opportunities, as well as the group of individuals who discover, evaluate and exploit these opportunities (Ulhoi, 2005).

The many approaches on entrepreneurship that have been discussed so far by a variety of scholars provide a wide area of research possibilities. Since the focus of the current investigation lies on entrepreneurs and the innovative activities within the corporation, attention should be concentrated on corporate entrepreneurship. That means theory related to new venture creation is being neglected at this point.

2.3.3 Covin and Miles' corporate entrepreneurship framework

Covin and Miles provide a useful framework of corporate entrepreneurship using a categorization based on how knowledge is created (Covin and Miles, 1999). They distinguish the following four types of corporate entrepreneurship:

- *Sustained regeneration:*

The firm develops cultures, processes, and structures to support and encourage a continuous stream of new product introductions in its current markets as well as entries with existing products into new markets (concerned primarily with continuous innovation).

- *Organisational rejuvenation:*
Concerned primarily with improving the firm's ability to execute strategies, organisational rejuvenation often entails changes to value chain activities. Firms can become more entrepreneurial through processes and structures as well as by introducing new product and/or entering new markets with existing products.
- *Strategic renewal:*
The firm concentrates on renewing the strategies it uses to successfully align itself with its external environment. At its best strategic renewal allows the firm to more profitably exploit product-market opportunities.
- *Domain redefinition:*
The firm proactively seeks to create a new product market position that competitors haven't recognised or have underserved. The focus here is more on exploring what is possible rather than exploiting what is currently available.

This research involves all of these four types of corporate entrepreneurship because proactive innovative activities carried out by entrepreneurs in the large corporation can happen in all forms. The explorative nature of entrepreneurial activities along the value chain is of great importance to this research. As Schumpeter explained it, corporate entrepreneurship also relates to the concept of individual entrepreneurs acting within a special corporate setting. In this context different characterising and defining factors need to be considered and are therefore addressed in the following subsection.

2.3.4 *Defining factors on corporate entrepreneurship*

In order to understand what the current literature states about "the entrepreneur" within the context of organisational learning and corporate entrepreneurship, it is important to note that many scholars have discussed this topic from different perspectives. Some have emphasised definitions, functions, or meaning for an innovative organisation, whereas others have defined the entrepreneur by characterization or personified psychological profile. Over time, the research focus concerning the entrepreneur shifted from areas such as the determination of the psychological characteristics toward an assessment of the behavioural and cognitive aspects of the entrepreneur with an

increased emphasis on context and entrepreneurial process (Cornelius et al., 2006). In addition to Schumpeter, there are other scholars who contributed to the academic discussion of different entrepreneurial roles, which further includes related notions, concepts and sub-functions. When it comes to the nature of an entrepreneur as individual human being and the related organisational relationships, there is a broad range of research topics that have been established, for example, entrepreneurial behaviour, cognition, spirit, role, alertness, creativity, attitude, intuition, motivation, thinking, enthusiasm, as well as emotion. Discussing all these wide fields and their contributions to theory of the entrepreneur in detail is beyond the scope of this literature review.

In order to make sense of the various studies mentioned above, it might be helpful to make the distinction between internal and external factors that influence the entrepreneur concerning constitution and environment. Internal factors can therefore be defined as the natural capabilities and behaviours the entrepreneur brings along as individual human being. External factors, on the other hand, can be understood as everything influencing the entrepreneur from the environmental side. In some studies, both internal and external factors are combined within the research question. At this point, only a few shall be mentioned that are found to be relevant for the further development of a definition of the “entrepreneur” for the current research project.

Internal factors:

In particular, the part of the constitution of the entrepreneur as human being (i.e., the internal factors, as previously defined) has been subject of many studies. For example, the way the entrepreneur or champion behaves (Shaver and Scott, 1991, Howell et al., 2005), the attitude of an entrepreneur (Robinson et al., 1991), the way the entrepreneur is creative at work (Fiol, 1995, Amable, 1997), the way the entrepreneur identifies, creates and develops opportunities (O'Connor and Rice, 2001, Rice et al., 2001), the intuitive capabilities of an entrepreneur (Allison et al., 2000), the way the entrepreneur is alert to opportunities (Fu-Lai Yu, 2001, Gaglio and Katz, 2001, Tang, 2009, Kirzner, 2009), the way the entrepreneur perceives situations in creative manners (Ward, 2004, Mitchell et al., 2007), the entrepreneurs emotions (Goss, 2005), the way in which the entrepreneur is motivated (Marvel et al., 2007), the way the entrepreneur is enthusiastic about his work (Sandberg, 2007), as well the way the entrepreneur thinks (Wylant, 2008, Goss, 2008).

External factors:

Studies related to external factors, for example Scott and Bruce, must also be mentioned (Scott and Bruce, 1994). They studied the determinants of innovative behaviour and found leadership, support for innovation, managerial role expectations, career stage, and systematic problem-solving style all to be significantly related to individual innovative behaviour. In 1989 McKinney and McKinney investigated the role of the entrepreneur within the larger corporation and stated that entrepreneurship in the larger corporate environment can only succeed when the top decision makers are themselves entrepreneurial (McKinney and McKinney, 1989). Furthermore, the influence of entrepreneurial alertness has been the subject of many studies (Mumford et al., 2002, Menzel et al., 2007, Dimov, 2007, Tang et al., 2008, Kirzner, 2009).

Even though previous research offers a variety of internal and external factors they only seem to point out a small picture or fragment of the entrepreneurial function itself in the way Schumpeter described it. There is a strong emphasis on internal factors of an entrepreneur but very few studies try to cover the larger picture the entrepreneurial function across different corporate functions and hierarchies. In companies that get bigger and bigger the division of labour has a deep impact into daily work routines that often remain within the borders of one single corporate function. Anyhow, it is not enough to only point to single external factors either that influence the entrepreneur from an environmental point of view. In order to answer the question about the entrepreneurial function there is a need for research with a broader view on entrepreneurial activities within larger companies instead of focusing on single influencing factors.

This topic refers to a wide academic field and it is clear that the current research project has its limitations. One single research project is neither able to face all aspects of entrepreneurship, nor all parts of the various definitions of “the entrepreneur” that have been offered by previous scholars. Additionally, it is interesting that Ahuja and Lampert (2001) for instance emphasise several barriers in the entrepreneurial process that have important influences on how entrepreneurial activity is carried out. They outlined three organisational pathologies that appear to influence and inhibit inventions in the organisational context: the familiarity trap, the maturity trap and the propinquity trap (Ahuja and Lampert, 2001). All of them, so they argue, can be overcome by experimenting with novel, emerging, and pioneering technologies (Ahuja and Lampert,

2001). It seems that it is possible for an organisation to create an environment and possibilities to foster entrepreneurial activity and that external and internal triggers for change appear to be important (Stopford and Baden-Fuller, 1994). Therefore, in this research context it is of importance to understand the factors that have an influence on how entrepreneurial activities are carried out in the corporate environment. In this context it is the entrepreneurial function and its contributors in larger corporations that is the main focus of this study. Schumpeter and his idea of the corporate entrepreneur (Mark II) is the crucial basis of this investigation.

2.4 Existing entrepreneurial roles

The large extend of scientific contributions to corporate entrepreneurship were already outlined in the previous section. This research investigation is specifically interested in the entrepreneurial function when companies of larger sizes are considered. It appears that different contributors play an important role in this entrepreneurial function. The following overview of entrepreneurial roles shows the development of different aspects of the entrepreneur over time and serves as theoretical basis for the investigation of other contributing aspects to the entrepreneurial function today. Seven key roles to entrepreneurship could be identified from previous research that appear to be the most influencing ones: the product champion, the gate keeper, the change agent, the promotor, the intrapreneur, the alert entrepreneur, and the bootleg entrepreneur. In the following all of these roles are described briefly.

Product champion:

In the context of radical new inventions, Schon (1963) introduced the “product champion” as a person with considerable power and prestige in the organisation, with knowledge about how to use the company’s informal system of relationships, and also with comprehensive interests in technology, marketing, production and finance (Schon, 1963). The term product champion was further used in many other studies (Chakrabarti, 1974, Howell and Higgins, 1990, Howell and Boies, 2004).

Gate keeper:

Allen (1966) presented the technological “gate keeper” as a corporate function in the context of boundary-spanning individuals, who are connected to internal as well as

external domains (Allen and Cohen, 1969, Augsdorfer, 1996). These individuals occupy key positions in the communication network, are better acquainted than others with scientific and technological literature, and maintain a greater degree of informal contact with members of the scientific and technological community outside of their own organisation (Allen and Cohen, 1969).

Change agent:

Furthermore, Oberg (1972) brought up the “change agent” as a function of the transformational leader who brings about radical change by espousing beliefs and values that are different from the established order (Oberg, 1972, Howell and Higgins, 1990).

Promotor:

Moreover, Witte (1973) coined the notion of the “promotor” as a person who actively and intensively changes the innovation process with special commitment, and promotes the reduction of aim and competence barriers of the employees within an organisation (Witte, 1973). Hauschildt and Gemünden (1999) further extended the model to process promotor and relationship promotor (Hauschildt and Gemünden, 1999).

Intrapreneur:

In 1985 Pinchot explained “why you don’t have to leave the corporation to become an entrepreneur”. He advanced the term “intrapreneur” as an in-house form of entrepreneurship, and examined how intrapreneurs and corporations can work together for mutual benefit. Pinchot defined the intrapreneur as preferring action to extensive planning, and as being a calculated risk-taker, who will assume responsibility for envisioning both the necessary product market, as well as management strategies (Pinchot, 1985).

Alert entrepreneur:

Kirzner introduced the entrepreneurial role as that of “alertly noticing or discovering where these profit opportunities have occurred” (Kirzner, 1999). The entrepreneur who plays an equilibrating role fulfils this important function not by introducing new products or technologically more efficient methods of production, but rather by simply noticing available pure profit opportunities earlier than others.

Bootleg entrepreneur:

Augsdorfer (2012) characterised the “bootleg entrepreneur” as an active creative researcher whose entrepreneurial behaviour takes place only in R&D. Among others he described the bootleg entrepreneur as risk taker, maverick, curious, open-minded, passionate, motivated, questioning, agile and self-confident person (Augsdorfer, 2012).

All these studies identified several outstanding individuals, not just one single champion in an innovation process (Hauschildt and Gemünden, 1999), who are all related to the intrinsic motivated goal of creating something new to the world. It is this glimpse of potential revolution that appears to inspire the entrepreneur to continue to look for possible opportunities.

However, even if all of these roles describe a potential entrepreneurial contribution it remains interesting to know how these entrepreneurial roles actively engage in the innovation process in today’s larger organisations. This question also picks up on the introduced people-centric perspective when it comes to new inventions and technological development (Blomkvist et al., 2014). Tsai (2001) also highlighted the need for a central network position to provide access to new knowledge between different corporate functions with regard to the positive effect on organisational learning.

2.5 Key definitions

After the main literature streams of Schumpeter’s entrepreneurial concepts, the meaning of corporate entrepreneurship as well as further entrepreneurial roles were reviewed, it is important to clarify some core definitions. The previously discussed roles show different characteristics. In order to understand the contributing roles to the evolution of the entrepreneurial function, the distinction between inventors, innovators and entrepreneurs appears to be crucial at this point.

Inventor:

When it comes to new idea generation the role of an inventor becomes important. An inventor simply generates new ideas but is not involved in taking action of how to implement or realize these new ideas into practice. The activity of the inventor ends

with a concept of a new idea but without possible transformation efforts (Schumpeter, 1949).

Innovator:

The role of Schumpeter Mark I can be understood as an innovator, as someone who creates new business with new ideas, new products or new processes and who establishes a new business. That is why the role of an innovator is related to smaller start-up businesses within new industries (Schumpeter, 1949; Andersen, 2012).

Entrepreneur:

In this study an entrepreneur is characterized as someone who is able to convert innovative ideas into successful products or services and to create value out of it. An entrepreneur gets things done and has capabilities to foster new ideas and turn them into a marketable good. The concept of Schumpeter Mark II can be understood as an entrepreneurial concept with a focus on larger organizations (Schumpeter, 1934; Andersen, 2012).

However, up to now it remains unclear how an entrepreneur contributes to the entrepreneurial function of larger corporations. The next subsection outlines this research gap in greater detail and describes the scope of this research.

2.6 Research gap and research question

2.6.1 *Scope of this research*

The understanding of the entrepreneur for the present investigation builds upon the theory of the Schumpeterian entrepreneur as being a creative, innovative and alert person – someone who carries out new combinations and notices opportunities earlier than others. The pattern of innovative activity that is the subject of this study concerns Schumpeter's entrepreneur Mark II - the creative accumulation or "deepening" within large corporations. For this reason, the entrepreneur defined here is closely related to the concept of the "intrapreneur" introduced by Pinchot (Pinchot, 1985). Harvey et al. (2010) stated that the importance of innovations by entrepreneurs is becoming even

more important as global competition offers more entrepreneurial opportunities from a greater pool of people (Harvey et al., 2010).

The amount of academic contributions in the field of entrepreneurship is tremendous. As previously discussed, much research focusing on the internal factors of the entrepreneur (individual personality, capabilities and psychological constitution) has been conducted. However, research that contributes to the external factors influencing the entrepreneur has experienced a slight decline over the past years due to the focus on the psychology of the entrepreneur. Moreover, many studies refer to the entrepreneur as someone who creates a new venture, but fewer studies address the problem of how entrepreneurs act within large corporations which is closely related to the literature stream of corporate entrepreneurship. This research project investigates innovative activities of entrepreneurs in all four corporate entrepreneurship domains as defined by Covin and Miles (1999). That means sustained regeneration, organisational rejuvenation, strategic renewal and domain redefinition are taken into consideration (Covin and Miles, 1999). This further implicates that innovation of all types are taken into account – continuous as well as discontinuous or breakthrough innovation. Fontana (2012) found that breakthrough inventions are more likely to emerge in the Schumpeter Mark I type of context rather than in a more stable Schumpeter Mark II type. Yet, this investigation is interested in all kinds of innovative activities carried out by entrepreneurs. Van Es and Van der Wal (2012) further showed that innovative behaviour of companies essentially consisted of technical and business process optimization, new types of collaboration, and renewing competencies as well as developing a fitting strategy. This means that non-technological innovation domains greatly gained in importance (Van Es and Van der Wal, 2012) which is another argument to include all kind of innovation that happens within a company.

Furthermore, the internal and external factors influencing the entrepreneur, as shown in subsection 2.3.4, do not have priority to this research project because it is not intended to engage in theory building about the character or psychological profile of an entrepreneur, rather it is intended to investigate the entrepreneurial function that is carried out cooperatively in larger corporations. However, in order to identify entrepreneurial active people in the investigated case studies several characteristics need to be described for a consistent research approach. The main focus still remains at the entrepreneurial function and its relation to different corporate functions and organisational hierarchies.

2.6.2 Literature gap

As shown in this literature review many scholars have contributed to the current discussion about the entrepreneur in different contexts. However, research concerning the investigation of the entrepreneurial function that is carried out cooperatively especially in large corporations shows the need for deeper investigation. Schumpeter's originally posed question of

“who should be considered the entrepreneur in the large corporation today?”

(Joseph Alois Schumpeter)

still is a challenging question (Schumpeter, 1947). Even though different entrepreneurial roles were defined over time as discussed in subsection 2.4 there is still little evidence about how the entrepreneurial function according to Schumpeter splits up across different corporate functions, organisational hierarchies and according to different intensities or concentrations of entrepreneurial activity.

Augsdorfer (2012) presented the bootleg entrepreneurial behaviour that only takes place in the R&D department and further raised the question if Schumpeter's entrepreneur could also involve other corporate functions and therefore be scattered around the firm. Further, it has to be noted that Schumpeter himself emphasised the selection of leaders in organisations as one of the most important factors in influencing who will be an entrepreneur in an organisation (Schumpeter, 1927). This argument also points to the question whether organisational hierarchies and especially people in management level are of importance to the split up of the entrepreneurial function. The connection of an organisational architecture and the tendency of managers to succeed across different stages in the entrepreneurial process is further inquired and asks for investigation (Kuratko et al., 2005).

Klerkx and Aarts (2013) present the latest investigation about the interaction of multiple champions in orchestrating innovation. They point out that different kind of champions complement each other in primary and secondary innovation networks (Klerkx and Aarts, 2013). However, they advise against oversimplifying innovation communities as a unified team of champions because innovation communities as a team of champions are not stable but dynamic entities (Klerkx and Aarts, 2013). This indicates the complexity of the entrepreneurial function being carried out cooperatively.

Braunerhjelm and Svensson (2010) argued that a combination of the abilities of an inventor and an entrepreneur with regard to different stages of an innovation process is helpful to facilitate customer adaption and strengthens knowledge transfers. The distinction between an inventor and an entrepreneur, however, appears to remain unclear when it comes to the allocation of their contribution according to different corporate functions and their day-to-day business activities. Nonetheless, it has to be clarified that the current research project is not interested in investigating innovation network theories in practice, rather it focuses on the entrepreneurial function according to the transition of Schumpeter's entrepreneur Mark I to Mark II. As Andersen (2012) points out, the major historical transition from Schumpeter Mark I to Mark II is still an important challenge for evolutionary economics.

Therefore, it can be summarised that a literature gap concerning the split up of the entrepreneurial function according to Schumpeter in larger organisations could be identified. Up to now there seems to be no research contribution that fills the gap of how the outlined entrepreneurial function is manifested in larger companies according to different contributing roles and their relation to corporate functions, organisational hierarchies, and networking activities. Furthermore, research insights are demanded that stakeholders outside of academic experts find useful (Wiklund et al., 2011). This refers to the contribution to practice that is tried to comply with this research investigation with regard to the identification of entrepreneurial contributors and according to influencing factors. Therefore, it is the aim of this study to investigate this emerging question referring to different corporate functions, organisational hierarchies and different intensities in order to contribute to the theory of the entrepreneurial function. This can be understood as brick to the knowledge wall under investigation

2.6.3 *Research question*

After defining the scope of this study and identifying the literature gap, the research question will be defined. As Harvey et al. (2010) outlined in their view of entrepreneurship and innovation according to Schumpeter, the importance of innovation by entrepreneurs is becoming even more important as global competition offers more entrepreneurial opportunities from a greater pool of people. To find and make use of these entrepreneurial individuals for their survival further remains a key challenge for

companies (Sarasvathy, 2008). That is why through this study there is an attempt to contribute to practice by helping companies to identify their entrepreneurial function especially in larger organisations.

The research question for this investigation therefore reads as follows:

Who should be considered the entrepreneur in the organisation today as firms grow from small to large?

This research question will be investigated in different sizes of companies in order to follow the way the entrepreneurial function splits up with regard to different corporate functions, organisational hierarchies and intensities or concentrations of entrepreneurial activity.

As previously shown the various literatures offer a wide range of influencing factors on how entrepreneurial activity is carried out in different corporate settings. This is why two sub-questions emerge:

- a. Where does entrepreneurial activity take place in the organisation when different corporate functions and organisational hierarchies are concerned?*
- b. Who is involved in entrepreneurial activities?*

These two sub-questions concentrate on a more concrete picture of the entrepreneurial function itself. The question of “who should be considered the entrepreneur” can be understood as comprehensive question that needs precision in order to be investigated. That is why the two sub-questions are raised with a more specific focus. As Autio et al (2014) outlined the nature of entrepreneurial activities in different contexts is a very promising area of research and needs more investigation. That is why the following question needs to be raised in this context as well:

- c. How does the entrepreneurial function split up in the larger organisation?*

External influencing factors and the context of how innovation is happening within different sizes of companies are key contributors to understanding the entrepreneurial function that Schumpeter mentioned many years ago. This is why the interview questions as shown in Chapter 3 refer to a wider range of sub-questions in order to get a

more thorough understanding of what is really happening within the organisation when entrepreneurs create value by innovation in their specific context.

2.7 Summary and outlook

This chapter outlined the literature review of the relevant academic literature and was introduced by Schumpeter's core idea of the entrepreneur and the relation to the evolutionary framework of corporate entrepreneurship. Further, the Schumpeterian idea of the entrepreneur and the entrepreneurial function was explained in relation to the literature stream of corporate entrepreneurship. After that, the existing entrepreneurial roles were reviewed. The focus and scope of this investigation was described and the literature gap according to the entrepreneurial function in larger organisations could be identified. After that, the main research question could be formulated. It is now the aim of the following chapter to explain how this research question will be answered in respect to the applied methodology.

Chapter 3. Methodology

3.1 Introduction

In this chapter the methodology of the current research project is outlined. The reviewed literature already shows that the initial question about the entrepreneurial function within different corporate functions, organisational hierarchies and intensities in larger corporations is an open question at present. This demands a research project that covers different organisations, different company sizes, with different corporate functions and hierarchical levels. Every research project needs its own methodology. Therefore, there is a need for an explicitly designed research methodology that is able to answer this question appropriately.

This chapter builds the theory of how this investigation was carried out and explains its detailed applied research design. The field of organisational research is characterized especially by trends like widening boundaries, a multiple paradigmatic profile, and methodological inventiveness (Buchanan and Bryman, 2007), which makes it a complex terrain and therefore even more important to obtain a clear understanding of the applied research methodology. Thus, in order to reach for the most precise research procedures and a genuine conduct, an attempt is made to explain different influencing factors for the methodological choices that were made within this research about the entrepreneurial function in organisations (Buchanan and Bryman, 2007). It is not enough to identify the type of evidence required to answer the research questions in a convincing way (de Vaus, 2001), but it is also necessary to deliberately reflect on possible influencing factors and underlying philosophical assumptions as well as their implications during the research process (Easterby-Smith et al., 2012). Furthermore, McGrath (1982) points out that the research process can be viewed as a series of interlocking choices, where one tries simultaneously to maximize several conflicting desiderata that in fact need to be lived with. However, constructing a research design in a thorough way needs this contention among generalisability, precision and realism (McGrath, 1982), otherwise the risk of neglecting visible and hidden limitations of a study might jeopardize the quality of the contribution. The following overview of the methodology and the according subsections show how this research project meets these requirements.

Saunders et al. (2012) explain different dimensions of research methodology by using the image of an onion that is constructed in different layers. This chapter refers to the structure of the research onion starting with the most external level. Therefore, chapter 3.2 deals with the philosophical paradigm that can be understood as the light in which this investigation was undertaken. Chapter 3.3 deals with the general research approach and explains the background of theory building in an inductive and explorative way. The following chapter 3.4 outlines the research strategy with explanations how grounded theory and case study research were applied as mixed methods. It further describes the general timeframe of this study. Chapter 3.5 covers the specifications of the data collection techniques as well as details of the interview procedures. Chapter 3.6 then sets out how the huge amount of data in the form of interview transcripts were analysed with the help of the computer-assisted qualitative data analysis software NVivo. Following this, the way of data verification is covered in chapter 3.7. As mentioned above, it is important to further discuss the quality of the research design. This is done in chapter 3.8 by reviewing the research quality characteristics of reliability and validity. This discussion leads to the detailed consideration of the present strengths and limitations in chapter 3.9. The chapter ends with a short summary on the methodology and gives an outlook into the next part of the research findings.

3.2 Research philosophy

Research philosophy in general relates to the development of knowledge and the nature of that knowledge when investigating social phenomena (Saunders et al., 2012). The entrepreneurial function within an organisation can be understood as the present social phenomenon under study. Today's state of research offers a wide range of philosophical paradigms and the borders partly coalesce. However, there are two main ways of thinking about research philosophy: ontology and epistemology (Saunders et al., 2012, Easterby-Smith et al., 2012). These two levels can be understood as main philosophical anchors (Ponterotto, 2005). The current research is constructed under the philosophy of social constructionism within a subjectivist and interpretivist view because it appears to be the nearest position for the qualitative nature of the research question as well as the nearest position for how the researcher herself understands reality. In the following, the ontological and epistemological implications of this philosophical position are discussed briefly.

The ontological level is concerned with the nature of reality and therefore challenges the assumptions about the way social phenomena are seen. A social constructionism position views reality as being socially constructed, and therefore it is important to study the details of the situation to understand the reality (Saunders et al., 2012). This is how the situation of the entrepreneurial function was investigated within the organisational context of each company. It is assumed that the entrepreneurial function is something that is in need of individuals to be carried out. Therefore this entrepreneurial function is seen as something the organisation carries out as a result of the process of continuing social enactment (Saunders et al., 2012). This reflects the subjectivist point of view, because in order to understand how this entrepreneurial function works in the real world context, it is important to comprehend the meanings that individuals attach to it. Through the interaction between investigator and participants deeper meaning of this lived experience can be uncovered from the point of those who live it day to day (Ponterotto, 2005). It is crucial to note that attempts are not made to unveil one single truth from the realities of the participants. It is possible that a different researcher looking at the same interview transcripts arrives at different themes and conclusions. However, attempts are made to identify one feasible explanation of what happens with the entrepreneurial function today. This explains why the constructivist paradigm provides the primary foundation and anchor for a qualitative research approach as presented in this research project.

The epistemological level is further concerned with what is acceptable knowledge in a particular field of knowledge (Saunders et al., 2012). This research project takes an interpretivist point of view since there is a difference between investigating human beings with their own perceptions or investigating an object like a computer. Therefore the researcher needs to adopt an empathic stance. Interviewing people provides this chance to enter their world and their realities (Saunders et al., 2012). The further process of making sense of other people's interaction also implicates certain value systems. In this context it is acknowledged that the researcher's values play an important role during the research process especially when interpreting the data. Ponterotto (2005) explained this axiological issue by stating that it is a fallacy to even think one could eliminate value biases in such an interdependent researcher-participant interaction.

The outlined philosophical position with its ontological and epistemological implications on the current research process can be understood as the light in which the research design is further constructed.

3.3 Research approach

For the present research project a more inductive approach was chosen in order to focus on collecting data and developing theory as a result of the data analysis rather than testing predefined hypothesis. This approach requires a close understanding of the research context, which is why the entrepreneurial function as research objective was explained within the broad context of economic change and uncertainty as well as organisational learning, innovation and corporate entrepreneurship. Buchanan and Bryman (2007) pointed out that historical properties are part of those factors that constitute a system of inevitable influences on research. This means that past experience, frameworks, conceptualizations, and findings influence contemporary choices of research focus and appropriate methods (Buchanan and Bryman, 2007). The current investigation therefore started with a thorough review of the literature in order to identify the research gap in relation to existing theory. A search strategy for investigating the tremendous areas of different literature streams helped to deal with the scope-noise dilemma (McGrath, 1982). This included defining key words and key word combinations, searching databases and journals according to academic journal rankings as well as deciding on inclusion and exclusion criteria. A detailed approach like this ensures that the historical properties as explained above are knowingly included and therefore related to theory.

In addition to that, the inductive approach also reflects the more flexible structure that permits changes of the research emphasis during the research progress. As an exploratory study it is of great interest to find out what exactly is happening, to seek new insights and to assess phenomena in a new light (Saunders et al. 2009). Up to the beginning of this study, the entrepreneurial function has not been investigated according to different corporate functions, organisational hierarchies, intensities or concentrations and company sizes. Hence, an inductive and exploratory research approach was applied.

3.4 Research strategy

The next three methodological levels according to Saunders et al. (2012) are the research strategy, the methods choices and time horizons which will all be jointly discussed in this chapter.

3.4.1 *Grounded theory and case study research*

The research strategy consists of a twofold approach and therefore brings together grounded theory and case study research. Firstly, the basic strategy of grounded theory is applied since an attempt is made to build theory from generated data rather than testing it (Locke, 2001, Corbin and Strauss, 2008, Charmaz, 2011). This strategy makes it possible to start data collection as an interpretive process without the formation of an initial theoretical framework that gives a detailed overview of already existing possible outcomes of the research (Glaser and Strauss, 1967). It was the intention to investigate the entrepreneurial function in different company sizes without a predefined conception and therefore identify what is really going on within the studied companies. Glaser and Strauss (1967) pointed out, that the purpose of grounded theory is to elicit fresh understandings about patterned relationships between social actors and to determine how these relationships and interactions actively construct reality. In the present research project an attempt was made to investigate corporate entrepreneurs as social actors and their ways of carrying out the entrepreneurial function. However, grounded theory is not meant to be applied without a clear understanding of the research question and its context (Suddaby, 2006). In the current research project the research question about the entrepreneurial function is clearly framed as a phenomenon within a corporate setting. This assures that the research question in fact is open ended but still integrated in the broader research context. As Suddaby (2006) stated, the key issue is that grounded theory is an interpretive process, not a logic-deductive one. Therefore, using grounded theory in this investigation supports the inductive approach as well as the subjectivist and interpretivist view as explained beforehand.

Applying grounded theory means that there is no previously defined set of possible outcomes at the beginning of data collection. This is why this research project started with a broad range of interview questions in order to explore the whole context of the phenomenon of the entrepreneurial function. The detailed interview questions will be

explained in Chapter 3.5.4 in detail. However, there is a clear analytical framework derived from the literature review that serves as theoretical foundation for this research. The evolutionary framework of Schumpeter's entrepreneurial function as outlined in Chapter 2.2.2 builds the main basis for this research project. It explains the background conditions for entrepreneurial activity with regard to economic change, the role of uncertainty, organisational learning and innovation. The raised research questions are investigated in the light of this analytical framework.

Secondly, the basic strategy of case study research is applied. The decision of engaging in case study research simultaneously refers more to the part of data collection and analysis. Nevertheless, case study research can be practised according to an inductive approach. Eisenhardt (1989) described this process of theory building by using case study research. According to her study, this process is alive with tension between divergence into new ways of understanding the data and convergence onto a single theoretical framework (Eisenhardt, 1989, Eisenhardt and Graebner, 2007). In order to investigate the entrepreneurial function in different companies and on different hierarchical levels, this research is designed as a holistic multiple-case study within which a single company is understood as the unit of analysis (Yin, 2007). As already stated the initial research question was to find out how the entrepreneurial function splits up when larger companies are concerned. This phenomenon needed to be studied in its natural setting and through observing the actual practice (Voss et al., 2002). The emphasis was to understand the nature and complexity of the complete phenomenon, which is why case study research and grounded theory were combined.

3.4.2 *Methods choice and time horizons*

The nature of this research project is more qualitative. Saunders et al. (2012) discussed the multiple methods choices as the way in which data collection techniques and analysis procedures are combined. The present research was designed as a multi-method qualitative study. Thus, it was possible to benefit from triangulating different perspectives of analysis through the combination of grounded theory and case study research. The in-depth interviews, company's website information as well as the organisational structure charts build a rich set of data. This approach offers the advantage that the rich data can be analysed in multiple ways. The case study research offers analytic possibilities across companies of different sizes like cross-case pattern

matching. The in-depth interviews create the possibility to go beneath the surface of the described experiences during the interview and therefore create more in-depth results. This further increased the confidence in the accuracy of the observations (Easterby-Smith et al., 2012).

Buchanan and Bryman (2007) pointed out that personal properties also influence methods choice. For the current investigation this is particularly true when it comes to the researcher's affinity for in-depth, face-to-face encounters and the challenge of identifying pattern and order in qualitative data (Buchanan and Bryman, 2007).

The study focuses on 24 cases representing six small, seven mid-sized and eleven large manufacturing and service oriented companies of different branches and industries in Germany. Over a period of seven months, 97 in-depth interviews were conducted with people from different departments and hierarchical levels. Therefore, it is a cross-sectional study (Saunders et al., 2012).

3.5 Data collection

In the following, the process of data collection with personal interviews is explained with reference to the number and structure of conducted interviews, which selection criteria were applied and how data was documented.

3.5.1 *Overview of conducted interviews*

According to the European Union (Commission, 2003) definition of company sizes, 97 in-depth interviews were conducted in six small, seven mid-sized and eleven large companies as shown in table 1 below¹. In addition to that three senior managers of major corporations were interviewed as experts in the field of organisational change and innovation. The 97 in-depth interviews had an average duration of 52 minutes.

¹ The detailed list of conducted interviews can be found in Appendix A.

Company size	Companies	Interviews
Small	6	7
Midsized	7	30
Large	11	57
Experts	-	3
<u>Total</u>	<u>24</u>	<u>97</u>

Table 1: Overview of conducted interviews

3.5.2 Selection criteria of companies and informants

The 24 companies were selected by purposely choosing corporations across different industries and branches. Within the small companies under study, three manufacturing and three service-oriented companies from the metalworking industry as well as technologies, product complexity and innovation services were investigated. The midsized companies included four manufacturing companies from automotive engineering, tool construction, building equipment and food industries. The remaining three midsized companies offer engineering, print and media as well as technological services. Seven of the large companies under study are manufacturing firms from different industries such as tool construction, agricultural machinery, print and media, energy, food as well as labelling and packaging. The remaining four of the large companies provide services within transportation, mobile phone, building equipment and engineering industries.

Moreover, the companies were chosen by using a mixture of resources. Some of them were contacted by using company lists from the database of the German Chamber of Commerce and industry or other mercantile directories. Other contacts came from already existing networks like the Innovation Lab Germany (Augsdorfer, 2013) as well as earlier established personal contacts to companies that fit the rest of the selection criteria also known as personal and organisational properties by Buchanan and Bryman (2007).

As further selection criteria, accessibility as well as proximity influenced the choices in order to ensure the time-wise feasibility of the study. The initial request for interviews was sent out to 44 companies in the southern part of Germany but twenty of them declined to participate in the study due to time constraints or lack of interest in the research topic. In the process of negotiating the interview conditions with the participating companies, it was important to have access to an initial interview with the managing director or a member of the management board. This was possible in 21 of the 24 cases. In the remaining three cases the initial interviews were conducted with division managers. It was anticipated that managing directors have a sense for who is involved in entrepreneurial activities. Following this approach made sure that the managing directors and division managers could recommend entrepreneurially active people within the company for further interviews. Therefore, the political properties of layered permissions and negotiated objectives, as Buchanan and Bryman (2007) summarised them, are taken into account.

Additionally, the mixture of companies from manufacturing and service-oriented industries was intended to enlarge the expertise about the entrepreneurial function. It is anticipated that the entrepreneurial function should be able to be described independent of industries or branches. In addition to that, the size of the companies was another selection criterion because it was intended to investigate the entrepreneurial function across different sizes of companies. Organisational structures and systems change when companies get bigger. The approach to investigate different sizes of companies allows for findings about the entrepreneurial function when certain corporate functions and organisational hierarchies get more and more important as the companies grow. As this research has time and resource constraints, it was not possible to investigate a major corporation but attempts were made to get a few expert experiences from the field of organisational change. These three people were selected due to personal recommendation. In the following the companies and conducted interviews are presented in detail according to the company sizes.

Small company case studies:

The investigation included seven interviews in six small companies. In five of these companies the managing director could be interviewed (CS-01, CS-02, CS-03, CS-04, CS-06), in one company a team leader was available (CS-05), and in one case study the head of research and development could be interviewed additionally to the managing director (CS-01). The following overview shows the industries of the small company case studies, how many interviews were conducted in each company and with whom, as well as the overall number of employees (see table 2). As explained earlier the companies were chosen as a combination of service oriented (CS-01, CS-02, and CS-05) and manufacturing companies (CS-03, CS-04, and CS-06).

Case study	Industry	Interviews	Interview partner	# Employees
CS-01	Surface metrology, 3d measuring systems	2	managing director, head of R&D	14
CS-02	Product complexity management	1	managing director	15
CS-03	Metal processing	1	managing director	21
CS-04	Sheet metal working	1	managing director	30
CS-05	Innovation management	1	team leader (ideation / innovation design)	41
CS-06	Metal processing	1	managing director	49

Table 2: Overview of case studies in small companies

Midsized company case studies:

The research project further included 24 interviews in seven midsized companies. Table 3 outlines the case studies, industries, number of conducted interviews, the interview partner and the overall number of employees of the companies. Further, the midsized company case studies were chosen as a combination of service oriented (CS-10), manufacturing companies (CS-08, CS-12, CS-13), and companies that provide both (CS-07, CS-09, CS-11).

Case study	Industry	Interviews	Interview partner	# Employees
CS-07	Tool construction	7	3 managing directors, engineering manager, planning process manager, tool construction manager	58
CS-08	Beverages	2	managing director	60
CS-09	Print and digital media	3	managing director, head of sales	120
CS-10	Automotive development	3	managing director, head of human resources	170
CS-11	Industrial doors	3	head of operations, head of purchasing	140
CS-12	Tool construction	7	2 managing directors, head of sales, head of quality management, head of project management, head of production, head of construction	205
CS-13	Automotive / coaches	5	head of sales, 2 heads of R&D, head of quality manager	246

Table 3: Overview of case studies in mid-sized companies

Large company case studies:

Next to the research in small and mid-sized companies 48 interviews in eleven large companies were conducted. Four large company case studies are service-oriented businesses (CS-14, CS-15, CS-23, CS-24), and the remaining seven are manufacturing companies (CS-16, CS-17, CS-18, CS-19, CS-20, CS-21, CS-22). The following table 4 provides an overview with details to the case studies, their industries as well as the interview partners.

Case study	Industry	Interviews	Interview partner	# Employees
CS-14	Building technologies	2	managing directors	350
CS-15	Automotive engineering	10	managing director, 7 team leader	400
CS-16	Tool construction and moulding technology	18	company founder, CEO, CFO, team leaders	690
CS-17	Agricultural machines	4	2 managing directors, head of sales	735
CS-18	Intelligent labels	2	director strategic marketing & business development, head of sales	750
CS-19	Publishing and printing	7	2 managing directors, 2 publishing directors, chief editor, director IT	1200
CS-20	Energy	2	head of business development	1700
CS-21	Organic baby food	2	2 managing directors	2000
CS-22	Agriculture, building and energy	2	product and regional manager	2000
CS-23	Telecommunication	3	head of portal development, head of digital global product development	5000
CS-24	Aviation	5	2 managing directors, head of innovation, head of transport services	7700

Table 4: Overview of case studies in large companies

3.5.3 *Semi-structured interviews*

All of the 97 interviews were conducted in Germany mostly at the offices of the interview partners. The language of the interviews was German except for one interview that was conducted in English.²

The interviews of the current research were designed as semi-structured interviews in order to create a more structured way of analysis later. The interview guide (see Appendix B) is subdivided into three parts. The first part was the personal introduction of the researcher including professional background and the reasons for choosing the current research topic. In the second part, the research topic, general aim, definitions and interview conditions were outlined. In a topic that deals with entrepreneurial activities and innovation as fields with wide interpretation possibilities, it is especially important to clarify meanings and definitions before going deeper into topic-related questions. As the topic of the entrepreneurial function in some ways can be interpreted as special and outstanding performance of certain employees who carry out entrepreneurial activities, it was important to guarantee confidentiality of private data that could identify the participants (Kvale and Brinkmann, 2009). Confidentiality as an ethical factor in this research means that not only the private data of the interview partners are confidential but also the names of the company as agreed with the managing directors of each corporation. Furthermore, the third part of the interview guide included eight open-ended interview questions that served as a guideline for the interview conversation (Keats, 2001, Kvale and Brinkmann, 2009). The interview conversation was mostly followed by a short personal introduction of the interview partner and his or her main tasks and responsibilities in the organisation.

The interview questions were conceptualized to get as much information about the entrepreneurial function as possible. Attempts were made to gather information about how entrepreneurial activity is carried out in the organisation according to different corporate functions, hierarchical levels and intensities or concentrations. The subsequent questions aimed to find out what exactly covers the entrepreneurial activity and whether certain personalities, characteristics, capabilities or affinities of people play an important role. In order to understand why people get engaged in entrepreneurial activities within companies, the next question asked for their motives and motivation. It was the further aim of this study to find out if and how entrepreneurial activities can be

² A language bias could be ruled out because the researcher speaks English fluently.

facilitated and what kinds of barriers exist in the daily work life. These interview questions offer a wide range of information of the phenomenon under study but at the same time are clearly focused to contribute to findings about the entrepreneurial function across different corporate functions and company sizes.

3.5.4 *Derived interview questions and key themes*

The literature review shows that the main question about Schumpeter's entrepreneurial function is one that points into several directions. In order to investigate all possible influencing factors of the phenomenon seven interview questions were derived from the literature review.

The main research question picks up on Schumpeter's original question of who should be considered the entrepreneur in the large organisation of today. This study is interested in finding out how the entrepreneurial function is actually functioning. Schumpeter Mark I refers to innovation in small companies whereas Schumpeter Mark II concerns larger organisations. When larger organisations are concerned this means that due to the division of labour different corporate functions are concerned. This is why the study investigates different sizes of companies (small, mid-sized and large organisations) and takes the influence of different corporate functions into consideration.

The main research question and the three sub-questions as shown in the literature review (see Chapter 2.6.3) build the basis for this investigation:

Who should be considered the entrepreneur in the organisation today as firms grow from small to large?

- (a) How does the entrepreneurial function split up in the larger organisation?*
- (b) Where does entrepreneurial activity take place in the organisation when different corporate functions and organisational hierarchies are concerned?*
- (c) Who is involved in entrepreneurial activities?*

These theoretically established research questions are investigated by interviewing people who are actually involved in the entrepreneurial process within different corporate settings. The research questions themselves however are not suitable for personal interviews with people who did not do literature research in this field of research. That is why the research questions need to be translated into a more simple set of questions that enable practitioners to talk about their daily experiences in the field of entrepreneurial activities in their specific environment. This is why the following seven questions were derived from the theoretical research questions. These questions were used as a semi-structured interview guide during the field work and are explained in brief in the following.

The first question refers to the division of labour and its consequences in the organisation especially when the company gets bigger.

1. Where does entrepreneurial activity take place in the organisation (corporate function, organisational level)?

This question tries to shed some light on where entrepreneurial active people are located within the organisation. On the one hand the question aims for information about a possible concentration on specific corporate functions. On the other hand it aims for information about the role of hierarchical level that may point out the influence of leaders and management or specific entrepreneurial roles within operations.

The second question tries to gather information about the actual activity of entrepreneurs within the organisation.

2. What exactly is it that people do that would make them an entrepreneur?

This question refers to the possible description of entrepreneurial activity that may be used to describe certain entrepreneurial roles and also be connected to tasks in different corporate functions. In smaller and medium sized companies this question is especially important because in many cases there is no clear cut division of labour due to the company size. It is tried to use the outcome of this question to match work areas and therefore link them to different corporate functions. This makes it easier to use constant comparison (see Chapter 3.6) within the analysis of interview data.

The first and second interview question can be understood as the main focus of this research project as both of them directly refer to the description of the entrepreneurial function of today's organisations.

However, it is tried to cover all aspects of the phenomenon under study and therefore other influencing factors need to be considered as well. This is what the rest of the interview questions try to cover. They refer to personality, motivation and affinities of entrepreneurial active people as well as on facilitating and hindering factors of the entrepreneurial function. All of them can be understood as context questions of the phenomenon.

3. *Do certain personalities, characteristics or capabilities of people play an important role to enable them to be an entrepreneur?*
4. *What is the motivation of people who act entrepreneurially?*
5. *Do different levels of entrepreneurial action exist that are related to the personal affinity to guidelines or freedom in their daily work?*

Interview questions 3, 4 and 5 refer to the entrepreneurial personality. In order to identify entrepreneurial roles and differentiate them from already existing roles as shown in Chapter 2.4 it is important to really understand what people mean when they talk about specific characteristics of entrepreneurial active people.

Interview questions 6 and 7 cover the background of how it is possible that entrepreneurial activity is happening within the organisation. This context analysis is important to include as barriers and facilitation of entrepreneurial activity play a key role for further managerial implications.

6. *How can entrepreneurial activity be facilitated?*
7. *Are there any kind of barriers that hinders entrepreneurial action?*

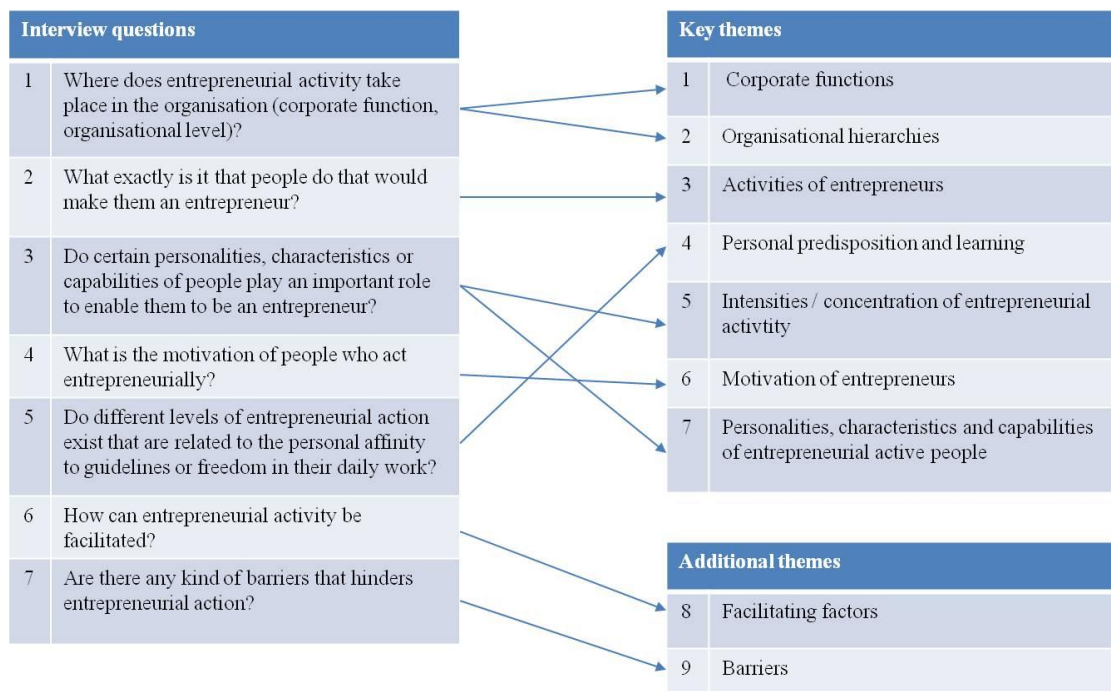
During the interview process and the analysis of data (as further explained in Chapter 3.6) seven key themes emerged. These seven key themes are presented as follows:

- (1) corporate functions
- (2) organisational hierarchies
- (3) entrepreneurial activities
- (4) personal predisposition and learning
- (5) intensities / concentration of entrepreneurial activity
- (6) motivation of entrepreneurs
- (7) personalities, characteristics and capabilities of entrepreneurial active people

From interview question number one, two themes could be identified: (1) corporate functions and (2) organisational hierarchies. Interview question number two refers to key theme (3) covering the entrepreneurial activities. From interview question number three the key theme of personal predisposition and learning (4) as well as the key theme about personalities, characteristics and capabilities (7) could be derived. Interview question number five is the basis for the emerged key theme (5) referring to different intensities of entrepreneurial activity. Interview question number four is presented in key theme (6) that deals with the motivation of entrepreneurs.

The two last interview questions about barriers and facilitating factors of entrepreneurial activity are presented later on in a separate chapter as both of them refer to more context related information about the entrepreneurial function. However, they are of great value for further managerial implications as presented in Chapter 9.

The following graphic provides an overview about the previously outlined link of the interview questions and the derived key themes by data analysis.



Graphic 1: Link between interview questions and derived themes

3.5.5 *Pilot study and main research*

In order to test the interview guide and begin the process of interviewing, a pilot study with 17 interviews in a large company was conducted. This helped a lot to dive into the practice of interviewing people in their daily business. A few minor corrections in the interview guide, such as skipping Likert-scale questions about the innovativeness of a company, were made. After the first few interviews it was clear that the Likert-scale questions about the innovativeness are not clear enough for the interviewee and therefore hard to answer. In addition to that the outcome of an average value is biased because the interviewees have very different understandings about what innovativeness is to them. That is why the Likert-scale question and the outcome of it was assessed to be of no contributing value for this research project and therefore was skipped.

The researcher also got a clear understanding of how to introduce the research topic to interview participants. After this pilot study, which was included into the main research results as well, the following 23 companies were investigated.

3.5.6 *Documentation*

During the interviews handwritten notes were taken. There was no tape recording because the interviewee might have felt uncomfortable talking about the main key drivers of entrepreneurial action within their corporation which creates the impression of evaluating colleagues, disciplinarians and employees. Immediately following the interview the researcher reviewed the interview notes and complemented them so that the interview could easily be transcribed afterwards. To ensure anonymity of the interview transcripts, the interview partner were given coded interview identification numbers.

The data set that was used for later analysis consists of the interview transcripts as main source of evidence as well as company information from the web sites and internal documents such as charts of the organisational structure.

3.6 Data analysis

The analysis of qualitative data is a challenging and messy process because it is rich in substance and full of possibilities (Corbin and Strauss, 2008). It is clear that there is not only one story that can be constructed from the data (Corbin and Strauss, 2008). The process of analysis is therefore understood as an interpretive process. The whole coding and analysis procedures underlie the interpretation decisions of the investigator. That is why some coding and analysis decisions might not be fully comprehensible to the reader. In one interview, for example, the interviewee clearly stated that the new chief executive officer (CEO) and sales manager of his company can be seen as the main driver of the entrepreneurial function. Later, the interview partner partially retracted his earlier statement by saying that there are entrepreneurs across all functions and hierarchical levels. The researcher already knew about the background of the company and used the analytical tool of selective coding to use the earlier clear statement of the interview partner for further interpretations. There are a few examples like this that happened during the coding and analysis process. However, attempts were made to explain as many decisions about coding and interpretation moves as possible.

In order to triangulate the data analysis three analytic techniques were used: grounded analysis, constant comparison and cross-case pattern matching (Bryman, 2012). As the collected interviews offer an extensive amount of data it is important not to get lost in details which is only possible by sticking to a clear data analysis strategy. This analytical process is explained in the following.

3.6.1 *Sorting and coding*

The first step was to sort and ascribe the interview transcripts to the according companies and company size categories of small, mid-sized and large companies. This database was setup with the help of the computer assisted qualitative data analysis software (CAQDAS) NVivo.

After that, the process of coding these 460 pages of interview transcripts was started case by case. Saldana (2009) explained the two-cycle approach of coding that was applied in this research. The coding process therefore started with a first cycle coding, also referred to as open or axial coding (Corbin and Strauss, 2008), to see what is

important or useful and to order the interviews into themes (Saldana, 2009). Every interview was different. The researcher tried to follow the conversation flow and utilised the questions of the interview guide in different orders. This is why the first step of the open coding process was to ascribe the answers of the interview transcripts to the according question nodes as well as sorting out unimportant contributions from the interview partners. Thus, as an example, the investigator interpreted conversations about the interview partner's children and their education as irrelevant for the interpretation of the entrepreneurial function within the company. The results of the first cycle coding were nine different question nodes as shown in the following graphic 2.

Name	Sources	References
1st & 2nd cycle coding	0	0
Q#1_Division of labour (where)	78	302
Q#2_Entrepreneurial action & performance (what)	75	302
Q#3_Motivation (why)	69	130
Q#4_Personality, character, skills (who & with what)	0	0
I_Personality, character & skills (who & with what)	73	179
II_Entrepreneurial spirit of people - have it or not	64	98
III_The Innovator's DNA	49	182
Q#5_Different levels of entrepreneurial action	0	0
I_Different levels of entrepreneurial action	62	88
II_Affinity to guidelines or freedom	58	71
III_Cross coding other questions	0	0
Q#6_Facilitation	74	158
Q#7_Barriers	76	200
Q#8_Culture & environment	0	0
Q#9_What else is important for you	21	24

Graphic 2: Overview of first cycle coding nodes in NVivo

From the initial seven questions of the interview guide, nine question nodes could be derived to directly organize matching sets of answers. The first node concerned the division of labour and contains answers according to the question of where the entrepreneurial function operates according to different corporate functions and hierarchical levels. The second node covers the descriptions of the entrepreneurial activity itself. Answers concerning motives and motivation of corporate entrepreneurs were allocated to the third node. The question about the impact of different personalities, characteristics and capabilities was directly organized into three sub-nodes of the fourth question node. The same procedure was carried out with the fifth node and the according question about different levels or intentions of entrepreneurial action. Node number six and seven cover the answers about facilitation possibilities of the

entrepreneurial function as well as existing barriers within the organisational context. The second-to-last node was added to cover relevant contributions about culture and environment of the entrepreneurial function. In some interviews the participants started to talk about other things that they evaluated to be important in the context of the entrepreneurial function. These answers were covered in the last node.

In the second cycle coding, the so-called focused or theoretical coding, attempts were made to identify patterns, similarities, differences, frequencies and causations (Saldana, 2009). This process was carried out by using the first cycle coding results as basis which ensured that only as relevant coded data was summarised and interpreted further on. Each of the question nodes from the first cycle coding was investigated thoroughly in order to identify upcoming themes within the answer categories. As it was intended to provide insights into the development of the entrepreneurial function across different sizes of companies, the coding structure also mirrors the identified themes according to the size categories. NVivo provides the possibility to create a classification system for nodes (Bazeley, 2007). A more detailed overview of this coding structure for the first question after the themes were identified can be found in the following graphic 3. This overview only shows the nodes for the first question of this investigation and serves as an example for the rest of the coding nodes in the second cycle coding procedure.

Name	Sources	References
1st & 2nd cycle coding	0	0
Q#1_Division of labour (where)	78	302
1 Small companies	0	0
Functions	5	8
Hierarchies	7	12
Other descriptions	2	3
2 Midsized companies	0	0
Functions	10	15
Hierarchies	20	43
Other descriptions	5	8
3 Large companies	0	0
Functions	18	26
Hierarchies	39	78
Other descriptions	28	46
Q#2_Entrepreneurial action & performance (what)	75	302

Graphic 3: Overview of second cycle coding nodes for the first question

3.6.2 *Analysis and results matrix*

Based on the second cycle coding results the process of summarizing and deriving analytic propositions was carried out. In order to stick to the analytical strategy, every second cycle node of the different company size categories was exported into a word document for further detailed analysis. Even though this inquiry is of a qualitative nature, the frequency of certain themes was taken into account to get an understanding of repeating patterns within the company size categories. The results of the summarised themes were prepared with the help of an excel file results matrix for each of the nine established second cycle coding nodes (see Appendices C, D, E and I). The interview transcripts and therefore the answers for the coding process were in German. Due to time constraints it was not possible to translate all of the interview transcripts into English. Nevertheless, the coding nodes and all of the results matrices were summarised in English to provide transparency and a better understanding of the developed themes. During that whole process of coding and analyzing from the interview transcripts, analytic memo writing helped the researcher to reflect and write about choices, definitions, emergent patterns and categories – just like an analytic diary. Easterby-Smith (2012) stressed that grounded analysis, as applied in this analysis, allows for more intuition to guide the researcher in the development of an understanding of the data. The analytic technique of constant comparison means that the researcher compares each incident in the data with other incidents for similarities and differences and later on conceptually similar ones are grouped together (Corbin and Strauss, 2008). With the help of these analytic techniques the results matrices were developed (see Appendices C, D and E).

3.6.3 *Development of analytical framework*

The next step of the analytic process was the cross-case pattern matching. The summarised results matrices offer a structured and profound view into the different set of questions. The most important parts for interpreting the entrepreneurial function were the contributions of question one, the division of the entrepreneurial function according to different corporate functions and hierarchical levels, as well as question two and five that deal with the entrepreneurial action itself and the possibility of different levels and intensions. These three questions build the main basis for the concluding arguments as

shown in chapter 8. However, in order to identify entrepreneurial active people in the organisation the questions three and four about the entrepreneur's personality, motivation and characteristics were also important. The practice oriented questions about facilitation possibilities and barriers further helped to gain a deeper understanding of the corporate setting and research context of every single case study.

According to Bryman (2012) theoretical saturation is reached when the researcher gets to the point where there is no further point in reviewing the data or collecting more data. After a thorough coding and analysis process that took about four months to finalize, this point of theoretical saturation was reached.

3.7 Data verification

After the process of data analysis was finished and the effect of saturation was reached, it was important to verify the data. Bryman (2012) explained the respondent validation as a possibility to look for corroboration. This was done by presenting the results to the interview partner and setting up telephone interviews with at least one of the interview partners from each company. With the help of these telephone interviews, the results could be explained in greater depth to the participants and reassured that the results mirror the realities of these companies. In this process 16 telephone interviews in midsized and large companies were conducted. Again handwritten notes were taken during the conversation, and afterwards the interviews were transcribed and analysed accordingly. This process ascertained that the researcher did not interpret the data in a wrong direction but covers the true reality of the daily experiences within the different corporate settings.

3.8 Quality of research design

It is important to pay attention to certain quality criteria to ensure the credibility of the research findings and clearly evaluate strengths and limitations of the study. According to Saunders et al. (2012) two particular emphases need to be considered: reliability and validity.

3.8.1 Reliability

Reliability refers to the extent to which the applied data collection technique or analysis procedures provide consistent findings (Saunders et al., 2012). For the current qualitative research project with a constructionist point of view, this means that two questions need to be answered. The first one is whether similar observations will be reached by other observers and the second question refers to the transparency of data collection techniques and analysis (Easterby-Smith et al., 2012). In this context it is possible that participants were biased because they might have been saying what they thought their superiors wanted them to say (Saunders et al., 2012), for example concerning certain corporate functions being especially important for the entrepreneurial function. Attempts were made to minimize the risk of this participant bias by ensuring complete anonymity of the interview data. For that reason interviewees were more open to talk about their own understanding of who is involved in entrepreneurial activity within the organisation on a daily basis. It also should be noted that it is impossible to freeze a social setting and the circumstances of an initial study (Bryman, 2012). Therefore, the study can be replicated by interviewing the same people in the same companies, but the social situation and circumstances might be different. Furthermore, the possible investigator bias needs to be taken into consideration. It is possible that different investigators would come to different interpretations. As described earlier, this research is undertaken in the light of social constructionism and is understood as an interpretive process. Therefore, it is clear that different investigators might come to different conclusions. Nevertheless, attempts were made to address the investigator bias by making the process of data collection and interpretation as transparent as possible. This is why detailed explanations about the conducted interviews as well as the coding and analysis process were given in chapter 3.5 and 3.6.

3.8.2 Validity

Validity, another important quality criteria, is concerned with whether the findings are really about what they appear to be about (Saunders et al., 2012). A distinction can be made between construct and content validity as well as internal and external validity, whose meanings for this investigation will be discussed now.

Construct validity:

First of all, the question of correct measurement of the phenomenon under study needs to be considered, also referred to as construct validity (Bryman, 2012). Measurement in a qualitative study using interviews and case studies strongly refers to the questions that were asked during the interview and to the process of interpretive analysis later on. It can be stated that the interview questions represent the phenomenon under study in an appropriate way. Asking people who is involved in entrepreneurial activities about their experiences with different corporate functions and the meaning for the entrepreneurial function within the organisation can be seen as the deepest and closest source to real life occurrence of the phenomenon. Furthermore, attempts were made to use multiple sources of evidence by using the interview transcripts, the company information throughout the website as well as internal information about the organisational structure. This data triangulation was used to strengthen construct validity.

Content validity:

Secondly, it needs to be assessed whether these interview questions represent all facets of the phenomenon. Bryman (2012) defined this as content validity. In the current investigation efforts were made to face this quality criterion with interview questions that have a very broad range of directions. At the very beginning of the study it was not clear which directions would play an important role. Therefore, not only questions about the different corporate functions, hierarchical levels and intensities were asked but also questions about the influence of different personalities and personal motivation, as well as barriers and facilitation possibilities were posed. Later on, during the analysis of the interview data it became clear that questions about motivation and different personalities do not play such an important role to the phenomenon itself but were important to identify entrepreneurial active people in the organisation. Therefore, it was good to include these factors in order to ensure that no facets of the phenomenon were left out.

Internal validity:

Internal validity, a third characteristic of validity, refers to the match between the researchers' observations and the theoretical ideas that are developed (Bryman, 2012). This criterion intends to mirror the process of analysis and the derived conclusions. Hence, in the current research project efforts were made to increase the transparency of the analytical process by explaining it step by step: the coding process of the interview

transcripts, the developed themes, summaries of analytical matrices and the derived conclusions of the theoretical framework. Therewith, it was attempted to provide a clear chain of evidence. Additionally, using grounded theory and case study research as triangulated analytical research strategies also strengthens internal validity. The analytic methods of pattern matching and explanation building are used with highest possible rigour. This also means that attempts were made to rule out rival explanations. Furthermore, the influencing factor of evidential properties needs to be considered when thinking about internal validity (Buchanan and Bryman, 2007). For a researcher there are different audiences with different claims and expectations. In this qualitative research project the researcher attempted to meet the academic side by developing new knowledge and theoretical insights. Further attempts were made to meet the managerial anticipations of practical recommendations as well. The interview partners received a summary of the findings and recommendations in German as for some interview participants the language obstacle would have been too high if they were presented in English only.

Another issue of internal validity that need to be addressed at this point is the concern of possible cognitive biases that could have affected the interview process. Interview partners could have suffered from an attentional bias (Bar-Haim et al., 2007) and therefore report their experience in relation to one specific event or situation that is prevalent in the company at the time of the interview. That means they could have focused too much on the current situation and then presented a less differentiated picture of the organisational reality. It was tried to rule out this bias by asking the interviewees whether there are or were other possibilities as well. With regard to the entrepreneurial function as subject under study this specifically refers to the contributors to entrepreneurial activity in the company. In a few cases it happened that after asking the question about other contributors the interviewees found that there is more to report from innovation projects in the last years. These additional information helped not only to rule out the attentional bias but also creates a more complete picture on who actually contributes to the entrepreneurial function in the each company.

In addition to that, the possible confirmation bias of the investigator has to be discussed as well (Nickerson, 1998). After a number of interviews were conducted and analysed the researcher went back to the field study in order to do more interviews. In this phase of research it was important to investigate the following case studies with the same neutrality and openness as at the beginning of the research. Otherwise the researcher

would have searched for, interpreted and focused on information in a way that only confirms the already established preconceptions from previous analysis (Nickerson, 1998). The researcher was well aware of this confirmation bias and tried to rule out this issue of internal validity by actively searching for other possible explanations than those that were established in the previous interviews and analyse these interviews with highest possible analytical neutrality.

External validity:

Fourthly, the degree to which findings can be generalised across social settings, also known as external validity (Bryman, 2012, Easterby-Smith et al., 2012) needs to be discussed. Easterby-Smith et al. (2012) pointed out that from a constructivist point of view it is important to include a sufficient number of perspectives in the investigation and to clarify if the study gains access to the experiences of those in the research setting. The relatively small sample of 24 case studies limits the basic possibilities of generalisation. With 97 in-depths interviews attempts were made to get as many perspectives and original experiences as possible. The replication logic in the multiple-case study also helps to define the domain to which the study's findings can be generalised (Yin, 2007). A compromise that had to be made according to generalisability also has the advantage that the in-depth study of the phenomenon indicates a higher precision in control and measurement of the behaviours interest and that the according context can be analysed in greater depth as well.

3.9 Strengths and limitations

The quality criteria of reliability and validity were discussed. This subsection tries to outline the consequent strengths and limitations of the investigation. The three conflicting desiderata, as McGrath (1982) outlined them, point out clearly that it is impossible to reach for generalisability, precision and realism at the same time. It is much more a question of choosing the lesser of two evils (McGrath, 1982). He further points out the importance of facing these dilemmas squarely and realising which of the dilemmas need to be lived with (McGrath, 1982). This was also part of chapter 3.8 when different quality criteria were discussed. In this light the strengths and limitations will be discussed subsequently.

3.9.1 *Strengths*

Realism is one of the biggest strengths of this research investigation. The interviews were conducted with people who are actually involved in the entrepreneurial function and therefore can provide a realistic point of view. Even if there was no attempt to reach for quantitative assertions, the relatively high number of in-depths interviews can be seen as strength of the investigation. Ninety-seven perspectives of the phenomenon could be taken into consideration as primary data and offer a wide range of insights. The original conversation and understanding of the situation allows the research to ensure a high level of congruence between concepts and observations (Bryman, 2012), which mirrors high internal validity. Furthermore, the broad range of branches and industries of companies represents a deep picture of the phenomenon as realistically as possible.

3.9.2 *Limitations*

In this research the dilemmas that need to be acknowledged are limited precision and the lack of generalisability (McGrath, 1982). Even if the researcher is well aware of the dilemmas, it is important to point out the implicit limitations. Furthermore, besides the inevitable bias of the investigator and the general semantic uncertainties of interviews, a compromise had to be reached between the number of companies, the number of aspects, and the depth of the studies. Time constraints inevitably affect the depth of the study because the collection and analysis of qualitative data is a highly labour intensive operation (Miles, 1979). Another potential obstacle of this qualitative approach is the relatively limited quantity of the samples. Even if it is relatively high for a qualitative interview-based investigation, it still shows a limited sample of the whole population of companies. Therefore, the case studies will represent at least an exemplary collection of experiences. However, the focus of this study is on theory building rather than testing it. For that reason theoretical sampling is appropriate (Eisenhardt and Graebner, 2007), and not random or stratified sampling as in quantitative studies. The aim of this research was to collect data from as many companies as possible, in order to provide convincing interpretation opportunities.

However, this research does not claim to be exhaustive. Instead this study generates further research questions that will be interesting to investigate in order to gain more valuable insights into the theory and practice of the entrepreneurial function.

3.10 Summary and outlook

This chapter on methodology outlined the applied theory of how this investigation was carried out. At the beginning the philosophical point of view was explained as the light in which this research is undertaken. After that, the inductive research approach of the explorative investigation was described. Subsequently, the research strategy of the qualitative study with the use of grounded theory and case study research was outlined. Furthermore, the way of data collection, analysis and verification were explained in detail in order to reach for highest transparency within the theoretical framework development process. Finally, reliability and validity were discussed as quality criteria which led to the final review of strengths and limitations of the current study. The following chapters about the results of the study will outline how the research design was used to answer the research questions.

Chapter 4. Findings In Small Companies

4.1 Introduction

The following chapters report the findings of the current research project. Conducting interview research generates a rich set of qualitative data and therefore represents a relative precise picture of the corporate worlds under study. It is the aim of this study to contribute to the knowledge about the entrepreneurial function when companies of different sizes are taken into account. That is why 97 interviews were conducted in six small, seven mid-sized and eleven large companies.

As described in the previous chapter the case study analysis follows a twofold approach. On the one hand the coding analysis of the interview transcripts brought up the following seven main themes: (1) corporate functions, (2) organisational hierarchies, (3) activities of entrepreneurs, (4), personal predisposition and learning, (5) intensities and concentration of entrepreneurial activity, (6) motivation of entrepreneurs, and (7) personality, characteristics, and capabilities of entrepreneurs. These themes help to describe the entrepreneurial function on a very detailed level. In order to follow this structure the findings of each company size category follow these main themes. On the other hand, the dynamics of the entrepreneurial function were analysed with the help of the detailed case reports and the according case interpretation of the researcher.

In general this research project is interested in explaining the evolution of the entrepreneurial function from smaller to larger companies. For that reason chapter 4-6 firstly show how entrepreneurial activity is happening in each company size category (see chapter 4 for small companies, chapter 5 for mid-sized companies, and chapter 6 for large companies). These chapters serve as detailed descriptive evidence of the entrepreneurial function. In addition to that, the interviews brought up a number of influencing factors on the entrepreneurial function that appear to be relevant for the development of the entrepreneurial function. These influencing factors are presented in chapter 7, where possible rival explanations are discussed briefly as well.

The following subsections (4.2 until 4.8) present the detailed seven main themes as results of the cross-case pattern matching based on the interview coding procedure for small companies. After that the dynamics of the entrepreneurial function and different entrepreneurial roles are identified (see subsection 4.9 and 4.10).

4.2 Corporate functions

The first main theme outlines the findings about the entrepreneurial function according to the different corporate functions of the company. This question refers to the division of labour and investigates entrepreneurial activity across corporate functions such as production, sales and marketing, procurement, finance and controlling, human resources, as well as research and development.

As assumed the interviews show that in small companies with up to 50 employees the corporate functions as described above do not seem to be that clear-cut. In three companies (CS-01, CS-03, CS-05) the interview partner explained that people are doing more than one job at the same time. Thus, there are overlapping responsibilities when it comes to the different corporate functions (P-01)³. For instance, one person might be involved in product development, finances and sales at the same time. The following quotation shows that the differentiation in separate functions does not seem to be that important to the entrepreneurial activity in small companies.

*‘Lösungen bringt bei uns immer der, der es am besten kann.
Da gibt es kein Bereichsdenken.’*

(Translation:⁴ Solutions are generated by the person with the appropriate skills. There is no departmentalism.)

(Managing director, CS-01 / I-14)

Further, in case study CS-03 the managing director stated that he himself manages all important functions from procurement to strategy (I-39). In a company with 21 employees he can still manage this on his own despite the bigger workload. He also explained that it will be necessary to build a second management level in case the company grows and then the division of labour according to corporate functions will be taken into account. Small companies like this simply cannot afford to have a clear differentiation into corporate functions as explained above (P-01).

³ (P-01) means proposition P-01 and refers to the accordingly numbered propositions in Appendix C, D and E. The tables in the appendices show the exact references to the case studies and the according interviews with regard to the company size category (Appendix C for small companies, Appendix D for mid-sized companies and Appendix E for large companies).

⁴All German quotations of the interviewees were translated in English by the author.

However, in three of the six case studies there is evidence that certain tasks seem to play an important role for the entrepreneurial function. A directing manager of a manufacturing company in the sheet metal working industry (CS-04) stated that innovative ideas come from people with customer contact which would mostly refer to the functions of sales and marketing (P-07a).

*‘Ideen können nur die haben, die Kontakt zum Kunden haben.
Die Innovationstreiber sitzen bei uns also in der Büromannschaft.’*

(Translation: Only people with customer contact can produce ideas.
Therefore, the drivers of innovation are located in our office staff.)

(Managing director, CS-04 / I-33)

It has to be explained that in case study CS-04 the office crew are the people who have direct customer contact because they fulfil tasks such as acquisition, price and contract negotiations, as well as customer service and support.

In addition, technical experts seem to play an important role as well (P-09a). Interview partner of three case studies (CS-01, CS-03, CS-06) explained that technical experts are very important for the entrepreneurial activity because they often come up with new ideas and solutions. These interview results refer to the corporate function of technological development and production.

4.3 Organisational hierarchies

The second main theme concerns the findings about entrepreneurial activity when different organisational hierarchies are involved. The question refers to whether people from all organisational levels are involved in entrepreneurial activities or if people on management or team leader level have a special role.

In all six small company case studies (CS-01, CS-02, CS-03, CS-04, CS-05, CS-06) it appears that managing directors and people from management or team leader level are involved in entrepreneurial activity (P-02a). As the following two exemplary quotations indicate, it seems that there is a relation between entrepreneurial activity and hierarchical levels in small organisations.

‘Bei uns ist das auf jeden Fall die Geschäftsführung – also mein Partner und ich. Wir sind die tragenden Köpfe und Treiber.’

(Translation: ‘In our company it is my partner and me, the two directing managers, who are the drivers of innovation.’)

(Managing director, CS-02 / I-27)

‘Innovationsdenken ist eingeschränkt. Das ist nur in der Führungsmannschaft vorhanden.’

(Translation: ‘Innovative thinking is limited and only existent on management level.’)

(Managing director, CS-04 / I-33)

Interview partner of all small company case studies supported this proposition (CS-01 / I-16, CS-03 / I-39, CS-05/ I-30, CS-06 / I-29). The interviews show that within the smallest three companies (CS-01, CS-02, CS-03) with only 14, 15 and 21 employees in the whole company this finding is not surprising. The managing director of a company in the metal processing industry with 21 employees explained that he and his wife are the managing directors of the company and are responsible for all entrepreneurial activity and decisions (CS-03 / I-39).

In the other three investigated small companies (CS-04, CS-05, CS-06) with 30, 41 and 49 people, the focus throughout the whole company shifts slightly from one or two people to a management team or also the team leader level that is involved in entrepreneurial activity.

In case study CS-06, another metal processing company with 49 employees, the managing director emphasised that his head technician also has ‘good ideas when problems occur’ (CS-06 / I-29). In this case the researcher utilised the analytic technique of interpretive coding. Even though the managing director seems to be clearly involved in entrepreneurial activities, the master technician can be neglected at this point because of the difference between having a good idea when a problem comes up and true entrepreneurial discovery and exploitation of new ideas. Anyhow, in this case entrepreneurial activity also seems to take place on management level.

4.4 Activities of entrepreneurs

The third theme is concerned with the activities of entrepreneurial active people themselves. During the interview the participants were asked what exactly it is entrepreneurs are doing within their job and corporate environment. This question refers to the broader area of the entrepreneurial function. It is intended to find out who is involved in entrepreneurial activity and whether different corporate functions are affected. The real entrepreneurial activity of the investigated case studies therefore gives valuable insights for the entrepreneurial function. In order to highlight what the interviewees considered to be most important, the findings are presented in descending order of their occurrence in the interviews.

The interviews revealed certain main activities that were conducted by entrepreneurially active people in the small company case studies. These main activities could be identified with the help of the two coding cycles during the analysis of the interview data. The following eight main activities are market orientation, decisions, responsibility, risks, dealing with people, dealing with customers, taking action, failure without accusation, and cross-functional collaboration. A detailed outline of these activities is presented below.

a) *Market orientation:*

The first main entrepreneurial activity involves the customers of the company. In four case studies (CS-01, CS-02, CS-03, CS-04) it was pointed out that an entrepreneur monitors the market, deals with existing customers and practices customer acquisition (P-24a). The managing director of CS-02, for example, expressed it as follows.

*„Unternehmerisches Denken und Handeln hat viel mit agieren zu tun.
Man muss den Kunden im Blick haben und Marktgespür haben.“*

(Translation: ‘Entrepreneurial activity has something to do with taking action, having an eye for customers and intuition for the market.’)

(Managing director, CS-02 / I-27)

This exemplary quote shows how important an orientation towards customers and the whole market is. It seems to be obvious that the contact to customers and, therefore,

also to the market plays an important role for the entrepreneurial function. This activity is closely linked to the corporate function of sales and marketing.

b) Decisions:

The second main entrepreneurial activity is concerned with decisions. In three case studies decisions were emphasised (CS-01, CS-02, CS-03) which means that an entrepreneur simply makes decisions and determines upon imminent issues within the corporate setting (P-12a). It was further explained in two case studies (CS-02, CS-03) that it is important to come to decisions instead of procrastinating something (P-13a).

‘Für einen Unternehmer ist es wichtig strategische Entscheidungen zu treffen. Das ist wichtiger als das Fachwissen selbst.’

(Translation: ‘For an entrepreneur it is important to make strategic decisions. That is more important than expert knowledge.’)

(Head of Research and Development, C-01 / I-16)

This quote of a head of research and development shows that the ability of making decisions is considered to be even more important than expert knowledge. The activity of making decisions therefore seems to be of significant entrepreneurial nature.

c) Responsibility:

The third identified main entrepreneurial activity refers to responsibility. Two case studies (CS-03, CS-04) underline how important it is that entrepreneurs take responsibility and make decisions (P-14a). As the following quotation shows, it appears that decision-making and taking over responsibility is interconnected in the investigated case studies.

‘Der Unternehmer muss die Verantwortung tragen und es auch ausbaden, falls sich herausstellt, dass es eine schlechte Entscheidung war.’

(Translation: ‘The entrepreneur has to take over responsibility and also has to take the blame if a decision turns out to be bad.’)

(Managing director, CS-03 / I-39)

Furthermore, a managing director (CS-04) who previously worked for a large company before he took over his father's company with 30 employees, described the responsibility he faces as someone who is actively involved in entrepreneurial activity as follows.

‘Die Verantwortung eines Unternehmers in einem kleinen Unternehmen ist von einer ganz anderen Qualität. In einem Konzern ist immer einer oben drüber, der den Kopf hält. Ich finde, da trifft man Entscheidungen ganz anders.’

(Translation: ‘The responsibility of an entrepreneur in a small company is of another quality. Within an organisational system of a large company you always have someone above you who takes the blame. I think within such a system you make decisions differently.’)

(Managing director, CS-04 / I-33)

It appears that it matters if you take over responsibility for decisions directly or only indirectly due to a superior. The managing director in CS-04 (I-33) also stated that an increasing workload with a lot of projects can be compensated by simply working more hours. An increasing responsibility as an entrepreneur in a small company cannot be compensated like that and is therefore of a different quality. Questions about capacity utilization, maintaining jobs and creating new ones are of another quality (CS-04 / I-33). In this context it seems that taking over responsibility means to bear the consequences of decisions no matter if they turn out to be good or bad (P-15a).

d) Risks:

The fourth main entrepreneurial activity is also related to the issue of making decisions and taking over responsibility. It is the willingness to take risks and to believe in it (P-16a) which was highlighted in two case studies (CS-02; CS-05). In the process of decision-making the entrepreneur seems to be facing two sides: the risk on the one hand and the inherent chance on the other. For an entrepreneur it is important to calculate risks but also to see more chances than risks (P-17a). Hence, an entrepreneur is willing to take risks but also is aware of the inner possibilities. Making decisions, taking over responsibilities and the willingness to take risks seem to be closely linked to each other. Thus, the case studies indicate that someone who is involved in entrepreneurial activity sometimes bravely follows a gut feeling and intuition to a certain degree (CS-02 / I-27).

e) Dealing with people:

The fifth main entrepreneurial activity concerns the way how people deal with each other. In two case studies (CS-02; CS-06) the way you deal with employees and the way you budget workload were emphasised (P-19a). These activities mostly refer to the corporate function of human resource management.

f) Taking action:

The sixth main entrepreneurial activity refers to simply taking action. In two case studies (CS-02; CS-05) the interview partners stated that an entrepreneurial active person does not seem to just fulfil tasks.

‘Als Unternehmer unternehme ich etwas. Stillstand ist tödlich.’

(Translation: ‘Entrepreneurial activity means taking action. Stagnancy kills you.’)

(Managing director, CS-02 / I-27)

A team leader (CS-05 / I-30) further stated that entrepreneurial activity means to constantly intervene, challenge and exchange views with superiors about the current situation. These quotes underline the active role of an entrepreneurial person who is not satisfied and therefore constantly seems to question and challenge the status quo within a small company (P-28a).

g) Creating a culture without accusation:

The seventh main entrepreneurial activity is related to the organisational culture. In one case study (CS-01; I-14, I-16) both interview partner mentioned that it is important to create a culture without accusation when it comes to entrepreneurial activity (P-38a). As outlined earlier, entrepreneurial activity seems to be related to taking responsibility and risks. It also seems to be obvious that not all entrepreneurial decisions turn out to be good. In this sense the interview results can be understood to support a forgiving culture, especially when it comes to the entrepreneurial activities. Coming up with new ideas and trying new things requires energy and courage from people. In case these ideas turn out to be a flop, it seems to be important not to accuse people as this would create a culture of fear and not a culture where new ideas are welcome.

h) Cross-functional collaboration:

The eighth and last main entrepreneurial activity within the small company case studies concerns the cross-functional collaboration. In one case study (CS-05 / I-30) the cross-functional collaboration at the team leader level was emphasised especially during team leader meetings (P-41a). In this case study (CS-05) different team leaders have inter-functional interfaces that seem to be crucial for the entrepreneurial function of the company.

4.5 Personal predisposition and learning

The fourth theme of this research project is concerned with the question whether a person has a predisposition for entrepreneurial activity or if it is something a person can learn. In the context of organisational learning it is interesting to find out whether a person can learn to be entrepreneurial active or if someone just ‘has it’ or not. The personal predisposition to get engaged in entrepreneurial activity is hereinafter referred to as ‘entrepreneurial spirit’.

In four case studies (CS-01, CS-03, CS-04, CS-06) the interviewees stated that entrepreneurial spirit is something you rather have as a person (P-56a). A managing director (CS-03 / I-39), for instance, compared it to a mind-set that a person cannot learn but simply has to have. These findings indicate that entrepreneurial active people seem to have a personal predisposition that allows them to act as an entrepreneur within their corporate setting.

One managing director (CS-06 / I-29) also stated that this mind-set is only learnable to a very limited extend. The following statement corroborates this idea of a learnable entrepreneurial spirit (P-58a).

‘Ich denke, das ist zum Teil abhängig von der Person und zum Teil erlernbar. Aber der größere Teil ist erlernbar beispielsweise durch Fortbildungen.’

(Translation: ‘I think one part depends on the personality and the other part is learnable. But I think the part of learning is bigger. You can learn this through additional training.’)

(Managing director, CS-04, I-33)

However, most of the interview partners clearly assume that there has to be some kind of predefined disposition that is related to the personality of an entrepreneur. Therefore, it can be presumed that within the small company case studies entrepreneurial spirit is an inherent characteristic of a personality.

4.6 Intensities and concentration of entrepreneurial activity

The fifth theme of this investigation is concerned with the question of whether there are different intensities of entrepreneurial activity. The question further relates to the notion that these intensities are related to the personal affinity to guidelines or freedom in day-to-day business. With this question it was intended to shed some light on the conditions of entrepreneurial activities. It could be possible that some people are entrepreneurial active but in different intensities and under special circumstances. Thus, it seems to be interesting to find out whether these people have certain tendencies in their daily work and their entrepreneurial activities that relate to their personal affinities. It is anticipated that people with an affinity to guidelines and rules organize their daily work in a different way than people with the affinity to freedom. It was now tried to find out whether or not this has an influence on the entrepreneurial activities of people.

In all six small company case studies (CS-01 / I-14, CS-02 / I-27, CS-03 / I-39, CS-04 / I-33, CS-05 / I-30, CS-06 / I-29) interview partners confirmed that entrepreneurial activity happens in different intensities (P-77a). One managing director further stated that the more experience a person has the more it is possible to grow in entrepreneurial activities (CS-06 / I-29). These results show that some people seem to be more involved in entrepreneurial activities than others in small companies.

Personal affinity:

In four of the case studies (CS-02, CS-03, CS-05, CS-06) it was described that personal affinity matters because people with an affinity to freedom are more entrepreneurial active than those with an affinity to guidelines and rules (P-79a). The interview partner compared the personal affinity to guidelines with a restrictive corset (CS-02 / I-27), with working by the book (CS-05 / I-30), and with a predetermined scope of action (CS-06 / I-29). The personal affinity to freedom, on the other hand, was described as the ability to think outside the box and exploit these liberties to be entrepreneurial active

(CS-03 / I-39). A team leader in CS-05 further mentioned that freedom implies risks. Again, this refers to the entrepreneurial activities outlined earlier of taking over responsibility and the willingness to take risks. It appears that the more the personal affinity tends towards freedom, the more entrepreneurial activity is carried out (P-79a).

Further relations:

This section presents three further identified relations of the different intensities of entrepreneurial activities. Firstly, in two case studies (CS-03, CS-04) the interview partner described that the intensity of entrepreneurial activity is related to the willingness to take responsibility and make financial decisions as well (P-81a). Thus, taking responsibility, making decisions and the intensity of entrepreneurial activity seem to be closely linked to each other.

Secondly, the team leader in case study CS-05 (I-30) stated that the intensity of entrepreneurial activity is related to the personal job satisfaction because the degree of job satisfaction has an influence on the personal commitment to work (P-82a). It could therefore be possible that the more someone is satisfied with and committed to his or her work, the more entrepreneurial activity is carried out.

Thirdly, the managing director in case study CS-04 explained that these intensities can refer to the level of education (I-33). This would mean that the more educated a person is, the more entrepreneurial activity can be achieved. However, he conceded that there are also well educated academics who have a personal tendency towards guidelines. Therefore, it seems that the argument of higher education is not directly related to the intensity of entrepreneurial activities (P-83a).

4.7 Motivation of entrepreneurs

The sixth theme of this research addresses the issue of motivation. The interview partners were asked what the motivation of people is who are involved in entrepreneurial activity. With this question it was intended to find out more about the entrepreneurial person and therefore about the background conditions of the entrepreneurial function. Seven main factors of motivation could be identified from the case study interviews that are outlined subsequently.

a. Responsibility:

In five of the six small company case studies (CS-01, CS-02, CS-04, CS-05, CS-06) responsibility was emphasised as motivation factor. Three cases of them (CS-01 / I-14, CS-02 / I-27, CS-04 / I-33) show that personal responsibility and the joy in taking over responsibilities is motivating entrepreneurial active people (P-42a).

Furthermore, in three case studies (CS-01, CS-04, CS-05) the aspect of responsibility was associated with one's personal philosophy of life and the personal attitude towards work. One managing director stated that entrepreneurial motivation is also a question of personal philosophy and attitude of life that is reflected at work (I-14). Another managing director called it the personal commitment to work (I-33). These findings indicate that personal responsibility as motivation factor for entrepreneurial activity seems to be related to one's personal attitude and philosophy of life (P-43a).

Personal responsibility as motivation factor for entrepreneurial activity seems to have many different facets. Two further facets were described as single statements. One team leader (CS-05 / I-30), for instance, explained that entrepreneurial motivation comes from the will to help in the context of feeling responsible for certain issues in the corporate setting (P-44a). Another managing director (CS-06) described the personal responsibility as motivation for entrepreneurial activity within the setting of a traditional family business. The motivation to keep up the family tradition seems to play an important role for entrepreneurial activity (P-45a). These quotes show that responsibility in different forms seems to be an important motivation factor for entrepreneurial activity.

b. Acknowledgment:

In one case study (CS-03) the managing director related motivation for entrepreneurial activity to acknowledgement as the following statement shows.

‘Menschen wollen erfolgreich sein.[...]Dabei geht es auch um soziale Anerkennung. Aber es geht mir dabei nicht um Macht. Es geht vielmehr um die natürliche Autorität, weil die Leute einen für das anerkennen, was man kann.‘

(Translation: ‘People want to be successful. [...] And they want to be recognised socially and also for their work success and personal

achievements. This is not about power. It's about being recognised as natural authority because people acknowledge you for what you do.')

(Managing director, CS-03 / I-39)

This statement indicates that entrepreneurial activity can be motivated by the personal interest of being acknowledged in different ways. It could be the motivation of being socially recognised within their social job network of colleagues, superiors and employees (P-46a). The managing director further clarified that it is not a question of how someone exercises power over other people. However, he still connected this motivation with leadership since it is not the power but the natural authority of a person that seems to be important. Thus, it seems that when someone is acknowledged as natural authority this motivates entrepreneurial activity (P-47a).

c. Vitality:

Three case studies (CS-01, CS-04, CS-05) confirmed that the motivation for entrepreneurial activity is related to one's personal vitality and energy (P-48a). A managing director described it as personal energy to take a hurdle (CS-01 / I-14). Another managing director explained it as pressure and energy that comes from within a person and he stated that there is no motivation for entrepreneurial activity that comes from the outside (CS-03 / I-39). A similar statement about this kind of self-motivated thinking about entrepreneurial activity was supported by a team leader of one case study (CS-05 / I-30).

Vitality and energy as entrepreneurial motivation seem to be related to three further aspects. In four case studies (CS-01 / I-14 and I-16, CS-02 / I-27, CS-03 / I-39, CS-06 / I-29), for example, it was emphasised that people are motivated to engage in entrepreneurial activity if they enjoy their work (P-49a). In addition, two directing managers (CS-02, CS-04) described their motivation for entrepreneurial activity with the feeling of being able to change something and being challenged with many different problems (P-50a). Lastly, one team leader (CS-05) stated that entrepreneurial motivation has something to do with one's passion (P-51a).

These statements show that someone who is involved in entrepreneurial activity seems to be motivated to do so by personal vitality, energy, self-motivation, pleasures, challenges and passion that only seem to come from within a person.

d. Vision and individual fulfilment:

In two case studies (CS-01 / I-14, CS-02 / I-27) it was pointed out that motivation for entrepreneurial activity comes from a personal vision and a goal someone aims for (P-52a). One managing director compared it by using a picture.

‘Das ist wie mit einem weit entfernten Bild, das man aber im Blick haben muss. Dabei geht es um den Weg dorthin. Man braucht diese Vision.’

(Translation: ‘This is like a far away picture that you need to keep an eye on. It’s about the way to get there. You need this kind of vision.’)

(Managing director, CS-01 / I-14)

This assertion suggests that entrepreneurial activity appears to be motivated by some sort of goal a person wants to reach. A team leader (CS-05) supported this argument and emphasised that entrepreneurial motivation seems to be related to the personal fulfilment someone can aim for at work (P-53a).

e. Trust and believe:

In two case studies (CS-01 / I-14 and I-16, CS-02 / I-27) the interviewees connected motivation for entrepreneurial activity with trust and believe in people and their activities. The head of research and development (CS-01) emphasised the freedom he has at work to guide new technologies. This way his company shows respect and trust in his abilities which motivates to engage in entrepreneurial activity (I-16). These arguments show that trust and believe in people and in what they can reach seems to motivate people to engage in entrepreneurial activity (P-54a).

f. Incentives:

Motivation for entrepreneurial activity seems to come from incentives as well. Three case studies (CS-03 / I-39, CS-04 / I-33, CS-05 / I-29) evaluated financial rewards and incentives to be important for entrepreneurial activity but not crucial. Two of the managing director described the need of money to be adequate and as something of interest in the context of motivation (I-39, I-29). In summary, it appears that entrepreneurial activity can also be motivated by financial rewards although it does not

seem to be the prime motivation factor for entrepreneurial activity (P-55a). In fact, it seems to be more of a background condition.

4.8 Personality, characteristics and capabilities of entrepreneurs

The seventh theme of this research project is concerned with the role of personality, characteristics, and capabilities of entrepreneurial active people. The basic research question of who is involved in entrepreneurial activity may also refer to questions of certain characteristics or capabilities. It is interesting to find out whether certain individual personalities, characteristics or capabilities play a special enabling role. Six aspects could be revealed from the interviews that were evaluated to be important for the entrepreneurial activity.

a. Assertiveness:

In the context of what a person needs to be an entrepreneur different aspects of personality and characteristics were mentioned by the interviewees. The characteristic of assertiveness came up in three case studies (CS-02 / I-27, CS-03 / I-39, CS-06 / I-29). The managing director of one case study (CS-03) emphasised the importance of assertiveness especially when it comes to difficult and inconvenient issues (I-39). A strong personal will and the capability to assert certain things are thus indicated to be distinctive of an entrepreneur (P-59a).

b. Courage:

The next aspect resulting from the interviews is courage. In two case studies (CS-02, CS-03) the managing directors pointed out that an entrepreneur needs courage (P-60a). The managing director of one case study (CS-03 / I-39) explained it as follows.

‘Man braucht auch ein gewisses Maß an Mut etwas anzupacken ohne genau zu wissen was raus kommt.’

(Translation: ‘You need a certain amount of courage to tackle things without knowing how it will turn out.’)

(Managing director, CS-03 / I-39)

That means, an entrepreneur seems to have this kind of courage in order to engage in new areas and new ideas that are uncertain.

c. Mindset and upbringing:

Another aspect of an entrepreneurial personality seems to be the individual mindset and upbringing of a person. In three case studies (CS-02 / I-27, CS-03 / I-39, CS-06 / I-29) the interviewees related entrepreneurial spirit with a person's mindset and general attitude (P-61a). One managing director (CS-02 / I-27) further stated that this is also related to the upbringing and education of a person (P-62a). These arguments indicate that the general attitude and the upbringing of a person can be some kind of precondition for entrepreneurial activity.

d. Self-confidence and robustness:

In two case studies (CS-02 / I-27, CS-03 / I-39) the aspect of confidence emerged. The managing directors evaluated self-confidence and charisma to be important for an entrepreneurial personality (P-63a). In case study CS-03 (I-39) it was further mentioned that an entrepreneur needs a robust character (P-64a). This refers to an entrepreneur's ability to deal with different kinds of difficulties and drawbacks.

e. Passion:

In one case study (CS-05) the interviewed team leader emphasised the aspect of job-related passion as the following quotation shows.

‘Ich denke das ist jobabhängig. Jeder hat eine Leidenschaft. Wenn Job und Leidenschaft zusammentreffen, dann wird man zum Unternehmergeist.’

(Translation: ‘I think this depends on the job you do. Everyone has a passion. When job and passion coincide then you become an entrepreneur.’)

(Team leader, CS-05 / I-30)

This statement relates corporate entrepreneurship with job-related passion. It indicates that a person who is passionate about a job or a task can become entrepreneurial active (P-65a).

f. Reflection:

The managing director of case study CS-02 brought up the aspect of reflection. He described the need for personal reflection and how important it is to know the own limitations as an entrepreneur (I-27). It seems that a person needs to reflect on the own capabilities, goals and limitations in order to engage in entrepreneurial activities (P-66a).

g. Environment and corporate culture:

In three case studies (CS-02, CS-03, CS-04) it was mentioned that it is important for entrepreneurial activity to create an open culture where people have the feeling that their ideas are welcome (P-70a). In this context one managing director (CS-01 / I-14) further emphasised trust within the team to be important (P-71a).

It is clear that the question of personality, characteristics and capabilities is a very broad area. However, the emerged aspects appear to matter in order to be an entrepreneur within a corporate setting.

In summary, the detailed seven themes about entrepreneurial activity, outlined in the previous subsections 4.2 to 4.8, provide a very broad picture of what seems to be important to the entrepreneurial function in small companies. However, the cross-case pattern matching based on the coding procedure alone is not enough to explain how entrepreneurial activity is happening on case study level. Therefore, in the following subsection 4.9 the dynamics of entrepreneurial activities are analysed case-by-case.

4.9 Case reports of entrepreneurial dynamics

This subsection focuses on the companies of the case studies as unit of analysis. It is tried to explain the dynamics of entrepreneurial activity with the identification of certain entrepreneurial roles within the case studies, their connection and collaboration. In order to provide a better understanding for each case study the organisational structure, general responsibilities and interview partner are outlined before.⁵

⁵ Detailed case reports for all small companies can be found in the Appendix F.

4.9.1 Case study CS-01

Case Study	Industry	Employees	Sales volume
CS-01	Surface metrology, 3D measurement systems	14	n.a.

Data collection:

The analysis of case study CS-01 is based on the collection of primary and secondary data. First, the managing director and one employee from research and development were interviewed in person. The subsequently prepared interview transcripts serve as primary data. Further information about the company could be analysed by reviewing the company website, a brochure about the company's current main products and services, and the company profile as secondary data.

Company background information:

Case study CS-01 concerns a company in the surface metrology industry that provides non-contact 3D measurement systems for industrial and scientific applications. These 3D measurement systems mainly consist of a high resolution optical sensor, either laser-based or with a white light source, a precise x/y scanning stage and the applicable software. They are used in microelectronics and other precision industries such as measurements of waviness, contours, roughness, step heights, and solar cells.

The company was founded in 1992 in Munich and expanded to the USA in 2003. At the very beginning three people started with pure distribution tasks. After a few years they started with the software development. Today, the company has fourteen employees and is completely equity financed. The software development for applications of the devices is the core element of the company. The devices themselves are not produced in-house. Therefore, it primarily can be described as a know-how company. Mostly, the business is based on direct customer requests. There is only very little general research and development in the company that takes place without a relation to direct customer orders. However, the management consults about an expansion of the firm by generating more sales volume in other markets or incorporating the production of the scanning devices and sensors.

Organisational structure, responsibilities and interview partner:

The company in case study CS-01 has fourteen employees. There are two managing directors, four people working in the software development, one employee in construction and computer-aided design (CAD), three people in production, services and electronics, two people in applications, and two people in administration. The two managing directors share the daily business of management tasks equally and are responsible for the strategic direction, decision making and the recruitment of new talents for the company. There is no second management level and therefore the rest of the employees work as a team with partly overlapping responsibilities. For the current investigation two interviews were conducted in person with one managing director and one researcher and developer of software technologies.

Dynamics of entrepreneurial activity:

This case study concerns a small firm with no clear cut corporate functions. However, it appears that there are two different roles that contribute to the entrepreneurial function. On the one hand the two managing directors seem to engage in entrepreneurial activities such as decision making, encouraging leadership, risk bearing and visioning. They appear to play the role of the decision maker and risk taker but without creating new technological innovation ideas. The managing directors have a broad overview about the financial situation, the economic development on the market, and they have a vision for the company in the sense of where to position their products on the market in the long run.

On the other hand, the team of developers also seems to be important when it comes to new technological ideas and developments. The team of developers have the capability to combine knowledge and experience from different technological fields. That means they work at the interface of high-tech surface measurement systems, software technologies and applied physics. The interconnection of the knowledge fields appears to create new technological possibilities and solutions. Therefore it can be stated that this team contributes to the entrepreneurial function as well but only in the sense of idea generation. The two managing directors make the final decision whether a new technological idea fits into the product and market portfolio of the company profile and will be further developed by investing time and financial resources in it.

The rest of the employees and departments appear to contribute more generally in this process by supporting the further development of new technological ideas. This

contribution, however, is more of processing and supporting character but not directly involved in generating or driving entrepreneurial activity.

It therefore can be stated, that in this case study CS-01 the entrepreneurial function appears to split up across the two described roles of the idea generators and the decision makers and risk takers. An effectual interaction between these two roles requires openness, liberties and trust. It seems that in this case study these two roles build an entrepreneurial network and the driving force of innovation.

The interpretation of the case study has boundaries, especially in the distinction between the phenomenon of the entrepreneurial function and its context in the current company situation. In that regard it has to be mentioned that the company mostly acts upon customer orders and requirements. As a typical knowledge firm the company sells technological solutions but these solutions are mostly based on a previously existent customer problem and requirement. This refers to the part of idea generation. The creation of a technological solution to an existing problem is understood as entrepreneurial activity as well even though the problem or customer order is the first stimulus for the idea generation. The company further engages in research and development projects in collaboration with science projects of universities without specific predefined problem definitions. That background of idea generation in this case study refers to the point where phenomenon and context seem to be interrelated.

4.9.2 Case study CS-02

Case Study	Industry	Employees	Sales volume
CS-02	Product complexity management	15	n.a.

Data collection:

In case study CS-02 primary and secondary data was analysed. An interview with the managing director of the company builds the main primary data source. In addition to that, the company website information as well as the organisational structure and profile were analysed as secondary data.

Company background information:

Case study CS-02 is about a software and consultancy company in the field of variety management specialised in the automotive industry. The in-house developed software tool for product variety and complexity management builds the main foundation for the evaluation of complexity drivers and scenario planning methods. The company was founded in 2004 by the two managing directors out of a student consulting project at their university.

Organisational structure, responsibilities and interview partner:

The company in case study CS-02 has 15 employees on a fulltime basis as well as freelance collaborators, interns, student employees and graduate students. The two founders and owners of the company share the function as managing directors. The employed developers are mostly responsible for the information technology of the software tool that needs to be customised for the respective customer projects. One interview was conducted in person with one of the managing directors and founder of the company.

Dynamics of entrepreneurial activity:

In case study CS-02 it seems that entrepreneurial activity is centralised in the leadership function and carried out by the two managing directors. Both of them appear to drive entrepreneurial ideas by using their expertise in the fields of product variety on the one hand and complexity management on the other hand. Furthermore, both seem to be intensively connected to the customers, their requirements and problems. The understanding of market trends and developments with a broad view for competitors and rival products seems to be an important entrepreneurial capability of the managing directors.

Apparently, due to the small size of the company there is no dilution or sharing of the entrepreneurial function. The rest of the employees of the company engage in processing tasks but not in entrepreneurial activity. The customisation of the product complexity tool requires enhanced software programming capabilities but is not of creative or inventive character. Therefore, these tasks do not directly contribute to the entrepreneurial function of the company but can be characterised as a supportive and processing function.

As a consequence, the entrepreneurial function seems to be centralised in the management team. First of all, the two managing directors seem to share the role of the decision maker and risk taker. Secondly, it can be stated that idea generation for innovative ideas also seems to be driven by the two managing directors. This refers to their direct customer contact and deep understanding of market needs and trends.

Furthermore, the centralisation of the entrepreneurial function has to be described with regard to the boundaries of this case study. The company's product portfolio and organisational structure is already designed to centralise responsibility for different corporate functional tasks, including sales and marketing, finance, human resources management, strategy, and research and development on management level. That means the current company context partly influences the result of the entrepreneurial function analysis as described above.

4.9.3 Case study CS-03

Case Study	Industry	Employees	Sales volume
CS-03	Metal processing	21	n.a.

Data collection:

The company in case study CS-03 offered primary and secondary data for analysis. First of all an interview with the managing director and owner of the company was conducted in person and the transcribed interview serves as main primary data. Furthermore, the company website and profile could be analysed as secondary data.

Company background information:

Case study CS-02 concerns a small company of the structural steelwork engineering industry. The business is specialised in the areas of glass and steel constructions, steelwork, fire control and protection and the processing of stainless steel. The company has a background as traditional family owned business that was founded in 1936. The current managing director took over in 1979 and changed the traditional metalworking shop into a structural steelwork engineering business with 21 employees. With the combination of different materials such as glass and steel, new business areas could be developed during the last years.

Organisational structure, responsibilities and interview partner:

The managing director and his wife both share the responsibility as management team. With 21 employees there is no further management level in the company. The company employs two main technicians, fifteen craftsmen, two apprentices, and two employees in administration. Corporate functional tasks such as human resource management, finance, purchasing and strategy are all in centralised responsibility of the two managing directors. With one of these managing directors the personal interview was conducted.

Dynamics of entrepreneurial activity:

In the company of case study CS-03 entrepreneurial activity seems to be centralised on management level. Only the two managing directors, a married couple, appear to be actively engaged in new idea generation and innovative thinking. However, in this entrepreneurial function the wife of the managing director seems to play a supportive role in administrative and procedural tasks, and as consulting partner in business development questions and decision making. The managing director himself appears to be the main idea generator and driver of entrepreneurial activities. Especially the task of imminent decision making appears to be important in this context. His combination of a broad market view and customer needs with technological knowledge seems to nurture his entrepreneurial capabilities and therefore also his role as idea generator.

The rest of the employees seem to prefer the work to rule. The two main technicians are described to generally have the capabilities to come up with new ideas but are not interested and motivated to use this potential for the company. Predefined guidelines of work procedures appear to create an appreciated culture of security for them.

In this case study the current company situation seems to centralise all responsibilities to the managing directors. This partly appears to have an influence on the entrepreneurial function as well because the managing director is seen as natural authority in the company and therefore people listen to his instructions.

4.9.4 Case study CS-04

Case Study	Industry	Employees	Sales volume
CS-04	Sheet metal working	30	n.a.

Data collection:

In case study CS-04 an interview with the managing director serves as primary data. The website with information about the history and the general profile of the company were included as secondary data.

Company background information:

The company in case study CS-04 is a family owned business in fifth generation. The origins of the firm go back to the foundation in 1885 as repair and assembling shop for farm machinery. After Second World War the company started producing stove pipes. This business area was further developed by producing air distribution ducts in 1970. In 2009 the current managing director took over business and widened the product portfolio to a wide range of sheet metal engineering with the help of a new train of machinery. Today, the company serves customers from industry, mechanical art as well as private customers.

Organisational structure, responsibilities and interview partners:

The company has 30 employees. The management of the firm is run by two managing directors, the son and wife of the previous owner. Further, there are five employees working in the engineering office and one employee who is responsible for administrative issues and accounting. The production of the firm has one production supervisor and one quality assurance representative. The remaining 20 employees work as welders, mechanics and metal workers. When it comes to decision making it can be stated that the two managing directors have the main responsibility. However, the mother is slowly retiring from business so that most of the company leadership tasks fall in the son's range of duty. The organisational structure of the firm shows that there is only one management level and no clear cut division of labour in traditional departments. The managing director deals with tasks of sales and marketing, finance, human resource management and production at the same time. The responsibility of the production supervisor and the quality assurance representative mainly concern the direct

production processes but no managerial tasks. For this investigation a personal interview with the managing director (son of the previous owner) was conducted.

Dynamics of entrepreneurial activity:

In this case study CS-04 it seems that entrepreneurial activity is very much centralised in the person of the managing director and son of the previous owner of the company. His mother plays more of a consulting role and wants to retire from day-to-day business. Both of them share the central role as financial risk takers as the firm is a family owned business. The son, however, incorporates the role of the central decision maker and takes over responsibility in daily issues. He further seems to come up with innovative ideas for the company by combining different knowledge fields and experience in conceptual technology development, market trends and customer observation. The direct contact to customers appears to play an important role for the managing director in this context as he observes customer problems and needs that contribute to the idea generation process of innovative products.

There are only a few people in the engineering office that come up with new ideas. These appear to be directly related to solve customer problems on a procedural level but not in relation to the generation of innovative products or services. Therefore, the engineering office crew is more of supportive character to the entrepreneurial function. The production supervisor and the quality assurance representative do not seem to contribute to entrepreneurial activities. They appear to be busy with processing day-to-day business in the production process. The rest of the employees do not seem to be involved in the entrepreneurial function as the production crew mainly focuses on running the production and machineries.

The entrepreneurial function in this case study has to be seen in the light of the company context. In 2009 the young managing director took over business overnight because his dad surprisingly deceased. This shock situation in the company resulted in a lot of insecurities for the employees. The new managing director had to step in the role of the decision maker no matter what. This also influences the centralisation of the entrepreneurial function on management level in this case study.

4.9.5 Case study CS-05

Case Study	Industry	Employees	Sales volume
CS-05	Innovation management	46	n.a.

Data collection:

In case study CS-05 the analysed primary data concerns an interview with a team leader of the company. The chart of the organisational structure as well as website information about the business areas and history of the company were analysed as secondary data.

Company background information:

The company in case study CS-05 is an innovation consulting firm that combines the three business areas of open innovation and community research, online IT-solutions, and industrial design to generate customised innovation ideas for other companies. Services of the company include the exploration and discovery of consumer insights via online communities, the building and management of communities, idea management, and patentable ideas and solutions for new products in cooperation with lead users. The firm was founded in 2000 and currently employs 46 people in the above mentioned three business segments.

Organisational structure, responsibilities and interview partner:

The company in CS-05 with 46 people has two management levels. The first management level consists of three board members in the areas of innovation community, innovation design and innovation research. The second management level refers to the team leaders of the business areas. The innovation community area works with three team leaders and sixteen innovation community experts. The innovation design area has two team leaders and nine experts in the field of ideation and industrial design. The innovation research team consists of three team leaders and ten researchers. The assigned team leaders directly report to the management board. With one of the team leaders, responsible for the ideation team in innovation design, a personal interview was conducted.

Dynamics of entrepreneurial activity:

Case study CS-05 is a special company in this investigation because it directly deals with the output of innovation and innovative ideas. It seems that this consulting approach requires entrepreneurial active people across the whole company and across all hierarchical levels. This situation describes the boundaries of the case study because the focus on innovation already is their core business and represented in their offered product portfolio for their customers.

However, the difference between innovation as product portfolio and as entrepreneurial function of the own company need to be clearly distinguished in this case study. When it comes to the firm's own entrepreneurial power the board members seem to be actively engaged in innovating in their own company. The organisational structure itself is more concentrated on the customer process than on functional divisions, which can be ascribed to the small company size. That means different corporate functions do not seem to play a specific role for the entrepreneurial function in this case. It is the management board members with their experience, entrepreneurial spirit, curiosity and a broad understanding of market trends in the field of innovation, that appear to come up with innovative ideas for the company. This mainly refers to innovation research and consulting methodologies. The combination of different knowledge and research areas, such as open innovation and community research, online IT solutions, and industrial designs, contribute to the innovation process not only for the customers but also for the firm itself.

However, it can be stated that without the organisational structure of team leaders who take away a lot of daily operating business, the board members themselves would not have enough room and freedom to innovate within the company itself. Therefore, the team leaders and their team members appear to be of supportive character to the entrepreneurial function. The main activity in the sense of new business ideas come from the management board team who share the role as decision maker, risk taker and idea generator for the development of the firm's business areas.

4.9.6 Case study CS-06

Case Study	Industry	Employees	Sales volume
CS-06	Metal processing	49	n.a.

Data collection:

In case study CS-06 a personal interview was analysed as primary data. Information about the company profile and business areas were analysed with the help of the company's website and the organisational chart as secondary data.

Company background information:

Case study CS-06 concerns a family owned metal processing company with two main business areas. The first business area deals with metal and glass frontages and the second one with special lighting equipment. In 1900 the company was founded as a small blacksmith firm. Over the years it further developed in the direction of industrial metalworking. The current two managing directors are brothers and lead the company in fourth generation.

Organisational structure, responsibilities and interview partner:

The company in case study CS-06 has 49 employees. The two managing directors subdivided the responsibility for the two business areas of metal and glass frontages and the area of special lighting equipment. That means the management team consists of these two managing directors. With one of them, responsible for the metal and glass frontages, a personal interview was conducted.

On the second level of the organisational structure there are three technicians in the engineering and construction office and one master mechanic as supervisor of the assembly crew. Further, there is one employee working as purchaser, one employee working as accountant and another one working in administrative tasks like cost finding and wage accounting. The remaining 40 employees work in production as mechanics and installers.

Dynamics of entrepreneurial activity:

The entrepreneurial activity in this case seems to be centralised at the two managing directors of the company. Both of them are financial risk takers because it is a family

owned business and the two are brothers. However, the managing director of the metal and glass frontages business seems to play an important role in the decision making about new business development in the company. He took over business from his father and his younger brother joined the company a few years later.

In addition to that, the master mechanic and supervisor of the assembly crew appears to engage in entrepreneurial activity by coming up with new ideas for technological solutions of customer problems. He shares these ideas with the managing directors and they make the final decision about the implementation. That means in this case study the master mechanic seems to contribute to the entrepreneurial function by partly playing the role of an idea generator in technological questions. The rest of the people in the company appear to be more of supportive character and conduct the production processes.

Finally, it has to be stated that innovation does not appear to be a main topic in this company which refers to the boundaries of this case study. The current company situation faces a lot of financial pressure. That means at the time of investigation, there are no investment possibilities in new products or technologies.

4.10 Entrepreneurial roles in small companies

The previous subsection outlined the dynamics of entrepreneurial activity in each case study. In the following it is tried to identify and describe the main entrepreneurial roles in small companies by combining the results of the emerged themes from the cross-case pattern matching analysis and the case analysis of the dynamics of entrepreneurial activity.

First of all, the managing directors can be identified as key persons of the entrepreneurial function across all investigated small companies. As described in the case reports (see Appendix F) this is not surprising as there is no clear cut division of labour and therefore no subdivision of corporate functional responsibilities and little organisational hierarchies. The managing directors appear to play several entrepreneurial roles such as the central decision maker and risk taker. The investigated small companies are owned by the managing directors which results in a centred financial responsibility. The roles of the decision maker and risk taker are closely linked to each other because investments in innovative products or services require the

respective financial backup. It is risk and responsibility that makes these decision makers and risk takers to be especially courageous, self-confident, assertive and tough (see 4.8). They seem to be motivated by their own personal willingness to take over responsibility (see 4.7).

Another role that could be identified to contribute to the entrepreneurial function is the role of the idea generator. This refers to the persons that actually create innovative ideas and communicate them. In the investigated small companies this role is mainly fulfilled by the managing directors as well. Only in one company (CS-01) the team of technological developers also engage in idea generation in the context of innovative technological idea and the experimentation of implementing them. The remaining case studies show a centralised idea generation on management level.

The role of the idea generators in small companies appears to be closely related to the role of the visionary and knowledge integrator. These people appear to have a deep understanding of market trends and economic developments and are further engaged in networking and communication about customer's problems and needs. By combining these different knowledge fields the managing directors, who actively fulfil these roles in small companies, create a vision for their company in which they believe is most successful. This seems to describe the personal energy and vitality of these people as they appear to find their individual fulfilment in their jobs (see 4.5). They seem to live what they are passionate about because it is part of their personality (see 4.8). Their passion of creating a vision and goal for their companies seems to mirror the way they use their liberties and power (see 4.6).

4.11 Summary and outlook

In summary, the following five entrepreneurial roles could be identified in small companies: decision maker, risk taker, idea generator, visionary, and knowledge integrator. All of these roles mainly seem to be centralised on management level. This means that the managing directors play a key role for the entrepreneurial function within the small companies. In smaller companies with a hierarchical level of at least team leaders it was investigated that some of these team leaders take over these entrepreneurial roles in parts. Still, the managing directors of these companies are crucial to the entrepreneurial function as assumed and represent the concept of Schumpeter Mark I.

Chapter 5. Findings In Midsized Companies

5.1 Introduction

The subsequently presented results follow the structure of chapter 4 and analyse the detailed seven main themes as well as the dynamics of the entrepreneurial function for midsized companies (see subsection 5.2 until 5.9). The chapter closes with the differentiation of the identified entrepreneurial roles within this company size category (see subsection 5.10). Finding an adequate organisational structure in midsized companies is a challenge and the here reported findings show many different concepts.

5.2 Corporate functions

The first main theme outlines the findings about the entrepreneurial function according to the different corporate functions of the company. In three case studies (CS-09 / I-31, I-32, CS-11 / I-28, CS-12 / I-48) there is evidence that people from sales department seem to play an important role for the entrepreneurial function (P-08a)⁶. Two of these case studies (CS-09 / I-32, CS-12 / I-47) further support the specific argument that innovative ideas mainly come from people with direct customer contact (P-07b). These two propositions mostly refer to the corporate function of sales and marketing.

Furthermore, in three case studies (CS-10 / I-36, CS-12 / I-48, CS-13 / I-26) the interviews show that a few specially gifted technicians seem to play an important role for the entrepreneurial function in midsized companies (P-09b). One managing director (CS-10) explained it in the following way.

‘Ich denke bei uns hier geht das eher über die Techniker, die auch die betriebswirtschaftliche Seite mitberücksichtigen. Da haben wir ein bis zwei, vielleicht drei Leute, die das können.’

(Translation: ‘In our company technicians who also have an understanding of business administration are important. We have one or two, maybe three people who have that capability.’)

(Managing director, CS-10 / I-36)

⁶ See Appendix D: Results matrices of key themes in midsized companies (detailed evidence of propositions, according case studies and interviews).

According to this statement the combined knowledge of technical and business administrative aspects seems to be meaningful for the entrepreneurial activity within the company. However, this specification was emphasised by only one of these three case studies (CS-10). Two of them emphasised technicians in the context of new technological ideas with entrepreneurial character (CS-12, CS-13).

Besides, only in one of the seven investigated mid-sized companies (CS-13 / I-23, I-25, I-26) it was reported that a few people in the department of research and development are involved in entrepreneurial activity (P-10a). In the context of this proposition it has to be noted that this case study (CS-13) is the only one of the mid-sized companies in the sample that has a separate department of research and development. All remaining six mid-sized companies are too small to afford a separate department like that.

Finally, six of seven mid-sized company case studies (CS-07, CS-08, CS-09, CS-10, CS-11, CS-13) confirmed that entrepreneurial activity does not happen in the corporate function of finance and controlling. Most of the interview partners referred to their finance department as a function of only supporting nature in the entrepreneurial process. The following quotation of a head of procurement (CS-11) can be seen as an evidential example for this proposition (P-11a).

‘Das Finanz- und Rechnungswesen ist ein Posten der abgearbeitet wird und im Unternehmen verwertet wird, aber dort geschehen keine Innovationen.’

(Translation: ‘Finance and accounting is a processing department whose output is utilized within the company. However, no actual innovation is happening there.’)

(Head of procurement, CS-11 / I-79)

5.3 Organisational hierarchies

The second main theme concerns the findings about entrepreneurial activity when different organisational hierarchies are involved. In mid-sized companies it appears that entrepreneurial activity and organisational hierarchies are interrelated. Across all seven investigated case studies (CS-07, CS-08, CS-09, CS-10, CS-11, CS-12, CS-13) 18 interview partners stated that mainly managing directors and team leaders are

involved in entrepreneurial activity (P-02b). In two case studies (CS-07, CS-12) it was further emphasised that people with responsibility for the company tend to be more involved in entrepreneurial activity (P-03a) which is also related with the previous proposition (P-02b).

In case study CS-07, for example, a tool construction company with 58 employees, it can be clearly stated that the board of managing directors are involved in entrepreneurial activities. As it is a family-owned business, all members of the management are related to each other and the son of one managing director was especially interested in the research topic. In the interviews this young managing director (CS-07 / I-65a) described his ideas and how much he enjoys being able to realise and drive them within the company. As managing director he is responsible for the company and is also engaged in entrepreneurial activities.

In case study CS-08, a private brewery with 60 employees, the interviews also showed clearly that the two managing directors are involved in entrepreneurial activities. Furthermore, the responsible team leader for brewery technology is involved. All of them are either directly in the board of managing directors or on team leader level.

Further, the interviews at a print media company (CS-09) with about 120 employed people show that the managing director and owner of the company as well as the head of sales management are involved in entrepreneurial activities. The head of sales management seems to be especially involved. In the interview he described his background as innovation manager and how much he is interested in engaging in new markets and business areas in the print and media industry (CS-09 / I-32a). He described that the direct customer contact helps him to stay close to the markets demands and to create new ideas (I-32a). Within the other case studies (CS-10, CS-11, CS-12, CS-13) the picture is very similar so that in midsized companies entrepreneurial activity seems to take place on management and team leader level (P-02b).

In addition to that, two case studies (CS-12, CS-13) outlined that the entrepreneurial function is carried out cooperatively (P-05a). Therefore, several people across corporate functions and hierarchies seem to be involved in entrepreneurial activities simultaneously (I-50, I-24, I-25). This finding supports the connection outlined above between managing directors and team leaders of sales or technology management.

Finally, in two case studies (CS-07, CS-10) two interview partners stated that the entrepreneurial function is linked more closely to an individual person than to a special corporate function, position or hierarchical level (P-04). This finding refers to internal

influencing factors such as personality, characteristics and capabilities of entrepreneurial active people.

5.4 Activities of entrepreneurs

The third theme is concerned with the activities of entrepreneurial active people themselves. The investigated mid-sized company case studies brought up ten main activities that are outlined below and appear to contribute to the entrepreneurial function.

a. *Market orientation:*

In six of seven investigated case studies (CS-07, CS-08, CS-09, CS-11, CS-12, CS-13) it was pointed out that an entrepreneur monitors the market and listens to customers (P-24b). Therefore, customer orientation was considered to be very important to the entrepreneurial activity.

‘Man muss auf den Markt schauen, raus gehen und offen sein für Innovationen. Kein Inseldenken – das ist der Knackpunkt.’

(Translation: ‘You need to monitor the market, go out and be open for innovations. No isolated thinking – that is the crucial point.’)

(Planning process manager, CS-07 / I-67)

The previous statement of a planning process manager (CS-07) emphasises the importance of market orientation and open-mindedness. In addition, in two case studies (CS-07, CS-13) interview partners explained that an entrepreneur looks for future technologies (P-25a).

‘Man muss Zukunftstechnologien im Blick haben und Forschungsprojekte machen.’

(Translation: ‘You need to keep an eye on future technologies and you need to engage in research projects.’)

(Head of product development, CS-13 / I-23)

This statement of the head of product development in case study CS-13 again emphasises the importance of being aware of future technologies on the market.

b. Decisions:

Five midsized company case studies (CS-07, CS-09, CS-11, CS-12, CS-13) regarded the capability of decision-making as most important entrepreneurial activity (P-12b). In three of these case studies (CS-09, CS-12, CS-13) interviewees explained that entrepreneurial decisions sometimes are based on a gut feeling (P-13b). One managing director (CS-13) even stated that all decisions were about gut feeling and claimed to be satisfied if three out of ten decisions per week turned out to be good ones (I-25).

c. Point of view:

Another important entrepreneurial activity concerns the personal point of view. Six case studies (CS-07, CS-08, CS-09, CS-10, CS-12, CS-13) confirmed that it appears to be crucial for entrepreneurial activities to see things from a different point of view with a more holistic and global vision (P-31a). A project manager who is responsible for technical sales in a print media company explained the emergence of new entrepreneurial ideas as follows.

‘Die Entstehung von Ideen ist immer gekoppelt mit dem Interesse an der Branche. Ich brauche dafür einen gesamtheitlichen Blick für die Bereiche Print, Media, Internet, Social Media, etc.‘

(Translation: ‘The emergence of ideas is always related to an interest for the industry. I need to have a holistic point of view for the whole areas of print, media, internet, social media, etc.’)

(Project manager & technical sales, CS-09 / I-32)

d. Risks:

The willingness to take over risks was highlighted as entrepreneurial activity (P-16b) by four midsized company case studies (CS-07, CS-09, CS-12, CS-13). One managing director (CS-10 / I-36) also brought up the idea that it is important to see more chances than risks (P-17b). Furthermore, six interview partners of four case studies (CS-10, CS-11, CS-12, CS-13) emphasised the importance to try out new things and to believe in them at the same time (P-18a).

e. Taking action:

Taking action and tackling things was outlined as an important entrepreneurial activity (P-28b) as well by four case studies (CS-07, CS-10, CS-11, CS-12). Three of these interview partners (I-63, I-36, I-48) further emphasised that an entrepreneur sees chances and puts them into action (P-29a).

In case study CS-10, for instance, a company from the automotive engineering and development industry with 170 employees, the assistant managing director had the idea of creating a new location nearby in order to recruit more employees for a special new task related with a new technological development. He stated that taking action does not mean to try out everything but in certain circumstances it is important to simply take action and move forward otherwise competitors exploit the opportunity before.

f. Creating a culture without accusation:

In four case studies (CS-09, CS-10, CS-11, CS-13) the aspect of learning from failures and creating a culture without accusation was highlighted as entrepreneurial activity (P-38b). In two interviews (CS-11 / I-28, CS-12 / I-49) the permission to act entrepreneurially was mentioned as an important prerequisite (P-39a). This proposition refers to the culture of an organisation and the method for communicating permission for entrepreneurial activity.

In case study CS-11 (I-28a), a company that develops and produces industrial doors, the interviewees explained that there is a new managing director for the company. Before, the whole company was characterized by inertia and there was no customer orientation at all because the decision-making process was monopolised by the old managing director. The interview partners described the culture as ‘customer threatens with order mentality’. The new managing director comes from sales and marketing and pushes the company towards customer orientation. He expects people to come up with new ideas and try out new things regardless of the results. At the very beginning people did not dare to do that and had to learn it first. However, after a while people started to actively get engaged in innovative activities even though not all ideas were great breakthroughs. This move broke the inertia of the company and challenged the people to actively get engaged and be open-minded for entrepreneurial activities (I-28a).

g. Dealing with people:

Ten interview partners in four case studies (CS-07, CS-11, CS-12, CS-13) further described the importance of guiding, training and enabling people concerning their work

for entrepreneurial activity (P-19b). In this context one managing director (CS-07 / I-64) suggested that motivating employees is an important part of entrepreneurial activity (P-20a).

The managing director of case study CS-21, a company with around 2000 employees from the organic baby food industry, explained that the employees are the most important asset the company has. This means that training and guiding people towards entrepreneurial thinking is very important. He further described that inviting people to think about upcoming decisions and discussing them enables the employees to get involved in entrepreneurial activity (I-43).

h. Communication:

The next entrepreneurial activity concerns the issue of communication within an organisation. Three case studies (CS-11, CS-12, CS-13) emphasised the activity of speaking with each other about problems and new ideas to be important for the entrepreneurial process (P-23a). It appears that knowing from each other across functions, divisions and hierarchies are important factors (P-22a), as two interviewees stated (CS-07 / I-63, CS-11 / I-28).

i. Responsibility:

The aspect of personally taking over responsibility was further considered important for entrepreneurial activity (P-14b) by three cases studies (CS-08, CS-11, CS-12). One managing director (CS-12 / I-47) stated that people who are involved with personal responsibility are drivers of innovations within the company (P-15b). In case study CS-12, a family-owned and managed business with around 200 employees, the managing directors (I-47, I-48) both described that people who are personally invested are also the ones involved in entrepreneurial activity. These are mostly other family members who are financially involved. It seems that this kind of responsibility is important for the entrepreneurial function as well.

j. Finance:

In two case studies (CS-12, CS-13) two interviewees mentioned that keeping an eye on the financial situation and budgeting the available resources (P-35a) has to be included as an entrepreneurial activity as well. However, the interview partners (I-52, I-26) explained this activity as a proper way of dealing with the current financial situation

based on a holistic approach but not as a main entrepreneurial activity itself that generates and exploits innovative ideas.

5.5 Personal predisposition and learning

The fourth theme of this research project is concerned with the question whether a person has entrepreneurial spirit as a predisposition or if it is something a person can learn. In six of the seven investigated case studies (CS-07, CS-08, CS-09, CS-11, CS-12, CS-13) twelve interviewees stated that entrepreneurial spirit is something you rather have as a person but nothing you can learn (P-56b).

The managing director of case study CS-09, for instance, explained that this kind of entrepreneurial spirit is a personal curiosity for new things that you either have or do not have. He further outlined that this does not only refer to these people's business life but also to their private settings (I-31).

Four interviewees of these case studies (CS-07, CS-12, CS-13) stated that there is a part of entrepreneurial spirit that can be learned but a personal disposition also has to be present first (P-58b). The head of research and development, for example, in case study CS-13, a company in the automotive industry that develops and produces coaches, stated that this entrepreneurial spirit is predefined within the personality of a human being to some point. The rest of it is influenced by learning through life-time experiences (I-26a).

5.6 Intensities and concentration of entrepreneurial activity

The fifth theme of this investigation refers to the question of whether there are different intensities of entrepreneurial activity. The question concerning the existence of different intensities of entrepreneurial activity was positively confirmed (P-77b) by five case studies (CS-07, CS-09, CS-11, CS-12, CS-13). One managing director stated that entrepreneurial activity definitely happens in different intensities across all hierarchical levels (I-31). Only one interview partner did not agree with his colleagues in this subject matter (CS-13 / I-23) and holds the opinion that there are no different intensities. He

further stated that he does not believe in a relation to personal affinities towards guidelines or liberties when entrepreneurial activities are concerned (P-78a).

Personal affinity:

Eighteen interview partners across all seven case studies of the investigated mid-sized companies (CS-07, CS-08, CS-09, CS-10, CS-11, CS-12, CS-13) explained that personal affinity matters when it comes to entrepreneurial activities. People with an affinity to liberties were evaluated to be more entrepreneurial active than people with an affinity to rules and guidelines (P-79b).

5.7 Motivation of entrepreneurs

The sixth main theme concerns the issue of what motivates people to engage in entrepreneurial activity. In the mid-sized company case studies six main motivation factors emerged: acknowledgement, vitality, incentives, vision, responsibility, and individual fulfilment. Each of these motivation factors is outlined briefly in the following.

a. Acknowledgement:

In five of seven case studies (CS-07, CS-10, CS-11, CS-12, CS-13) interviewees emphasised the motivation factor of acknowledgement. It appears that being recognised socially and for work success as well as personal achievements is one of the most important motivation factors for entrepreneurial activity (P-46b).

b. Vitality:

Five case studies (CS-07, CS-09, CS-11, CS-12, CS-13) referred to personal vitality and energy as motivation factor for entrepreneurial activity (P-48b). Further, in four case studies (CS-07, CS-11, CS-12, CS-13) it was emphasised that people who rejoice in their work are motivated for entrepreneurial activity (P-49b). However, only one interviewee (CS-07 / I-67) evaluated passion to be motivating entrepreneurial activity (P-51b).

For seven interview partners in four case studies (CS-07, CS-09, CS-12, CS-13) it was further important to have the feeling that they can change something within their

corporate setting and that they are challenged with many different problems (P-50b). These factors seem to motivate them to engage in entrepreneurial activity.

c. Incentives:

The monetary aspect seems to motivate entrepreneurial activity as well in mid-sized companies. This proposition (P-55b) was supported in four case studies (CS-09, CS-10, CS-12, CS-13).

d. Vision:

The personal goal or vision of an individual seems to motivate entrepreneurial activity (P-52b). Four interview partners from four case studies shared this opinion (CS-07, CS-08, CS-09, CS-12).

e. Responsibility:

Only two case studies (CS-12, CS-13) emphasised the aspect of personal responsibility and joy in taking over responsibility as motivation for entrepreneurial activity (P-42b). One head of production (CS-12 / I-52) mentioned the personal aim to set an example for other people to be a motivation factor for him to engage in entrepreneurial activity (P-43b).

f. Individual fulfilment:

Lastly, the aim for individual fulfilment was outlined in no more than two case studies (CS-07, CS-13) to be motivating entrepreneurial activity (P-53b). It appears that in mid-sized companies individual fulfilment does not seem to play a big role for motivating people to engage in entrepreneurial activity.

5.8 Personality, characteristics and capabilities of entrepreneurs

Finally, the seventh theme of the investigation refers to the influencing aspects of personality, characteristics and capabilities. Ten main aspects could be identified that seem to play an important role for an entrepreneurial active person: assertiveness, reflection, mindset and upbringing, courage, confidence, public image, robustness, passion, experience, and environment and culture. In the following these aspects are outlined briefly.

a. Assertiveness:

Assertiveness seems to be an important characteristic of an entrepreneurial active person. In six case studies (CS-07, CS-08, CS-10, CS-11, CS-12, CS-13) thirteen interview partners stressed that it is important to know what you want and to have assertiveness (P-59b) as the following statement of a managing director shows.

‘An Charaktereigenschaften braucht man ein breites Kreuz und Durchsetzungsvermögen.’

(Translation: ‘When it comes to characteristics you need broad shoulders and assertiveness.’)

(Managing director, CS-07 / I-64)

b. Reflection:

In five case studies (CS-07, CS-08, CS-11, CS-12, CS-13) it was stated that an entrepreneur needs to be self-reflected concerning strengths and weaknesses of the own person and the ones of other people within the organisational setting (P-66b). The issue of realising individual limits therefore seems to be of great importance in this context.

c. Mindset and upbringing:

Eight interviewees of five case studies (CS-07, CS-09, CS-10, CS-12, CS-13) hold the opinion that whether or not someone engages in entrepreneurial activity is a question of mindset and upbringing (P-61b). The personal point of view as well as the impact of one’s education seems to play an important role as well (P-62b).

d. Courage:

The courage to tackle certain tasks and issues was evaluated to be meaningful for an entrepreneur (P-60b) in three case studies (CS-07, CS-12, CS-13). One of the managing directors (CS-07) explained that an entrepreneur cannot be guided by the need for security but by looking for chances and opportunities and by taking risks (I-63).

e. Confidence:

Closely related to the previous aspect is the matter of confidence. In three case studies (CS-07, CS-09, CS-13) interviewees stated that an entrepreneur needs to have self-confidence and charisma (P-63b) for entrepreneurial activities.

f. Public image:

Three interview partners of three case studies (CS-08, CS-12, CS-13) mentioned the aspect of an entrepreneurs public image. They pointed out that an entrepreneur needs to be aware of his or her impact on others (P-67a). An entrepreneur seems to be a person with certain publicity within a corporate setting and therefore also needs to be aware about it.

g. Robustness:

In three case studies (CS-07, CS-12, CS-13) it was emphasised that an entrepreneur needs to have a robust character (P-64b). A managing director explained it as follows.

‘Man muss auch mal Rückschläge wegstecken. Und man muss mit der Unsicherheit klarkommen. Ich denke das ist Berufung. Nicht jeder ist Sportler oder mag Literatur. Das ist ein Stück Begabung.’

(Translation: ,You also need to cope with setbacks. And you need to be able to deal with uncertainty. I think this is a calling. Not everyone is a sports person or likes literature. To a certain extend this is about capabilities.’)

(Managing director, CS-07 / I-63)

h. Passion:

Furthermore, it seems that as an entrepreneur you need to be passionate about your job (P-65b). That is what three interviewees in three case studies stated (CS-07, CS-10, CS-12). In this context a managing director pointed out that an entrepreneur needs both, will and love for the job (CS-07 / I-64).

i. Experience:

Only in one case study (CS-13) two interviewees explained that entrepreneurial activity depends on the professional experience of a person (P-68a). One of them, a head of development, posed the question of how someone, who did nothing but develop windscreen wipers for the last few years, could come up with innovative ideas for a complete coach model range (I-23).

j. *Environment and culture:*

Another aspect that came up in six mid-sized company case studies concerns the environment and culture of an organisation. Creating an open culture where new ideas are welcome seems to be important (P-70b). In two of these cases (CS-07, CS-12) it was emphasised that trust within the team plays an important role for entrepreneurial activity.

To sum up, these seven main themes described the entrepreneurial activity in mid-sized companies in detail according to the corporate functions, organisational hierarchies, activities, personal predisposition, intensities, motivation and several personal characteristics. In the following the cases are analysed in the light of the dynamics of entrepreneurial activity.

5.9 Case reports of entrepreneurial dynamics

In this subsection it is tried to explain the dynamics of entrepreneurial activity on a case-by-case basis. The organisational structure and responsibilities as well as the interview partners are outlined before. Detailed information about the company background and key findings can be found in the respective appendices.⁷

5.9.1 Case study CS-07

Case Study	Industry	Employees	Sales volume
CS-07	Tool construction	58	n.a.

Data collection:

In case study CS-07 primary and secondary data were analysed. In this context six personal interviews were conducted with the following responsibilities: three managing directors (head of production, head of sales/marketing and human resources, head of quality management), the team leader of engineering management, the team leader of

⁷ See Appendix G: Case reports of mid-sized companies.

planning processes and training, and the team leader of tool construction. These six interview partner were made available for research by the management team because of their experience and closeness to the research topic. There was no access to further interviews in other functions.

Further information about the company and its background could be collected from the company website. Additionally, the management team provided confidential information about internal responsibilities, substitution, the process matrix, the structuring of operations, organisational charts, and company profile. This data was analysed as secondary data.

Company background information:

Case study CS-07 concerns a company in the tool construction industry with 58 employees. In 1993 the company was founded by the two managing directors as a management buy-in of the former traditional family-owned business. The company is focused on tool and mould construction with midsized machines up to 20 tons. In 2007 a special technology and services firm was founded as part of the company in order to serve the international demands of tool logistics. By now the company operates internationally and offers planning, production, delivery, implementation of their production plant systems, as well as application trainings for their customers especially in Germany, Russia and China.

Organisational structure, responsibilities and interview partner:

The company in case study CS-07 has 58 employees and is organised in three hierarchical levels. First of all, the firm has a cooperative management team for both parts of the firm: the production part and the technology and services part. This management team, as first organisational level, has four members with shared responsibilities for production, sales and marketing, finance, human resources, purchasing and quality management. The second organisational hierarchy concerns the three main operating areas of the company and their leaders: production, sales and order transaction, and business administration. However, the leaders of these three areas are also members of the management team. That means that first and second management level are differentiated due to structural reasons in the organisation but fulfilled by the same people of the management team. The third level represents the sub-teams of the three main organisational areas. The production area splits up into industrial engineering, CAM (computer aided manufacturing) programming, production and

logistics. The area of sales and order transaction splits up into purchasing, sales and construction. Lastly, the business administration area consists of finance and accounting as well as human resources. For each of these sub-teams one team leader is appointed which represents the third hierarchical level.

A few years ago the company had an innovation coaching for the management team and some of the team leaders. In this context the management processes were reviewed and the here described organisational structure was established. Most of the responsibilities are appointed to the management team. The team leaders of the sub-teams only have very limited responsibilities. This represents the hierarchical leadership style within the company.

For the current investigation six personal interviews were conducted with the following responsibilities: three managing directors (head of production, head of sales/marketing and human resources, head of quality management), the team leader of engineering management, the team leader of planning processes and training, and the team leader of tool construction.

Dynamics of entrepreneurial activity:

Case study CS-07 shows that the entrepreneurial function is mainly split up across members of the management team with their shared responsibilities across all different corporate functions. There is only very little entrepreneurial activity that comes from team leader level or other employees. This centralisation of entrepreneurial activity mirrors the investigated company situation and culture and therewith also the boundaries of the case study. It appears that the management team does not delegate much responsibility to other employees. This hierarchical leadership style created a company culture that is characterised by many rules, regulation and control. A few years ago the management team engaged in an innovation coaching and critically reviewed their whole company processes, leadership, and the company vision which opened up a few barriers for more entrepreneurial activity at the rest of the team leaders and employees.

The entrepreneurial function seems to be split up across the three managing directors who appear to engage in different entrepreneurial roles. One managing director, responsible for sales, marketing and human resources, seems to play an important role concerning the direct customer contact and the sense for the market. He is networking a lot and has good connections to Russia and China as well as to German customers. With

this background he seems to fulfil the role of the networking salesman, who gets innovative ideas from reviewing the market and directly talking to customers.

The second managing director, responsible for the whole production and logistics, is more of an internal networker. He spends long hours at work, controls a lot in the production line and is contact person for everyone and everything in the company. People also come to him with private issues and questions. It appears that this managing director has problems in delegating responsibilities and fulfils the role of a strict production controller but also as contact person within the company.

The third managing director with responsibility for quality management systematically reviews the processes together with the employees and therefore integrates them into the process of further developments and decisions. It seems that he creates team spirit within the company with his appreciating way of dealing with people. Therefore, this role can be described as team spirit motivator and integrator.

In this case study CS-07 these three managing directors and their roles seem to be important for the entrepreneurial function. It is tried to facilitate more entrepreneurial activity on team leader level and across all other employees but this takes time as it is not only an organisational challenge but further refers to the company culture itself that has been characterised by strict hierarchical structures for many years.

5.9.2 Case study CS-08

Case Study	Industry	Employees	Sales volume
CS-08	Beverages	60	n.a.

Data collection:

For the analysis of case study CS-08 primary and secondary data could be collected. First of all, one personal and one telephone interview with the managing director of the company serve as primary data. Furthermore, background information about the company, its history, customers and organisational structure was collected by analysing the company website and with the help of internal information from the company. This data serves as secondary data.

Company background information:

Case study CS-08 concerns a company in the beverage industry with a focus on ecological technologies. The main business area is the brewery. Soft drinks are produced as well but only make a small part. The brewery has a 500 years old history. Founded in 1492 the brewery was under prince-archbishop command for more than 300 years. From 1876 onwards the company was owned by several generations of the same family and build up with new technologies. In the late 90's they started to buy several smaller breweries in the region and developed a new environmental friendly protective brewery procedure. In 2008 the first German solar thermal power plant for hot water with more than 130° was build, followed by a new filling system, a new logistics centre and a new bottle-washing plant. Due to these investments 50% of the required energy for the brewery production processes can be gained from a solar thermal process power plant. At present the company has 60 employees.

Organisational structure, responsibilities and interview partner:

The company with 60 employees is still family owned but has two managing directors who report the owner about the status quo on quarterly basis. One managing director is responsible for sales and marketing and the other is responsible for human resources, purchasing, and logistics. Both of them represent management level one. Furthermore, a master brewer is responsible for the production process and a confidential clerk deals with finance and accounting. The corporate function of sales and marketing has four further team members. There is a monthly review with all responsible team leaders from production technology, logistics, transport fleet, sales and marketing, administration and finance. These responsibilities can be understood as second management or team leader level. The remaining employees work in the areas of production, transport fleet, merchandising, and administration. For this research investigation two interviews were conducted with the managing director who is responsible for sales and marketing.

Dynamics of entrepreneurial activity:

The entrepreneurial function in case study CS-08 seems to be split up in the management team and the team leader of the production procedures and technologies. There are two different roles that seem to be important for this company constellation. The managing director of sales and marketing appears to play the important connecting role to market and customers and therefore brings in new ideas and visions. The other managing director appears to be more of administrative and decision making

responsibility. He further engages a lot in internal networking with the employees and therefore plays the role of the internal connector and integrator. This was especially important when the new strategy of the company was established. With his networking and integrating communication he helped the employees to gain an understanding of the new direction of the firm which is also related to the role of the motivator within the organisation.

The team leader of the production procedure seems to be involved in new technological idea creation for the whole production process. He seems to represent the technical expert in the company as he comes up with innovative technological ideas with a focus on an environmental friendly solar thermal production. The use of solar thermal technologies in the brewery process was new.

That is why the team leader of production appears to play the role of the technological crack and idea generator and therewith contributes to the entrepreneurial function. The managing director of sales and marketing seems to engage in idea generation as well due to his deep understanding of customer needs. Both managing directors further play the role of the central decision makers when it comes to the promotion of new technological and product ideas. Even though the owner of the company is not involved in the day-to-day business management he remains the financial risk taker.

5.9.3 Case study CS-09

Case Study	Industry	Employees	Sales volume
CS-09	Print and digital media	120	n.a.

Data collection:

In case study CS-09 two personal interviews were conducted and analysed as primary data. One interview took place with the managing director of the company and the other interview with the head of sales and marketing. In addition to that secondary data about the company background, its history and development was analysed from the company website and internal information material.

Company background information:

Case study CS-09 concerns a midsized company in the print and digital media industry. Founded in 1981 the firm is currently owned and managed in second family generation. Over the years the production plant was modernised and widened into business areas of digital print, workflow software, offset print, and document management. In 2008 the company build up two subsidiaries in France and Spain. At present the company has 120 employees and four strategic business areas. The first business area focuses on electronic document management and provides the IT architecture to structure and secure company data according to their business processes. The second business area deals with the traditional print and media business. This includes services of IT specialists for online media as well as printing methods. The third business area concerns methods in the field of automated publications and interactive electronic applications. Lastly, labs are the fourth business area of the company which refers to the internal research and development of new technologies in the field of new applications, workflow solutions, web-to-print, and printed electronics.

Organisational structure, responsibilities and interview partner:

The company, with its 120 employees, has an organisational structure that includes two leadership levels. The first level is the management team that consists of four members with responsibilities of sales and marketing, finance, technology and order transaction management, and organisation and administration. The second leadership level concerns seven department heads who share responsibilities for finance and administration, property and buildings, IT, contracting, purchasing, production, pre-press, order transaction, sales and marketing, calculation, digital production and data management, project management, security, and quality management. There are two more team leaders for the area of materials logistics and the order processing. The rest of the employees have performing responsibilities but no leadership functions.

For the current investigation two personal interviews were conducted. One interview took place with the managing director of the company and the other interview with the head of sales and marketing and IT project management.

Dynamics of entrepreneurial activity:

It seems that in case study CS-09 the entrepreneurial function splits up across two of the management executives and the department head of sales and marketing and IT project management. In this context it has to be noted that the above mentioned department

head was trained as internal innovation manager with an educational programme of the Chamber of Commerce and Industry in Germany. This is why his understanding and engagement in innovation management within the company has a deeper background. In this case study the corporate function of sales and marketing with direct customer contact appears to be a central contribution to the entrepreneurial activities.

The business area of internal research and development, however, appears to be still in the starting phase of being established in the company. In the interviews there was no detailed information about the labs on new technologies. The emphasis in this company seems to be on the customers themselves and the investigation of market developments, changes and new business possibilities. This is why the corporate function of sales and marketing plays a key role for the entrepreneurial function in this company.

When it comes to the general dealing with new ideas within the company it has to be mentioned that 80% of the employees are smokers. That means that a lot of communication about new ideas and possibilities happen throughout smoking breaks. These little breaks and communication possibilities appear to add an important point in the process of how new ideas are shared and processed in the company.

In the management team it appears that two of the managing directors with responsibility for sales and marketing and for the technology part appear to engage in entrepreneurial activity as decision makers and risk takers. Both of them seem to have a sense for new business opportunities and appear to be driven for actively changing the status quo.

To sum up, the entrepreneurial function seems to consist of a network of different roles in this company. The customer contact and innovation manager role of the team leader of sales and marketing and IT project management, and the two managing directors for sales and marketing and technology appear to fulfil the entrepreneurial function in this case study. The remaining people are more of supportive processing character.

5.9.4 Case study CS-10

Case Study	Industry	Employees	Sales volume
CS-10	Automotive development	170	n.a.

Data collection:

In case study CS-10 two members of the management team were interviewed. One personal interview was conducted with the head of finance and human resources and one personal interview took place with the regional manager. The interview transcripts serve as primary data. In addition to that, information about the company's background and business areas could be analysed from the company's website as secondary data.

Company background information:

The case study concerns a company that is part of a larger holding group in the automotive, technology and mobile app industry founded in 2001 with more than 9000 employees. The group has seven locations in Germany, one in Austria and one in Switzerland. The investigated case study CS-10 only concerns one company location in Germany. This company provides development and consulting services in two main business areas - electronics and IT – and focuses on the automotive industry only. The business area of electronics include the development of energy systems, network features, interconnection systems, hard- and software of control devices, concepts and prototypes, and vehicle testing. The second business area of information technologies refers to diagnostic routines of module and tool development, system configuration and integration, inspection systems, business reporting, and the management of testing data and security. As the company at the investigated location is a separate enterprise within the holding group, it can be referred to as SME with currently 170 employees. Around 140 of these people are permanent employees and the rest are interns or students with degree theses.

Organisational structure, responsibilities and interview partner:

The organisational structure of the company with its 170 employees shows the four main operating areas of the company: management and administration, system integration, component development, and software development with diagnostics and

data management. The company is structured in two management levels. The first one is the management team with two members, the director and regional manager as well as the managing director for finance and human resources. The second management level includes the four team leader for the business areas of system integration, component development, diagnostics, and data management.

When it comes to the distribution of the employees according to the different business areas the organisation is structured as follows: eight people work in management and administration (management, IT systems, controlling, accounting, reception, and assistants), 70 people work in the area of system integration, 40 people in the field of component development, and 20 people in the area of diagnostics and data management. The current investigation includes one personal interview with the head of finance and human resources and one personal interview with the regional manager of the company.

Dynamics of entrepreneurial activity:

In this case study CS-10 the managing director of finance and human resources as well as two technical team leaders seem to contribute to the entrepreneurial function. The regional director seems to only represent the company towards the holding and somehow serves as a bumper for the financial expectations of the holding group.

The role of the managing director of finance and human resources, however, seems to be central for the entrepreneurial function in this case study. He promotes the technological ideas from the two technical team leaders who themselves appear to operate with a very open mindset for new technological possibilities. He also seems to play an important integrating, networking and motivating role for the people in the company. The managing director is further aware of the many more possibilities that could come from sales and marketing activities with direct customer contact.

Then, there are two team leaders from the areas of component development and system integration. Both of them seem to represent the technical cracks in the firm who come up with new technological ideas and find solutions for technological issues. They appear to contribute to the entrepreneurial function as idea generators. The role of the regional director however cannot be neglected in this network as he also has to approve and take the risks for new technological ideas. Therefore it can be stated that the above described roles of the idea generator, the networker and integrator, the decision maker, as well as the risk taker, seem to create an entrepreneurial network in this company.

5.9.5 Case study CS-11

Case Study	Industry	Employees	Sales volume
CS-11	Industrial doors	140	n.a.

Data collection:

For the case study CS-11 primary and secondary data was analysed. Two interviews were conducted in person and the interview transcripts were analysed as primary data. Additionally, internal company information about the organisational structure and processes as well as company background information from the official website could be analysed as secondary data.

Company background information:

The company group was founded in 1850 and has two company parts, one that produces tipping trailers and the other part that produces industrial doors. Both of them belong to the group but are separate enterprises. This investigation only refers to the company part of the industrial doors which was founded later in 1957. Back then the firm also produced escalators but strategically focused on doors later on. Today the product portfolio ranges from sliding and revolving doors to lifting, roll and elevator doors. Furthermore, the company offers respective security systems for these products. Currently, the company has 140 employees.

Organisational structure, responsibilities and interview partner:

The organisation with 140 people is structured with three management levels. The first level concerns the two managing directors who split up their responsibilities. One is responsible for sales and marketing, production and technological development and the other holds responsibility for finance, human resources and administrative issues. The second level consists of three business unit leaders who have responsibility for sales and customer service, production and technological development. The third level refers to eight team leaders within the business units of production and technological development who are responsible for the departments of purchasing, customer transaction, production processes, logistics, research and development, special construction, model building, and quality management. The rest of the employees are

split up according to the specific departments. Twelve people work in sales and marketing, twelve people in technological development, three people in quality management and around 100 employees directly work in production. For this research project two personal interviews were conducted with the head of production and the head of purchasing.

Dynamics of entrepreneurial activity:

It seems that in this case study CS-11 the entrepreneurial function is very much centralised in the management team. The new managing director himself has a professional background in sales before he came to this company. He appears to play an important role as internal connector, integrator and motivator. The reorganisation and focus on customer orientation shows this experience. It further appears that the company had a long way to process as the company seems to be stuck in rules, regulations and single departmental islands with very low communication before these organisational and strategic changes were made around eight years ago. Most people on team leader level appear to slowly dare to engage in entrepreneurial thinking. The activities appear to still be very limited on these levels. However, there is a tendency that team leaders and the rest of the employees are encouraged to engage in entrepreneurial activity. This never happened before in this context and therefore it is not known by the employees in this way. Entrenched habits, especially when the company's culture and communication systems are involved, seem to take a long time to change and a lot of persuading and encouraging the people within the company. To sum up, the entrepreneurial activity at the point of investigation is still limited to the management team and activities in sales and marketing. The new managing director seems to play the key role in this context due to his experience in reviewing market trends and focusing on customer needs. Furthermore, as managing director he is in the position of the central decision maker and risk taker who has the power to promote new ideas.

5.9.6 Case study CS-12

Case Study	Industry	Employees	Sales volume
CS-12	Tool construction	205	n.a.

Data collection:

In case study CS-12 seven personal interviews with the managing directors and different department heads (sales, project management, quality management, logistics, production, and construction) were conducted. These interviews were analysed as primary data.

Furthermore, internal information about the company's organisational structure and responsibilities were analysed as secondary data as well as general background information from the website about the company's history and product portfolio.

Company background information:

Case study CS-12 concerns a family-owned business in the tool construction and injection moulding industry that was founded in the early 1970s. For more than 40 years the company is run by the same family and the next generation is about to take over business in the coming years. The company developed from a small tool construction firm to a provider for system solutions in the injection moulding industry. Today the firm attends to customers in the automotive, mechanical and electrical engineering, electronics, and optical industry. Currently, the company employs 205 people.

Organisational structure, responsibilities and interview partner:

The organisation with its 205 employees is structured with three leadership levels. The first level represents the management team of two managing directors. The founder of the company is responsible for the business areas of production, and sales and marketing. The daughter of the managing director is also member of the management team on first level and responsible for finance, human resources, purchasing and logistics. The second leadership level is structured by the seven main corporate functions of the company: sales and marketing, project management, purchasing and logistics, production, tool construction, storage and delivery, and quality management. For each of these main operations one team leader is appointed. The third level of the company concerns the further divisions of the production (six divisions) and the project

management (two divisions). For these eight divisions there are also team leaders appointed.

More than 40% of the employees work in the production, about 25% work in tool construction, 5% work in management and administration, and the remaining 30% are split up in the departments of sales and marketing, purchasing and logistics, storage and delivery, project management, and quality management.

For the current investigation seven personal interviews with the managing directors and different department heads (sales, project management, quality management, logistics, production, and construction) were conducted.

Dynamics of entrepreneurial activity:

In this company the whole decision making and responsibilities are highly centralised towards the managing director who seems to have the role of the company founder and patriarch. He can be described as central figure in the company but has issues in delegating responsibility and therefore does not encourage other people to engage in entrepreneurial activities. It appears that there is little room for other people to contribute to the entrepreneurial function. Within the company the founder and managing director of the firm is acknowledged as very gifted technician with a lot of work experience. This combination of acknowledgement, patriarchy and stubbornness seems to make him the central figure in the company without whom nothing is possible. The daughter and managing director of the firm appears to actively engage in networking, integrating and connecting with the employees across all different corporate functions. However, it seems that the decision making role is still fulfilled by her father.

Furthermore, on second leadership level the team leaders of production, tool construction, and sales and marketing appear to contribute to the entrepreneurial function in the context of generating innovative ideas. These innovative ideas refer to technological developments on the one hand and to the research of customer and market trends on the other hand. But the hierarchical decision system in the organisation seems to leave very little room and liberties to communicate and drive innovative ideas. When the company founder does not like an idea or takes little time to even listen to their employees there is a clear barrier for these people to be motivated to further engage in entrepreneurial activities. These team leaders seem to try and actually want to engage in entrepreneurial activity but have little room for it because the managing director pulls

very strict rules and regulations. It still seems that within these boundaries these three team leaders engage in idea generation in the organisation and therefore partly contribute to the entrepreneurial function as well.

However, the driving force and promotor of entrepreneurial activity in this case study CS-12 is the managing director and founder of the company. He and his daughter also share the responsibility as financial risk takers when it comes to investments in innovative new product ideas or technological changes in the production processes.

5.9.7 Case study CS-13

Case Study	Industry	Employees	Sales volume
CS-13	Automotive / coaches	246	n.a.

Data collection:

For this case study CS-13 primary and secondary data was analysed. Five interviews were conducted in person. The transcribed interviews with the managing director who is responsible for technological development, purchasing and quality management, two leading technological developers and the responsible quality manager serve as primary data in this case study investigation.

Furthermore, internal company information about responsibilities, customer portfolios, product portfolios, and organisational structures were provided by the interviewees for this research project. Background information about the history of the company in general could be collected from the company website. This information serves as secondary data for the current analysis.

Company background information:

This case study presents a company from the automotive industry that develops and produces coaches. The company was founded in 2009 by taking over an existing plant and the production licence of the previous coach brand. Currently the company employs 246 people. With five strategic business areas based on a batch production system, the company develops and produces airport shuttle coaches, premium tour coaches, and public service vehicles. The fifth strategic business area concerns the customisation of other brand coaches with specific upgrading and modification procedures.

Organisational structure, responsibilities and interview partner:

In this company with 246 people the organisational structure includes three management levels. Two managing directors represent the first management level. One is responsible for the areas of production, sales and marketing, finance and human resources. The other managing director has responsibility for the technological development, purchasing and quality management.

The second management level refers to the division of corporate functions. Five division heads lead the functions of production, materials logistics, technological development, sales and marketing, and business administration.

The third management level is represented by sixteen team leaders of respective subdivisions of the above described corporate functions. The production has three team leaders for structural work, completion and interior construction. The material logistics include two team leaders for purchasing and logistics. Further, the technological development is split up into the development of tour coaches, low floor coaches, and special vehicles. The corporate function of sales and marketing includes five team leaders for the subdivisions of tour coaches, low floor coaches, special vehicles, after sales, and spare parts. Lastly, the business administration unit subdivides into human resources, accounting and information technology.

With this structure around 10% of the employees have leadership responsibility in the above described organisational structure. 70% of the employees work in production, materials logistics, and sales and marketing. Another 10% work in the department of technological development and construction. The remaining 10% include interns and trainees.

For this investigation five interviews were conducted in person with the managing director who is responsible for technological development, purchasing and quality management, two leading technological developers and the responsible quality manager.

Dynamics of entrepreneurial activity:

The entrepreneurial function in this company has to be understood in the context of their current strategic situation. The firm was founded three years ago as a management buy-out and develops its own brand, coach lines and innovative coach customizing concepts. In this strategic phase of the company it seems to be clear that people in the department of technological development as well as sales and marketing play an important role for the entrepreneurial function. These circumstances mirror the

boundaries of the case study with regard to the investigation of the entrepreneurial function as phenomenon itself and the context of the current company situation.

The sales and marketing team analyses customer needs, market trends and niche possibilities and cooperates with the technological development department that further creates respective innovative concepts for new coach lines. In the production, there are two technicians who also seem to engage in entrepreneurial activities as they actively challenge these new concepts by testing and implementing them. Other corporate functions are important for the business as well, of course, but in the current situation of the company other departments such as finance, controlling, logistics, or human resources do not appear to contribute to entrepreneurial activity. The described network of sales and marketing, technological development, and production seems to be the main contributors to the entrepreneurial function in this case study. The managing director with responsibility for technological development appears to play an important promoting and decision making role in this context because innovative technological ideas seem to mainly come from the two development cracks that have a broad technological understanding.

5.10 Entrepreneurial roles in midsize companies

After the detailed look in the dynamics of entrepreneurial activity, this subsection tries to explain the different identified entrepreneurial roles in midsize companies. These roles could be analysed with the combination of the cross-case pattern matching (see 5.2 until 5.8) and the case-by-case analysis of the dynamics of entrepreneurial activity (see 5.9).

In the investigated case studies of midsize companies the entrepreneurial function appears to involve several roles that are also fulfilled by several different people. First of all, the managing directors of the companies seem to contribute to the entrepreneurial function with the role of the decision maker and financial risk taker. These people are described to be courageous, self-confident, assertive and self-reflected people (see 5.8) and motivated by their own role of responsibilities and leadership (see 5.7). However, in some companies the owner is not necessarily one of the managing directors. That means the managing directors engage in decision making about innovative ideas but the final financial decision and therefore the financial risk taking happens in consultation with

the owner of the company. Decision making and risk taking can therefore split up in midsized companies.

In four case studies the role of the promotor for innovative ideas emerged and was allocated to be fulfilled by managing directors. In this context innovative ideas are created by others but need support and power to be further communicated, discussed and implemented. This role refers to the personal characteristics of vitality and energy, vision, experience and assertiveness in order to drive these ideas (see 5.7 and 5.8).

Further, the role of the idea generator also seems to involve several people. In all case studies team leaders of the technological or manufacturing part of the company appear to contribute to the entrepreneurial function by generating innovative technological ideas. These people can be described as technical experts of the companies with passion for their job (see 5.8). Additionally, people with responsibilities in the corporate function of sales and marketing appear to contribute as idea generators. People from sales and marketing actively engage in customer contacts, have a sense for market trends and also for market niches, and therefore are able to come up with innovative product or service ideas. They are described to be important networkers and contact persons. Both functions seem to collaborate with each other. The collaboration between these functions appears to be crucial for idea generation in midsized companies.

Furthermore, the role of the integrator or convincer could be identified. In all midsized companies at least one person on management or team leader level was involved in supporting innovative ideas by communicating about them in the company with many employees and by convincing and motivating people that this idea and the resulting possible change will be successful for the company. These people mainly serve as an internal contact person to further drive ideas on all hierarchical levels because in order to develop and produce innovative ideas in the long run all people are needed to support them.

This overview of entrepreneurial roles and their interconnection has another background. The splitting of the entrepreneurial function across several roles and people also refers to the fact that in midsized companies there is not only one managing director but mainly a team of two to five people with shared responsibilities. This seems to have an influence on the entrepreneurial roles and their differentiation as well.

5.11 Summary and outlook

This chapter outlined the findings about the entrepreneurial function in mid-sized companies. It becomes clear that the mid-sized companies have more people with responsibility for the company that also seem to be involved in the entrepreneurial function. Every company has its own organisational structure and sometimes these are historically grown concepts that emerged in the organisation over the years. However, it appears that the managing directors do not play the central key figure of the entrepreneurial function anymore. Other people contribute in different roles to the entrepreneurial function as well. Without these several contributions to the entrepreneurial function innovation would not be possible in these companies. This is the first hint to a cooperatively carried out entrepreneurial function as promoter, idea generators and integrator are involved as shown in subsection 5.10. The following chapter 6 shows the results in large companies where the concept of cooperation is even more important for the entrepreneurial function.

Chapter 6. Findings In Large Companies

6.1 Introduction

Following the structural analogy of chapters 4 and 5 this chapter also presents the seven main themes for the large companies under study. Subsection 6.9 will describe the dynamics of entrepreneurial activities and subsection 6.10 will highlight the identified entrepreneurial roles. In large companies the diversity in organisational structures is important to be analysed in this context as the entrepreneurial function appears to be more and more separated.

6.2 Corporate functions

At the beginning the first theme deals with the importance of different corporate functions for the entrepreneurial function. The interview question of whether there are corporate functions with a special significance for the entrepreneurial function brought up five propositions in the large companies. First of all, people from the department of sales and marketing seem to play an important role (P-08b)⁸ as six case studies show (CS-15, CS-16, CS-17, CS-18, CS-19, CS-21). It was further stated in two case studies (CS-15, CS-18) that people with direct customer contact seem to be involved in entrepreneurial activity (P-07c). Relating to the previous finding of the importance of sales and marketing the following statement brings together two results.

‘Die Spanne zwischen Vertrieb und Produktentwicklung ist groß und man muss beide Welten kennen. Aber genau dort entsteht das Interessante, aber das ist knapp. Bei uns erbringen Vertrieb und Produktentwicklung die Integrationsleistung für Innovationen.‘

⁸ See Appendix E: Results matrices of key themes in large companies (detailed evidence of propositions, according case studies and interviews).

(Translation: ‘The margin between sales and product development is wide and it is important to know both worlds. Yet, this is exactly where the interesting things happen, however scarce this may be. In our company sales and product development deliver the integrating performance.’

(Director strategic marketing & business development, CS-18 / I-62)

This statement relates the function of sales and marketing with product development. The sales manager of case study CS-18 supported this proposition with a story. The company develops and produces innovative specialty labels and self-adhesive marking solutions for the medical and pharmaceutical industries. He described his job with exactly this margin between sales and product development. In order to get new ideas and hear about problems within hospitals he speaks to many doctors and nurses and asks what kind of problems they face in their daily work. One problem they face especially in case of emergencies is that the hanger of infusion bottles often gets caught or takes too much time to position correctly. That is how the sales manager got back to the company and developed an integrated hanging device that is included in the label of the bottle. In order to come up with an idea like that he emphasised that the customer contact on the one hand and the technological understanding of what the company actually can produce is of great importance.

On a comparable basis, the department of technical development was emphasised as well (P-10b) within three case studies (CS-16, CS-20, CS-23) but not in relation to sales and marketing. In this context it has to be clarified that not all of the large company cases have a separate department of research and development. Moreover, the people who get involved in entrepreneurial activities in case study CS-16 and CS-20 react primarily to customer requests or customer problems. Entrepreneurial activity, however, as defined in chapter 2, is about discovering and exploiting opportunities. Therefore, this kind of entrepreneurial activity in these two cases is more about exploiting opportunities than about making new discoveries. The technical development in case study CS-23 covers both challenges as they actively come up with new technological developments without responding to only problematic situations on the market.

Furthermore, the role of specially gifted technicians who are enthusiastic about their work seems to be important for the entrepreneurial function in large companies (P-09c). This proposition was stated in three case studies (CS-16, CS-20, CS-24).

In case study CS-16, a tool construction company dealing with injection molding technologies, two specially gifted technicians were emphasised. These two people were described as technical experts who come up with creative technological ideas and who try and experiment a lot in order to create something new.

In case study CS-20, an energy providing company, and in case study CS-24, a company in the aviation industry, a very similar picture came up with only very few technical experts who creatively combine different aspects and therefore create new ideas using their technological expertise.

Lastly, it could be evaluated that the corporate function of finance and controlling seems to be a supporting function but without entrepreneurial activity (P-11b). All eleven large company case studies support this proposition. Most of them explained that finance and controlling are important to track innovative ideas and projects that are set up to realise these ideas but there are no innovative ideas that come directly from people in finance or controlling themselves.

6.3 Organisational hierarchies

The second main theme refers to the findings about entrepreneurial activity when different organisational hierarchies are concerned. When organisational hierarchies in large companies are concerned, the findings present a differentiated picture. In 26 interviews in nine case studies it was stated that entrepreneurial activity mostly happens on management or team leader level (P-02c). The remaining two cases where this finding was not emphasised explicitly during the interviews, the investigation of the company still shows that entrepreneurial activity is mainly present on management or team leader level because the people who are entrepreneurially active are themselves managers or team leaders.

Another proposition that people with responsibility for the company tend to be more involved in entrepreneurial activity (P-03c) was only supported in two case studies (CS-15, CS-17). The connection to responsibility seems to refer to higher management or leadership positions.

In contrast, 16 interviewees in seven case studies reported that different or even all hierarchical levels are involved in entrepreneurial activity (P-06). This finding shows that entrepreneurial activity in large companies seems to be spread across more or even all hierarchical levels. At this point it has to be noted that the investigated large companies differ in size from 350 employees in case study CS-14, 2000 people in case study CS-21, up to 7700 employees in case study CS-24. Whereas case study CS-14 might be able to run their business with an organisational structure including only one or two management levels at the most, it seems to be obvious that a large company such as case study CS-24 with 7700 people is organised with up to five or even six management levels. That means the findings indicate that not only managing directors or team leaders are involved but also people with no leadership responsibility at all, especially within the very large organisations. Two interviewees, for instance, explained that there are innovative people all across the company (CS-14, CS-15) and that it is not only a matter of hierarchical level. This further supports the outlined proposition.

Moreover, in the context of different organisational hierarchies interviewees emphasised the importance of networking in cross-functional teams (P-05b). This proposition refers to the idea of an entrepreneurial function that is carried out cooperatively and therefore does not only refer to organisational hierarchies but also to different corporate functions. The six companies (CS-14, CS-15, CS-16, CS-18, CS-19, CS-24) who outlined collaboration across disciplines and hierarchies, however, do not have an institutionalised innovation team. The interviewees described this kind of networking in the context of entrepreneurial activities more as some kind of spontaneous sharing of ideas rather than an institutionalised regular meeting of a determined group of people.

6.4 Activities of entrepreneurs

The third theme is concerned with the activities of the entrepreneurs themselves. The investigation at large companies generated twelve main activities that were assigned to be carried out by entrepreneurs.

a. Market orientation:

In seven case studies it was emphasised by fifteen interviewees that an entrepreneur monitors the market and listens to customers (P-24c). This means that customer orientation seems to be very important for the entrepreneurial function.

In the context of market orientation it was further stated in three case studies (CS-16, CS-19, CS-24) that entrepreneurial activity includes recognising possibilities and deciding on the right projects (P-26). Two case studies (CS-16, CS-18) highlighted that balancing existing products and new innovation with future technologies (P-25b) is an important entrepreneurial activity which also demonstrates a focus on market and customer orientation. Five case studies outlined that, in order to be truly market-oriented, an entrepreneur needs to have sufficient freedom to try out new ideas (P-27) which, therefore, appears to be a precondition for this activity.

An example for this market orientation is provided in case study CS-22, a large company in the agriculture, building and energy sector. The product and regional manager of the agricultural business unit (I-73a) invented and developed a web-based auction platform for used agricultural machines. The reason for that is to decrease depreciation as they also deal with used machines to further push the purchasing of new machines. This is an example for a market-oriented entrepreneurial activity because it does not only save money and generate new sales. It also helps farmers to get new agricultural machines by crediting the old ones that can be sold via the web-based auction platform.

b. Taking action:

Nineteen interview partners in eight case studies pointed out that an entrepreneur is active and tackles issues (P-28c). This proposition can further be related to the activity of seeing chances and putting them into action (P-29b) as well as being passionate about these ideas (P-30). Both assertions were pointed out in three case studies.

c. Communication and networking:

Another entrepreneurial activity concerns the issue of communicating and explaining innovative ideas (P-23b) which was highlighted in eight case studies. Additionally, in three case studies nine interviewees stated that networking and interacting with interdisciplinary teams is important (P-22b, P-41b). The aspect of networking itself was

further emphasised in four case studies by referring to the importance of knowing the right people and connecting with them (P-37).

The head of portal development in case study CS-23, a large communication company with around 5000 people, explained that if he has a new idea and wants to exploit the opportunity, he talks a lot about his idea with colleagues and superiors. He further explained that some people tend to keep their ideas secret until the final management decision. He emphasises that sharing innovative ideas and trying to quickly turn them into realistic projects requires efficient communication and networking.

d. Risks:

According to the opinion of eight interviewees in seven large company case studies an entrepreneur is willing to take risks (P-16c). Two of these case studies added that believing in the ideas and projects is important (P-18b). In the context of risks two interview partners of one company (CS-15) mentioned that it sometimes is important to ignore existing rules and regulations in order to progress ideas (P-17c). Within a corporate setting this can also be seen as a risky activity.

e. Dealing with people:

In five case studies it was highlighted that making room for other people and their ideas is important for entrepreneurial activity (P-21). More generally, this proposition refers to the aspect of dealing with people in the organisational setting. In this context it was stated that guiding and training people for their work (P-19c), as pointed out in four case studies, and motivating them (P-20b), which was brought up in two case studies, is also seen to be important for entrepreneurial activity.

f. Creating a culture without accusation:

Seven case studies underlined the activity of learning from failures and of creating a culture without accusation when innovative ideas are concerned (P-38c). In two case studies (CS-18, CS-21) it was further emphasised not to give up if an innovative idea turns out to be a flop (P-40). This activity seems to be related to the general organisational culture. An innovation culture was emphasised in two case studies and the interview partners pointed out that for a culture of innovation to take root, management has to lead by example (P-39b).

Case study CS-16 serves as a negative example of this activity. The company develops and produces tool construction and plastic molding technologies and is a family-owned and managed business. Over the years all decisions were made by the founder and owner of the company. The company grew rapidly and another management level had to be set up to delegate certain responsibilities. However, responsibilities were not delegated in reality. New ideas and innovative projects were only accepted if the founder approved of them. Therefore, self-motivated entrepreneurial activity was not possible for the management team or other employees. When the founder finally retired, the culture and activities of employees were characterized by a lack of independence. The new managing director, who also has a sales background as in CS-11, expected innovative activity and the engagement in entrepreneurial activity. However, as the founder of the company kept meddling with daily decisions, this company faced major problems in terms of developing a welcoming culture for new ideas with room to try out new ideas. Creating a culture without accusation in the context of letting people try out their own ideas even though some of them will not turn out to be the best, seems to be the most important part here (I-02a, I-04a, I-06a, I-08, I-10, I-11, I-13, I-12).

g. Challenge:

Moreover, the activity of actively challenging the status quo, trying to allow different thoughts and therefore being open for new things was stressed by fourteen interviewees in six case studies (P-36) to be important for entrepreneurial activity. This is what the new managing directors of case study CS-16 in the example outlined above tried to do but did not have a chance because the founder blocked new developments in this area.

h. Awareness and personality:

The next proposition concerns the awareness of an entrepreneurial active person. Five case studies mentioned that being personally aware and concerned about new possibilities and ideas is important for entrepreneurial activity (P-33). This also refers to the aspect of an entrepreneurial personality and the attitude and self-conception a person brings along into the company (P-33). In addition to that, two interviewees in one case study highlighted that it is important to see how new ideas emerge within the corporation and to be aware of whether the company invents new things or just reacts to customer problems (P-34).

i. Decisions:

Furthermore, in five large company case studies it was stated that decision-making is of special significance for the entrepreneurial function (P-12c). The director of strategic marketing and business development of one company explained it as follows.

*‘Wir müssen uns anschauen, was wir haben und was wir nicht haben.
Und dann entscheiden wir, was wir glauben, also per
Bauchentscheidung.’*

(Translation: ‘We need to look at what we have and what we do not have. And then we decide what we believe. It’s a gut feeling decision.’)

(Director strategic marketing & business development, CS-18 / I-62)

This statement shows that decision-making in the context of innovative ideas appears to be a difficult but also a very important activity.

j. Point of view:

In addition to that, four case studies mentioned that looking at things with a more holistic point of view and a global vision is important for entrepreneurial activity. This also seems to include to free one’s mind of existing and entrenched concepts (P-31b).

k. Responsibility:

Only one interview partner (CS-19 / I-55) regarded the activity of delegating responsibility to other people to be of important nature for the entrepreneurial function (P-14c). This was stated by a managing director of a printing and publishing company with approximately 1200 employees. He further outlined that responsibility is one of the first steps to get engaged into entrepreneurial activities (I-55).

l. Finance:

Eight case studies explained that it is important to have the financial situation in mind and to budget the available resources (P-35b). However, it was stated that this is an important administrative activity where innovative ideas are concerned but not in itself of entrepreneurial nature.

6.5 Personal predisposition and learning

The fourth theme of this investigation refers to the question whether a person just has entrepreneurial spirit as a personal predisposition or if it is something a person can learn. The opinions about the question whether entrepreneurial spirit is something a person rather has or can learn are divided within the large company case studies. Twenty-six interviewed people in ten case studies stated that entrepreneurial spirit is something a person simply has but it is nothing to be learned (P-56c).

The head of strategic marketing and business development in case study CS-18, for instance, stated that entrepreneurial spirit is interrelated with curiosity (I-62) of a person and according to him this is something you either have or do not have. This statement therefore supports the proposition that entrepreneurial spirit is a personal predisposition. Only three interviewees in three case studies hold the opinion that entrepreneurial spirit can be learned (P-57). However, in four case studies it was assumed that a person needs to have entrepreneurial spirit as some kind of precondition but at the same time it can be learned at least partly (P-58c).

6.6 Intensities and concentration of entrepreneurial activity

The fifth main theme refers to the aspect of different intensities of entrepreneurial activity. Within the interviews in large companies seven case studies support the proposition that entrepreneurial activity happens in different intensities across the organisation (P-77c). Only three people of one case study (CS-24) hold the opinion that there are no different intensities of entrepreneurial activity and that people just act entrepreneurial or not (P-78b).

Personal affinity:

The question of whether personal affinity towards liberties or guidelines matters, also resulted in differentiated answers. Nineteen interview partners in nine case studies stated that personal affinity matters because people with an affinity to liberties appear to be more entrepreneurial active than people with an affinity to guidelines (P-79c). However, in four case studies nine people emphasised that entrepreneurial activity is possible with both affinities (P-80). This would mean that a personal affinity towards liberties or guidelines is not related to entrepreneurial activity at all.

6.7 Motivation of entrepreneurs

The sixth main theme of this research project deals with the motivation of entrepreneurial active people. Six motivation factors could be identified in the large company case studies and are outlined in the following according to their descending appearance in the interviews.

a. Vitality:

In nine of the eleven investigated case studies it was pointed out that motivation for entrepreneurial activity comes from personal vitality and energy (P-48c). Furthermore, in eight case studies it was emphasised that people who have the feeling that they can change something, that they are challenged with many different problems and that they can also demonstrate their ability to deal with this circumstances are entrepreneurially motivated (P-50c). These propositions generally refer to the aspect of individual vitality. In addition to that, the interviews show that rejoicing in ones job motivates entrepreneurial activity as well (P-49c). This was stated in six case studies. Only in two companies (CS-17, CS-19) this motivation was related with a personal passion (P-51c).

b. Acknowledgement:

The motivation factor of acknowledgement was highlighted in nine case studies. Interviewees stated that being recognised socially, for work success and personal achievements is a motivation factor for entrepreneurial activity (P-46c). One interview partner further explained that being recognised as natural authority is important not due to exercising power (P-47b).

c. Responsibility:

Moreover, the joy in taking over personal responsibility was evaluated to be motivating entrepreneurial activity (P-42c) in seven case studies. One managing director (CS-14) further described the aspect of responsibility in the context of personal philosophy and attitude towards work (P-43c) as well as being conscious about the responsibilities of continuing a family business (P-45b). Another managing director (CS-19) related this proposition with the personal responsibility and will to help (P-44b) which seems to motivate entrepreneurial activity as well.

d. Vision and individual fulfilment:

Five case studies emphasised that motivation for entrepreneurial activity is related to a personal vision (P-52c). Additionally, in three case studies it was stated that individual fulfilment also seems to play an important motivating role in this context (P-53c).

e. Trust and believe:

Furthermore, in five case studies the aspect of trusting people, giving them space to try out new things and believing in them seem to play an important motivating role for entrepreneurial activity (P-54b).

f. Incentives:

Finally, monetary incentives were evaluated to be motivating entrepreneurial activity as well (P-55c). This proposition was supported in four large company case studies.

6.8 Personality, characteristics and capabilities of entrepreneurs

In analogy to the previous finding structure the seventh theme involves the issues of personality, characteristics and capabilities of entrepreneurial active people. The analysis of the large company case studies brought up nine aspects that appear to be important for an entrepreneur.

a. Assertiveness:

The most mentioned characteristic of entrepreneurial active people was assertiveness (P-59c). Twenty interview partners in ten case studies emphasised the importance of knowing what you want and of having an assertive personality.

b. Mindset and upbringing:

In eight cases it was pointed out that acting entrepreneurially is a question of personal mindset and general attitude (P-61c). Six of these case studies further underlined the influence of a person's upbringing and education (P-62c).

c. Courage:

Furthermore, six interviewees of six different case studies stated that an entrepreneur needs to have the courage to tackle something (P-60c). This refers to the individual active character of an entrepreneur.

d. Public image and reflection:

In five cases it was also mentioned that an entrepreneurial active person is aware of the own impact on others which is comparable to a public image of the entrepreneurial person (P-67b). A related aspect came up in three case studies (CS-15, CS-16, CS-21) where self-reflection was evaluated to be important (P-66c). Therefore, it seems to play an important role to reflect the own person and others on the one hand, and to accept strengths and weaknesses as well as personal limits on the other hand.

e. Confidence and robustness:

The aspect of self-confidence came up in three case studies. It was explained that an entrepreneur needs to have self-confidence and charisma for the entrepreneurial activity (P-63c). One head of development (CS-15) further outlined that an entrepreneurial personality needs to have a robust character in order to overcome possible setbacks within the entrepreneurial process (P-64c).

f. Passion:

Another characteristic that was mentioned in three case studies is being passionate about the job (P-65c). This refers to the idea that an entrepreneurial personality includes individual passion into work life.

g. Age:

Even though this question was not asked specifically during the interviews it was stated in three case studies that entrepreneurial activity does not depend on a person's age (P-69). This assertion refers to the idea that young people are automatically more innovative than older persons.

h. Experience:

One managing director (CS-24) stated that entrepreneurial activity depends on the experience of a person (P-68b). He explained that the more professional experience a person has, the more a person engages in entrepreneurial activity.

i. *Environment and culture:*

Furthermore, in all large company cases it was emphasised how important it is to create an open culture that welcomes new ideas (P-70c). This proposition refers to the respective environment and culture of an organisation.

6.9 Case reports of entrepreneurial dynamics

The previously outlined detailed results of the main themes shall now be supplemented with the description of the dynamics of entrepreneurial activities in large companies. Therefore, this subsection presents the analysis of the ten case studies of larger companies to provide a more case based picture of the entrepreneurial function.⁹

6.9.1 Case study CS-14

Case Study	Industry	Employees	Sales volume
CS-14	Building technologies	350	n.a.

Data collection:

In this company two personal interviews with the managing directors were conducted and analysed as primary data. Furthermore, the managing directors provided internal company information about the organisational structure, responsibilities, and the human resource strategy. The company website offered background information about the historical development and business areas of the company. This information was used for the secondary data analysis in this research project.

Company background information:

This case study concerns a family-owned and managed company in the building technologies industry founded in 1903. The company started as small family business and provided electrical lighting systems. Over the years, the business expanded its portfolio with gas and water installations, central heating systems, ventilation facility,

⁹ Detailed case reports of all large company case studies can be found in Appendix H.

electronic devices and lighting equipment. In 1985 the current generation took over the management of the company with 130 employees at that time. With growing business segments the company further expanded. Today, the company has 470 employees in five subsidiaries in Germany, Belgium and Poland. The product and service portfolio of the company is clustered according to seven business areas. These include electrical engineering, utility engineering, constructional steelwork, building technologies, solar technologies, computer-aided designs, and security systems.

Organisational structure, responsibilities and interview partner:

The company in case study CS-14 has more than one location but 350 employees are based in the headquarter location in Germany which is the focus of this investigation. Around 20% of them work in administration and leadership responsibilities. The organisation is structured with three leadership levels. The first management level consists of the two managing directors and owners of the company. One has the responsibility for the technological part, production, and logistics, and the other managing director is responsible for finance, human resource development, and sales and marketing. The second management level refers to the leaders of the four business units: finance and accounting, human resources, storage and logistics, and technology and production. The corporate function of sales and marketing is led by one of the managing directors but there is no further team for it in this company. This situation is related to the family background. The two managing directors have two sons and both of them are about to finish their studies and start in the company. One of them specialises in business administration, sales and marketing, and human resources. During the studies he also worked for the family company especially in the business area of sales and marketing in cooperation with his mother and responsible managing director. The third management level concerns the project team leaders within these business units. Around 230 employees directly work as craftsmen within the different projects on site at the customers. For this investigation two interviews were conducted with the managing directors of the company.

Dynamics of entrepreneurial activity:

In this case study the entrepreneurial function appears to be centralised at the two managing directors of the company. Due to their current growth situation a lot of human resource topics seem to dominate entrepreneurial activity. This shows the boundaries of

the case study as the current business situation appears to influence the entrepreneurial action within the organisation.

It seems that there is not a large network of entrepreneurial active people in the company. From the second management level only two responsible leaders for technological developments seem to be active in this context. Both of them seem to think with a broad personal mindset and horizon and come up with innovative ideas.

These dynamics of entrepreneurial activity need to be seen in the light of the historical development of the company. The managing directors appear to realise that there is a lot of potential for entrepreneurial action from other people in their company but due to the strict hierarchical structures this potential cannot be exploited so far. However, the role of one managing director in the context of human resource management can be described as networking, integrating and motivating role for entrepreneurial active people within the company. Both of them share the decision making responsibility as well as the financial risks of the company.

6.9.2 Case study CS-15

Case Study	Industry	Employees	Sales volume
CS-15	Automotive engineering	400	n.a.

Data collection:

In the company of case study CS-15 ten interviews were conducted in person and serve as primary data for analysis. The managing director of the company arranged interviews with all department heads of the location. Therefore, the responsible department heads of process management, electronic engineering services, construction, research and development, testing, vehicle safety, and computer simulation as well as the managing and regional director himself were interviewed.

The company website offered background information about the history of the company and general business areas. Furthermore, an internal company presentation was made available by the interview partners with information about the organisational structure, responsibilities and the embedding of the company within the holding group. This information belongs to the secondary data that was taken into account for the analysis of this case study.

Company background information:

This case study CS-15 concerns a large company in the automotive engineering industry that was founded in 1969. At the beginning the firm concentrated on the development of automotive vehicles and production plants as core business. In the course of the continuing globalisation the company expanded its product portfolio and established worldwide locations in Germany, Spain, France, China, and Japan. Today, the whole company group employs 6660 people worldwide.

This investigation focuses on one company subsidiary in Germany with 400 employees. The company provides product development, product solutions, as well as plant engineering and construction for the automotive industry. The large premium automotive producer on-site is the main customer for these engineering services.

Organisational structure and responsibilities:

The company location with their 400 employees is organised in a complex matrix structure and partly shares corporate functions with the headquarter. The core business is structured in five business areas: construction (80 employees), electrical engineering (40 employees), project management (40 employees), simulation (70 employees), and the construction of models (60 employees). The remaining employees refer to leadership teams, administration, trainees, and interns. The corporate functions of human resources and finance are partly in responsibility of the managing director and partly supported by the headquarter of the group. Due to the location next to the main customer the sales and marketing function is very limited and is also in the responsibility of the managing director.

The organisational hierarchy is structured in three leadership levels. The first level concerns the regional management and managing director. The second level refers to the business area managers and the third level concerns the team and project leaders.

For this research project ten interviews were conducted. The responsible department heads of process management, electronic engineering services, construction, research and development, testing, vehicle safety, and computer simulation as well as the managing and regional director himself were interviewed.

Dynamics of entrepreneurial activity:

In this case study CS-15 it seems that entrepreneurial activity is centralised on people with leadership responsibility, especially team and project leaders as well as the managing regional director. These people in leadership responsibility appear to be

important for the entrepreneurial function not only because of their professional knowledge but also because of their integrating and networking activities across the different project teams.

There is another concentration on the function of technological development that appears to play a key role for the entrepreneurial function. Technological experts with their innovative ideas in different research projects seem to be very important in this context. The corporate functions of human resource management and finance appear to be more of supportive nature but without direct contribution to innovative ideas.

However, the entrepreneurial activity has to be understood in the context of the company structure and their product portfolio. 80% of the team members and workers are located in projects at the customer on-site and not in the company location itself. That is why these workers are very much focused on the customer most of their time, so there is not much room for entrepreneurial activity for the company itself. The focus of team members and workers therefore concentrates on customer needs. This further explains the situation that the function of sales and marketing is not existent due to the main customer on-site. Nevertheless, it can be stated that sales and marketing activities still appear to be important because developers have direct customer contact in several projects and therewith take up customer wishes, trends and new ideas. The sales and marketing committee further discusses these ideas and appears to play an important role in the entrepreneurial function.

6.9.3 Case study CS-16

Case Study	Industry	Employees	Sales volume
CS-16	Tool construction and moulding technology	690	n.a.

Data collection:

In this case study eighteen interviews were conducted in person and via telephone. The relatively large number of interviews in this case study compared to the other investigated companies results from the background as pilot study. After the semi-structured questionnaire for the interviews was designed the first interviews in this company served as pilot study to test and improve the interview guideline for the main

field work. Therefore, there are more personal interviews that were conducted after the pilot study as well as telephone interviews for the validation of research results. In this company it was possible to interview all department heads of the different corporate functions, the management team and the founder and owner of the organisation. The management team consists of the chief executive officer (CEO) and the chief financial officer (CFO). Nine further managers were interviewed with responsibility for the following departments: legal, finance and controlling, accounting, purchasing, human resources, quality and environmental affairs, production, industrial engineering, and research and development. Another interview was conducted with an external consultant for quality management who advises the company in the context of certification requirements for many years. These personal and telephone interviews were analysed as primary data.

Additionally, the interview partner provided internal information about the organisational structure, responsibilities and processes of the company. The official website of the organisation further offered information about the historical background of the firm. This information was analysed as secondary data for this case study CS-16.

Company background information:

This case study concerns a family owned business in the tool construction and moulding technology industry. Founded in 1966, the company started with simple tool construction. Today, the firm has five subsidiaries in Germany, the United Kingdom, the USA, Switzerland, and China. The offered moulding technology products mainly serve customers in the automotive industry but also apply to household equipment, sanitary, electronics, electrical engineering, and medical technology. The offered products for the automotive industry as main customer include climate control sensors, window regulators, micro switches, and accelerator pedal modules. The investigation refers to the headquarter and main plant of the firm with 690 employees.

Organisational structure, responsibilities and interview partner:

The company with its 690 employees operates with three management levels. The first level is the management team that consists of the chief executive officer and the chief financial officer. The founder and owner of the company officially stepped back and delegated the management responsibility to these two managing directors but it appears that in many ways he is still involved in decision making processes.

The second management level concerns all nine department heads of the corporate functions of production, industrial engineering, quality management and environmental affairs, finance and controlling, accounting, human resources, legal, and research and development. The chief executive officer has a background in sales and is therefore also responsible for the department of sales and marketing.

The third management level mainly refers to the team leaders in production. Around 58% of the company's employees work in the department of production.

For this investigation it was possible to interview all department heads of the different corporate functions, the management team and the founder and owner of the organisation. Another interview was conducted with an external consultant for quality management who advises the company in the context of certification requirements for many years.

Dynamics of entrepreneurial activity:

The dynamics of entrepreneurial activity in this case study CS-16 need to be understood in the background of the current company situation. The founder and owner of the firm tried to retire from active business and pass over responsibility to his son and daughter. Due to internal problems this succession process did not work out. After that, the founder hired an external managing director to take over business management. The problems of delegating responsibility from the founder and owner continued as he was not able to let go but fired the managing director again. This happened with two external managing directors one after another. This process took around five years and brought a lot of change and insecurity for the whole company and all of its employees. The current CEO is an external managing director as well but the process of taking over business was bound with the obligation that the founder is not active in business anymore and moves his desk out of the company. It seems that this time the new CEO has the possibility to establish a culture with changed responsibilities.

However, in the light of this history the founder was always seen as central figure of the whole company where all responsibility and decisions are centralised. The interviews show that the current situation is characterised with a lot of insecurities concerning the new responsibilities and people are simply not used to making decisions without the founder. The delegation of responsibility therefore can be understood as key factor for enhancing entrepreneurial power within this company.

The founder mostly concentrated on technological issues of customer requirements. Today, the new CEO brings in a broader view for technological trends on the market,

for customer trends and potential new business ideas. That is why today the entrepreneurial function appears to slightly split up between the corporate function of sales and marketing, technological development and the production with specially gifted technicians in the realisation process of innovative ideas. The new CEO can be described as new decision maker who actively emphasises cross-functional collaboration and networking in the innovation process of the company. In financial terms the founder and owner still remains as risk taker and also appears to have a right of co-determination when it comes to larger investments.

Furthermore, the head of human resource management can be described to contribute to the entrepreneurial function with his role as integrating and motivating connector to the employees. This kind of constant internal networking appears to have a positive influence on the employees and motivates them to engage in entrepreneurial activity in this case study.

6.9.4 Case study CS-17

Case Study	Industry	Employees	Sales volume
CS-17	Agricultural machines	735	n.a.

Data collection:

In this case study three personal and one telephone interview were conducted and analysed as primary data. Two members of the management team as well as one sales manager agreed to participate in this research project as interview partner.

Furthermore, the company website and internal information about the organisational structure of the company were available to be analysed as secondary data in this investigation.

Company background information:

This case study concerns a family owned and managed company in the industry of agricultural technology. It was founded in 1984 and back then produced a few sowing machines only. Over the years, the in-house developed product portfolio expanded with transfer wagons, liquid manure vehicles, and cultivators. In 1998 the company expanded with the foundation of a subsidiary in France, 2000 in the USA, 2003 in the

Ukraine, and 2011 in the United Kingdom. In 2011 the company further expanded in the business area of plant protection and build a new logistics centre in Germany. Today, the company provides products and services in five main business areas: cultivation, sowing technology, plant protection, transfer wagons, and agricultural components. During the last thirty years the firm grew to a company with 735 employees.

Organisational structure, responsibilities and interview partner:

This case study concerns a company with 735 people and is organised in a very flat hierarchy with only two management levels. The first management level concerns the management team that consists of four people: the founder of the company and his brother, who are the two official managing directors and share responsibilities for technological development, production and sales, the marketing and human resource director, who is the wife of the company founder, and a finance director. The second management level directly concerns team leaders in production and sales regions. This relatively flat hierarchy shows that on the one hand there is a way for fast decision making because the management team is involved in many different processes as the company grew so rapidly within the last twenty years. On the other hand, the team leaders as well as the rest of the employees seem to have much freedom of action and responsibility on their own so the management team does not have to approve every single decision even though they are involved in many details of the day-to-day business. For the current research project two members of the management team as well as one sales manager participated as interview partner.

Dynamics of entrepreneurial activity:

The entrepreneurial activity appears to be mainly centralised within the two managing directors who engage in many details of the company's technological development and production. Both of them are also responsible for parts of the sales function and have customer contacts all over the world. They seem to pick up ideas from customers' problem stories and come up with innovative solutions with their development and production teams. In this development and production team there are four experts in technological matters. They can be described as the technology experts of the company. The two managing directors themselves have much expertise with agricultural machines and additionally a deep understanding of the technologies behind it. This background

appears to enable them to combine different knowledge fields. In this regard they can be described as passionate interface collaborators and idea generators.

However, due to the fast firm growth there is not much structure and defined processes that could help other people to further engage in entrepreneurial activities. The problem of quick changes in decisions from the management team also appears to contribute to the centralisation of the entrepreneurial function towards the management team only. Both managing directors seem to play the central role as decision maker and risk taker. In order to develop innovative technologies within their agricultural machines in detail they need to collaborate with the team of technological cracks. These roles appear to mainly contribute to the entrepreneurial function of this case study.

6.9.5 Case study CS-18

Case Study	Industry	Employees	Sales volume
CS-18	Intelligent labels	750	125 million Euro (2012)

Data collection:

Primary data in case study CS-18 consists of two personal interviews that were conducted with the director of strategic marketing and business development and with the head of sales of the company.

Additionally, secondary data was provided by the company such as company reports with information about the organisational structure and strategic direction of the firm. The official company website further offered information about the historical development and business areas of the firm.

Company background information:

This case study concerns a family owned company with 750 employees. The company was founded in 1951 focussing on embossed seal stamps and labels. In the 1960's the company expanded its product portfolio with self-adhesive labels. Over the years the company grew steadily. Today, the firm is managed in third generation. The product portfolio expanded in different high-tech industry directions and focuses on the following eight core business areas: product and document protection, printed

electronics, labels, radio-frequency identification (RFID) products and systems, solutions for medical and pharmaceuticals, solutions for engineering industries, technology consultancy, system sales and services, as well as solutions for service organisations and companies. In 2012 the company generated a sales volume of 125 million Euros.

Organisational structure, responsibilities and interview partner:

This company is structured as an umbrella organisation. 750 employees work in eight core business areas of product and document protection, printed electronics, labels, radio-frequency identification (RFID) products and systems, solutions for medical and pharmaceuticals, solutions for engineering industries, technology consultancy, system sales and services, as well as solutions for service organisations and companies. There is a central department for research and development that engages in new product development in collaboration with the respective business areas.

The organisational structure works with three leadership levels: the managing directors of the owning family on the first level, the extended management team with the head of strategic marketing and business development, and the head of sales, on second level, and the further team and group leaders in the productive business areas on third level. The central corporate functions of research and development as well as finance are in the responsibility of the managing director on first management level.

For the current investigation two personal interviews that were conducted with the director of strategic marketing and business development and with the head of sales of the company.

Dynamics of entrepreneurial activity:

The company currently appears to only innovate within the core business areas. The diversification into new markets seems to be still very limited and without a lot of risk taking attitude from the owner and managers. However, it seems to be clear that the integration of sales and product development activities are the key entrepreneurial success factor of this company. In this context it appears that two people play a central role for the entrepreneurial function in this case study. On the one hand this refers to the strategic sales manager who actively communicates with customers about their current problems. He can be described as one of the idea generators by actively engaging in research of customer needs. On the other hand there is the head of product development with a clear understanding of what the company technology is able to produce. He

engages in extensive experimenting and collaborates with the team of researcher and developers when a new idea has emerged. This head of sales used to be a member of the management team a few years ago but was asked to give up leadership responsibility and get back to invent innovative product ideas. It is known in the company that he has a sense for the market and for what is possible and what is not in product development and production.

Both of these described persons have many years of company experience in different areas. This collaboration of market research, sensitivity concerning customer problems, and experimentation with new products appears to perform the innovative power of this company. People with knowledge and experience in both of these worlds appear to contribute to the entrepreneurial function in this case study. The roles of the final decision maker and financial risk taker remain in the management team with the owners of the firm. But they do not appear to be involved in any kind of innovative idea generation which leads to the fact that in this case study entrepreneurial activity does not seem to be related to the highest management level only.

6.9.6 Case study CS-19

Case Study	Industry	Employees	Sales volume
CS-19	Publishing and printing	1200	n.a.

Data collection:

In this company primary and secondary data was analysed. Seven personal interviews were conducted with two managing directors and four department heads with responsibility for production, publishing, editing, research and development and IT. These interviews were analysed as primary data.

In addition to that, the company website provided information about the historical development of the organisation. The interview partner made further information about the organisational structure and responsibilities as well as strategic alignment and production processes available. This information was analysed as secondary data.

Company background information:

Case study CS-19 concerns a company in the media and printing industry. The firm was founded in 1945 and was organised as a holding company with a local newspaper and a printing company. Over the years a book store was established as well. After a company crisis in 2002 the organisation refocused on newspaper and media business only. Today, the holding company is structured with the following three business areas: publishing, sales and distribution, and trading. The publishing company includes six local newspaper editions and the local printing centre. Today, the company has 1200 permanent employees.

Organisational structure, responsibilities and interview partner:

The holding company with 1200 employees is organised in the three business areas of publishing, sales and distribution, and trading. Around 50% of the employees work in the area of sales and distribution as delivery agents in the six newspaper regions. The trading business area concerns the branch offices with around 90 people. The remaining employees work in the publishing sector with four key departments. Around 120 people are responsible for the editorial design of the six newspaper editions, 70 people work in the department of production and printing technology, 40 people deal with marketing and advertisement, and 15 people work in the online and IT department.

The leadership structure is organised in three levels. First of all, two managing directors share responsibility for the holding group. The second leadership level concerns the managing directors for the three business areas (publishing, sales and distribution, trading). Lastly, the third level concerns the four department heads of the publishing company.

For the current investigation seven personal interviews were conducted with two managing directors and four department heads with responsibility for production, publishing, editing, research and development and information technology.

Dynamics of entrepreneurial activity:

The dynamics of entrepreneurial activity in this case study need to be considered with regard to the company's organisational restructuring process over the past three years. Very strict hierarchies and complex organisational structures were removed and a flat hierarchical structure with more responsibility within the respective business areas was established. Therefore, decisions about new ideas and innovations can be discussed easier and more intense by collaborating with different corporate functions and by

including the expertise of different business areas. However, a big structural change like this appears to need time to be fruitful for the whole company and also for employees on all hierarchical levels.

The managing directors of the holding seem to be mainly involved in strategic and administrative tasks. When it comes to innovative ideas both of them have the responsibility of decision making and risk taking especially when financial investments and strategic new business development is concerned. Furthermore, it appears that both managing directors fulfil an integrating and motivating role for the employees and therewith also facilitate entrepreneurial activities.

Up to now the department heads on second and third leadership level seem to be the main contributors to the entrepreneurial function with regard to idea generation and new business development. Two responsible department heads of publishing actively engage in networking inside and outside the company. They communicate with potential customers and try to find out about their problems and therewith actively search for new business ideas. Both of them seem to play an important sales and marketing role with direct customer contact and market research and therewith contribute to the entrepreneurial function as idea generators.

Further, due to the extensive change in the whole media landscape over the last years the innovative power of this company seems to be in extending their business in other branches as well. This happens for instance by using the company infrastructure for new business models in the IT industry. The server room with highest security standards due to the building technology for instance is further used as cloud computing centre and back-up service for external companies. This IT service and consulting in controversial business areas, such as information security and data management for small and medium-sized companies, can be described as main innovative ideas of the company at the moment because large companies can easily delegate this issue to their own IT responsible people but in SMEs do not have that possibility. This idea came from the information technology expert of the company.

With regard of the current company situation it can be stated that the network of entrepreneurial active people in this case study appears to be in a developing mode where more and more ideas are communicated and more collaboration between the different functions and business areas take place.

6.9.7 Case study CS-20

Case Study	Industry	Employees	Sales volume
CS-20	Energy	1700	2,2 billion Euro (2012)

Data collection:

This case study analysis is based on primary data in terms of two interviews with the managing director and head of business development of the company. Secondary data was included in the analysis as well. This refers to information about the historical development of the organisation from the official company website and also internal information about the organisational structure, management and responsibilities provided by the interviewee.

Company background information:

This case study concerns a company in the energy industry that focuses on the business areas of electricity generation, power distribution, energy trading, and data communication. The company was found in 1901 and started with the construction of a hydro electrical power station. Over the years, the company expanded and established power supply systems, five other power stations based on water energy and transformer stations. In 2005 the company went through a restructuring process and is organised as a holding company up to today with 1700 employees.

The company has four main management levels. The first level consists of the management board with overall responsibility of the parent organisation, secondly the head of departments in the parent organisation, and after that the managing directors of the respective affiliated companies and the team leaders within these company units.

Organisational structure, responsibilities and interview partner:

A restructuring process in 2005 created a new organisational structure for the whole company and its 1700 employees. The parent corporation involves the management team and cross-departmental functions such as sales and marketing, business development, finance and controlling, and human resource management. Under this umbrella five affiliated companies are located. The first one concerns distribution grids with 120 employees, the second one provides technological services in the energy sector

with 596 employees, the third one offers consulting services for IT and customer care with 257 employees, the fourth company part concerns the electricity generation with 192 employees, and the last one of the five provides data management with wideband lines and 85 employees.

For this research project two interviews with the managing director and head of business development of the company were conducted.

Dynamics of entrepreneurial activity:

The interviews in this case study show that the company generally is more of administrating character but not very innovation friendly. People appear to be very concentrated on their own career path. Collaboration and communication about new ideas seems to be very limited. The management board of the parent organisation seems to be involved in discussing new business ideas but only with very limited risk taking and with a clear focus of preserving the status quo.

However, little entrepreneurial activity appears to take place in the department of sales and technological services. It seems that in this department the direct contact to customers gives input for new ideas for applications.

When the industrial context of this company is taken into consideration it appears that the energy revolution and the herewith upraising solar technology does not have affected the innovation capabilities of the company. The interviews show that entrepreneurial oriented people would have tried to exploit these business possibilities but there are very few people in the company who seem to be willing to take risks with new business ideas.

Furthermore, the case analysis shows that the managing directors also appear to engage in idea generation by using their external networks and contacts. It seems that the generation of innovative ideas happens in the management team, in the department of sales and technological services, and in the function of business development. The head of business development seems to take responsibility for bringing together different ideas. However, it appears that due to the restricted and entrenched attitude towards change, innovation and risk, very little innovative ideas make it through the stage of being an idea. The drive and implementation of these ideas would require more entrepreneurial activity that apparently is missing in this company. This situation also refers to the role of the final decision makers and risk takers in the management team that seems to be very reserved in this context. That further results in limited liberties for the head of business development to drive innovative ideas to implementation.

6.9.8 Case study CS-21

Case Study	Industry	Employees	Sales volume
CS-21	Organic baby food	1700	500 million Euro (2012)

Data collection:

In this case study two personal interviews with the managing directors were conducted and analysed as primary data. One of them is the founder of the family-owned business and about to hand over business to the next family generation. His son is the second interviewee and responsible for sales and marketing, and for parts of the production.

In addition to that background information about the company's strategic orientation, its organisational structure and core business areas could be analysed as secondary data from internal company documents and the official website.

Company background information:

Case study CS-21 concerns a company in the organic food industry focus on baby food. The company was found in 1932 as a confectionary shop with a café and has a long tradition as family-owned and managed company. In the 1950s the company started to produce and sell canned baby food and in 1964 the son of the founder came into business as his successor and manages the company with his two brothers and his son up to now. The focus of production is on organic generated food. Today the company employs around 2000 people and generates a sales volume of around 240 million Euros (2012). The company expanded with its production to Croatia, Austria, Russia, Switzerland, Ukraine, and Hungary, and sells its products all over Europe.

Organisational structure, responsibilities and interview partner:

The management of the family owned company with its 2000 employees is mainly in responsibility of family members. Two brothers and two sons build the management team. Generally, the company operates with a flat hierarchical structure which means that the four managing directors are involved in many details and decision making can be processed quickly. The founder of the company is responsible for the production processes and quality management, his brother is responsible for finance and accounting, one of the sons is responsible for sales and marketing, and the other son

holds responsibility for production and information technology. The second leadership level consists of the location and faculty managers of the different production plants. The third level then refers to further team leaders in the operating processes.

For this investigation two personal interviews were conducted with the founder and managing director of the company as well as with his son and managing director for sales and marketing.

Dynamics of entrepreneurial activity:

In this case study the corporate function of sales and marketing as well as the production development appear to contribute to the entrepreneurial function. The managing director of sales and marketing appears to actively engage in networking with customers and has a deep understanding for market trends and needs in the organic food industry. Therefore, he seems to play an important role for the idea generation of innovative products. The interviews show that product innovation is the most important entrepreneurial action in the company. 20% of the products are renewed every year which means that there is a complete new product range in a time frame of five years.

Additionally, one director of the main production plant seems to engage in entrepreneurial activity as well by generating new production possibilities. These refer to process innovation in the processing of organic food and require the combination of technological knowledge for the production machines and the special gentle processing methods for organic food.

When it comes to decision making the founder of the company can be described as main decider and risk taker within the company. It can be stated that the fast decision making through flat hierarchies is a big advantage for the company in comparison to other larger competitors that have long development phases and milestone approvals to go through. In this context the problem often can be traced back to the requirement of detailed business cases for product or process innovation. In this case study CS-21 it also seems that the corporate functions of finance and controlling are more of hindering character exactly because of the above described financial justification logic.

To sum up, in case study CS-21 the entrepreneurial function appears to split up across the described different roles of idea generators in sales and marketing as well as production processes, and the decision maker and risk taker in the company.

6.9.9 Case study CS-22

Case Study	Industry	Employees	Sales volume
CS-22	Agricultural, building and energy	2000	n.a.

Data collection:

In this case study CS-22 primary data was analysed in the form of two interviews with a product and regional manager of the company. Additionally, the website offered general background information about the historical development and change of the organisation. The interview partner further provided internal information about the organisational structures and responsibilities, as well as the product development process. This information was analysed as secondary data.

Company background information:

The case study CS-22 concerns a large company group in the agricultural, building and energy industry with subsidiaries in Europe, the USA, and New Zealand. The corporation was founded in 1923 and today employs more than 16000 people. The current investigation only refers to the core business area of the agricultural unit. This unit is further subdivided in agriculture trade, fruits, and technology. The interview partner is a responsible product and regional manager in the agricultural technology sector. This business unit trades agricultural machines and devices, building technologies and facilities with 2000 employees.

Organisational structure, responsibilities and interview partner:

This investigation only refers to the business unit of agricultural technology with 2000 people. There are three leadership levels in this unit. The first level includes the three managing directors of the subunits agricultural machines and devices, building technology, and facilities. The second leadership level refers to the product and regional managers, and the third level includes the team leaders in production and service units. 300 of the 2000 employees have a responsibility in trading with agricultural machines and devices.

For this investigation two interviews with a product and regional manager of the company was conducted.

Dynamics of entrepreneurial activity:

The dynamics of entrepreneurial activity in this case study needs to be reflected in the light of the special company situation. The corporation is a pure trading company and therefore is very dependent on sales and marketing. That is why the central function of sales and marketing appears to play the key role for the entrepreneurial function. In this context there is no innovation in the sense of new product development. Innovative ideas in the investigated company unit are related to foster trade with used agricultural machines in order to further improve sales with new machines. This was realised with the innovative idea of an online auction platform for used agricultural machines for instance. Other corporate functions, especially finance and controlling, appear to be more of a barrier for entrepreneurial activities due to business case requirements. However, in the business of selling second-hand agricultural machines and devices the finance function still plays an important role in the price evaluation but not in the sense of innovative distribution channels.

Another example in this case study in order to engage in entrepreneurial activity is the fostering of customer views for the employees. The question of what makes a customer feel enthusiastic for the offered company products shows the main focus on sales and marketing of this company.

All in all, it has to be noted that the limited access to interview partners in this company reduces the scope of investigation within the organisation. Therefore these results can only be understood as one part of the entrepreneurial function in the whole company group. However, the product and regional manager appears to contribute to the entrepreneurial function in the role as idea generator and driver of new ideas. In his range of responsibilities he further supports innovative ideas with decision making. The role as personal risk taker is described to be very limited in this context as the business area is embedded in the whole company group.

6.9.10 Case study CS-23

Case Study	Industry	Employees	Sales volume
CS-23	Telecommunication	5000	5,2 billion Euro (2012)

Data collection:

In this case study primary and secondary data was analysed. Two interviews were conducted with the head of portal development and the head of digital global product development. The interview transcripts were analysed as primary data. In addition to that, the interview partner provided internal information about the organisational structure and the company website offered background information about the historical development and core business areas. This information serves as secondary data in this investigation.

Company background information:

This case study concerns an international large corporation in the telecommunication industry. The current investigation concentrates on the analysis of the entrepreneurial function within the German associated company. Found in 1995, the company processed many changes of owners, investors, and brands due to the dynamics of the telecommunication industry. Today, the company employs around 5000 people in Germany. There are six core business areas of the organisation: mobile communication and cooperation, internet access, mobile phones and communication devices, landline and digital subscriber line (DSL), television, and hosting services.

Organisational structure, responsibilities and interview partner:

The associated company in Germany with its 5000 people has several hierarchical levels, starting with the management team and the managing directors of the core business areas. Both of the interview partners are responsible leaders in the research and development departments. One of them is responsible for the development of online business. This refers to online shops, mobile portals, front end, and middle ware development. The other interview partner is responsible for the global digital product development, which concerns new business development and innovation across all product units.

Dynamics of entrepreneurial activity:

This case study has the special situation that there is a designated department for innovation and new business development where people are paid to come up with new innovative ideas. However, main impulses appear to come from sales and marketing with direct customer contact and a sense for market trends and customer needs. The head of online business development for instance collaborates and communicates a lot with different corporate functions and especially with people from sales and marketing in order to share customer needs, discuss new ideas and actively search for new opportunities that could be exploited. As a consequence, the collaboration of sales and marketing with the innovation team in the technological development then appears to be a main contribution to the entrepreneurial function. Finance and controlling appear to be of supportive nature. The business case systematic for new ideas seem to take too much time and resources until the new idea can be introduced to the market.

The head of development in digital product development and his team appear to be the main driver of fast idea realisation. This results from the quick and dirty approach of development with high level sanity checks only and quick prototyping and testing. As a result of this fast innovation process the ideas are visualised at early stage. The responsible decision makers for investment budget then appear to have a better understanding of the ideas and make decisions more quickly which further results in competitive time advantages. This innovation team can therefore be described to fulfil the role of an early experimenter and implementer of innovative ideas and further as main contribution to the entrepreneurial function of this company.

6.9.11 Case study CS-24

Case Study	Industry	Employees	Sales volume
CS-24	Aviation	7700	1,19 billion Euro (2012)

Data collection:

In this case study CS-24 data collection includes primary and secondary data. Primary data concerns five interviews, four of them in person and one via telephone. Two managing directors, the head of innovations and project management, and the head of

transportation systems were interviewed. Besides, background information about the company structure and its core business were analysed from the official website. Internal information about the organisational structure and responsibilities were provided by the interview partner as well. This information is analysed as secondary data.

Company background information:

This case study concerns a large company in the aviation industry. The parent organisation holds twelve associated companies with 7700 employees. The organisation is structured in corporate, business and support divisions. The corporate division include corporate investment management, finance and controlling, corporate development, human resources, quality and project management, legal, compliance, environmental affairs and committee support, as well as corporate communications. The business divisions are clustered in aero ground business, aviation, commercial activities, and real estate management. Lastly, the support divisions include engineering and facilities, information technology, corporate services, and corporate security. However, the current investigation mainly focuses on one of the twelve associated companies with the core business of airport operations in the business division of aviation with 46 employees.

Organisational structure and responsibilities:

The parent organisation counts 7700 employees. The associated company of airport operations with its 46 people is further subdivided in five business units: project airport expansion, transport services, technology and infrastructure, leasing and marketing, and finance and controlling. There are three management levels which include the two managing directors on first level, the five heads of the business units on second level, and the team leaders in the business unit of technology and infrastructure on third leadership level.

For this research project five interviews were conducted. One interview took place with the head of innovation and project management of the parent organisation as special expert for entrepreneurial activity in the company. In addition to that, two managing directors and the head of transportation systems of the associated company were interviewed.

Dynamics of entrepreneurial activity:

This case study has to be analysed in the special context and environment of the investigated associated company with regard to the parent organisation. It has to be clear that the current results only refer to one part of the entrepreneurial function within the parent organisation. However, the entrepreneurial function of the associated company as one important element can be described in greater detail.

In this case study it appears that gifted technicians, technological developers, and decision makers from management side build a network of the entrepreneurial function. The gifted technicians and technological developers in the areas of technology and infrastructure as well as transport services come up with innovative ideas for the airport terminals. The main focus in the airport terminal is to offer a most excellent and convenient process for travellers. A digital counter for customer service was developed for instance that digitally connects travellers with their questions to service assistants. Another customised innovation in this context is the nap cap, a little lockable cabin with a single bed and television that can be rented by travellers for a few hours and therefore offers the possibility to retreat and rest.

The department of technology and infrastructure collaborates with the department of transport services and therewith engages in active communication about new ideas. Customer research and surveys are used to get a deeper understanding of what customers need. Additionally, the head of transport services seems to have a sense for market trends and researches other airport services on other locations in Germany and across the globe. The use of these sources appears to be the main contribution to the idea generation in this associated company.

The corporate function of finance and controlling does not seem to be contributing to entrepreneurial activity, in fact it seems to be more of a barrier because a close minded view on financials only seems to make it impossible to challenge the status quo and implement innovative ideas.

Furthermore, the two managing directors engage in entrepreneurial activities in the context of decision makers and risk takers when it comes to the development and implementation of innovative products and services as described above.

6.10 Entrepreneurial roles in large companies

After the detailed outline of the cross-case pattern matching results (see 6.2 until 6.8) the dynamics of entrepreneurial activities were described case-by-case (see 6.9). In this subsection the emerged entrepreneurial roles in large companies shall be presented.

Firstly, the role of the decision maker and risk taker appears to be mainly assigned to the managing directors. However, due to the large size of the investigated companies this always refers to a management team and not to one single person. When ideas for innovative products or services are brought to management attention, the final decision whether the innovation will be promoted or not lies in the responsibility of the managing directors. In six cases the risk taking also has personal financial dimensions because the owners of the companies are also the managing directors. In the remaining four cases the final financial risk is caught up by the according larger company group or holding.

Secondly, the role of the idea generator refers to several different people and corporate functions. On the one hand the responsible leaders of sales and marketing appear to play a key role for the entrepreneurial function when it comes to the understanding of customer needs, wishes and therefore also market opportunities. These people seem to engage in extensive networking and communication about innovative ideas inside and outside the company (see 6.4). On the other hand, there are technological experts that come up with innovative technologies and therewith contribute to the entrepreneurial function as important idea generators. Across all large companies these technological development experts appear to be important. These people seem to be full of energy and passion for their technological field which is why they constantly seem to challenge the status quo and simply want more (see 6.8).

In large companies the role of knowledge linker seems to be crucial. Due to the high work specification the many knowledge fields increased. People who actually have a deep understanding of more than one knowledge field appear to be especially precious to the companies as the combination overcomes interfaces and offers new combination possibilities. The case studies show that especially the integration performance between sales and marketing and technological development appears to be central to the entrepreneurial function. It seems that experimenting with different combinations in this context is a main entrepreneurial activity for idea generation and testing. People who

actually engage in activities like that are described to be full of curiosity and energy to find out something new to the world (see 6.8). In order to establish the generated ideas they are further explained to have an assertive and courageous personality (see 6.8).

In six of the investigated large companies there is also the role of an integrating and motivating person that appears to contribute to the entrepreneurial function. These people appear to be very important in the implementation process of innovation within the organisation because many employees do not have a positive attitude towards change. These employees need to be filled in step by step. This requires empathy and leadership skills from managers (see 6.4).

6.11 Summary and outlook

This chapter outlined the findings in large companies. It gets clearer that the larger the company the more complex is the situation under study. Several organisational hierarchies and a clear cut corporate functions that work separately from another can be found in every large company but none is exactly the same. This is why the contribution to the entrepreneurial function is so interesting to investigate. It could be identified that these three main entrepreneurial roles, as outlined in chapter 6.10, are crucial for the fulfilment of the entrepreneurial function in larger companies. The decision maker and risk taker that mainly can be found on management level, the idea generator mainly from the department of sales and marketing as well as the knowledge linking people who have deep understandings in different corporate functions and therefore combine is easier. These roles appear to present the central contribution to the entrepreneurial function in the way Schumpeter described it many years ago. In chapter 8 a deeper discussion about these connections will follow. Before that additional findings and rival explanations are outlined in the following chapter 7.

Chapter 7. Additional Findings And Rival Explanations

7.1 Introduction

The interviews across all company size categories of this research project generated a number of additional factors that appear to influence the entrepreneurial function. In order to explain dynamics and evolution of the entrepreneurial function these factors appear to be important as they explain how entrepreneurial activity can be facilitated or hindered within a corporate setting. These factors therefore help to explain the boundaries of the investigated case studies and can be understood as critical change factors. In the following the facilitating factors and barriers are outlined according to the company sizes (7.2 and 7.3). The subsection closes with a short summary of the main influencing factors across all case studies (7.4) and a clarification on the possible rival explanations of this investigation.

7.2 Facilitating factors

7.2.1 *Small companies*

The research project mainly aims to find out who is involved in entrepreneurial activity. In a further step it was tried to shed some light on the possibility that entrepreneurial spirit could be facilitated within the corporate setting. Initially, all six small company case studies (CS-01, CS-02, CS-03, CS-04, CS-05, CS-06) stated that it is possible to facilitate entrepreneurial activity in general (P-84a)¹⁰. In the following, five main possibilities of how to conduct this facilitation based on the interview answers are presented.

a. Delegate responsibility

In five case studies (CS-01, CS-02, CS-03, CS-04, CS-05) the interviewees brought up the aspect of delegating responsibility in order to facilitate entrepreneurial activity (P-86a). Delegating responsibility was further specified with promoting employees and trusting them with management tasks (I-14), letting people make projects on their own

¹⁰ See Appendix I: Influencing factors of entrepreneurial activities with detailed evidence of propositions, according case studies and interviews.

(I-27), and allocating budget (I-33). It seems to be obvious that delegating responsibility plays an important role in order to facilitate entrepreneurial activity.

b. Liberties

Another way to facilitate entrepreneurial activity was emphasised by four case studies (CS-01, CS-02, CS-03, CS-05) and concerns the liberties people have within their corporate setting. A head of research and development (CS-01), for instance, pointed out how important it is to have liberties at work and how much he enjoys being able to guide new technologies because of these liberties (I-16). These findings show that people seem to need a certain amount of liberties for personal development of entrepreneurial activity (P-85a). This seems to be closely related to the aspect of delegating responsibility as a person who is trusted with responsibility also needs space to exercise their responsibility.

c. Example and leadership

The managing director of a case study (CS-06) stated that entrepreneurial activity can be facilitated by acting as an example (P-88a). This aspect is related to the way superiors conduct leadership. In case superiors are engaged in entrepreneurial activity this seems to have an influence on the employees and their entrepreneurial activity.

In this context, the head of research and development of one case study (CS-01) further argued that good leadership practice also facilitates entrepreneurial activity (P-93a). With good leadership practice the interviewee meant the focus on employees as individual personalities (I-16).

d. Way of living

Additionally, a managing director (CS-01) brought up the thought that entrepreneurial activity can be facilitated by living a balanced and disciplined life mentally and physically (P-87a). This statement indicates that the personal way of living seems to have an influence on the entrepreneurial activity when mental and physical balance is concerned.

e. Feedback

Finally, the aspect of communicating feedback was emphasised by one managing director (CS-04). It seems to be an important facilitation possibility for entrepreneurial

activity to give feedback to people (P-90a). This is also related to the aspect of delegating responsibility and giving people liberties to develop. Feedback as a form of communication seems to motivate and facilitate entrepreneurial activity.

7.2.2 Midsized companies

At the beginning it can be stated that all seven midsized company case studies supported the idea that entrepreneurial spirit can be facilitated but only to a certain amount (P-84b). Furthermore, seven influencing factors of how to facilitate entrepreneurial spirit could be identified.

a. Liberties:

In six case studies (CS-07, CS-09, CS-10, CS-11, CS-12, CS-13) interviewees emphasised the importance of liberties within their work (P-85b). It appears that having space for further personal development seems to facilitate entrepreneurial activity.

b. Delegating responsibility:

The aspect of delegating responsibility seems to facilitate entrepreneurial activity as well (P-86b). This statement was supported by six case studies (CS-07, CS-09, CS-10, CS-11, CS-12, CS-13). The interviewees specified the argument by emphasizing that delegating responsibility includes budget and support.

c. Feedback:

Eleven interview partners of five case studies (CS-07, CS-10, CS-11, CS-12, CS-13) outlined that communication and positive feedback concerning entrepreneurial activity is a facilitation possibility (P-90b). This aspect also refers to the idea of sharing new ideas with others.

d. Example and leadership:

In four cases (CS-07, CS-09, CS-11, CS-12) good leadership practice was emphasised. The higher management level of a company should see employees as human beings first not only as top performer (P-93b). This kind of leadership is said to facilitate entrepreneurial activity. In this context it was further stated that entrepreneurial activity can be facilitated by setting an example on management level (P-88b).

e. Incentives:

Four interviewees of four case studies (CS-07, CS-08, CS-09, CS-13) hold the opinion that entrepreneurial activity can be facilitated by incentives (P-92). This argument seems to be closely linked to the motivation factor of entrepreneurial action.

f. Training:

In three case studies (CS-07, CS-12, CS-13) it was argued that entrepreneurial activity can be facilitated by further training of people (P-91a). According to the interviewees these trainings could include topics like innovation management, personal trainings, and management trainings.

g. Challenge and pressure:

Only in two case studies (CS-07, CS-12) it was mentioned that challenging people and applying pressure can facilitate entrepreneurial activity (P-89a). This aspect does not seem to play such an important facilitating role.

7.2.3 Large companies

In the first place, it can be notified that all eleven case studies support the idea that facilitation is possible up to a certain amount (P-84c). The interviews of the large company case studies further generated seven facilitating aspects that are presented in the following.

a. Feedback and communication:

Positive feedback seems to be of great importance as well as communicating a lot about entrepreneurial ideas (P-90c). This was highlighted by twenty-five interview partners in ten case studies.

b. Delegate responsibility and liberties:

In eight cases fourteen people stated that delegating responsibility with budget and support is an important facilitation possibility (P-86c). This also refers to the individual way of leadership. In this context it was further highlighted in seven case studies that entrepreneurial activity can be facilitated by giving liberties and leaving room for personal development (P-85c).

c. Challenge and pressure:

Furthermore, in seven case studies it was mentioned that entrepreneurial activity also can be facilitated by challenging people and applying pressure (P-89b). This proposition also refers to the broader area of leadership.

d. Training:

The next facilitation possibility is related to the idea that entrepreneurial activity can be learned (see P-57, P-58c). Six case studies support the argument that entrepreneurial activity can be facilitated by training and coaching people (P-91b). This idea includes innovation training, personal training, and management training (P-91b).

e. Leadership:

A good leadership practice was mentioned to be facilitating entrepreneurial activity as well (P-93c). This proposition refers to the focus on employees as human beings first and not according to their performance. It was mentioned by ten interview partners in five case studies.

f. Example:

Another aspect of how to facilitate entrepreneurial activity is to set an example on higher management levels (P-88c). Seven interviewees in five cases emphasised this role modelling effect.

g. Way of living:

Lastly, four interview partners explained that living a balanced and disciplined life mentally and physically can facilitate entrepreneurial activity (P-87b). However, this proposition more describes an aspect of a person's individual way of life than something a superior or colleague could actually do to facilitate entrepreneurial activity within the direct corporate environment.

Table 5 lists all of the facilitating factors for small, mid-sized and large companies. It also shows the number of case studies (CS-#) and the number of interviews (I-#) where the respective facilitating factor was emphasised. This overview clearly shows that in all company sizes facilitation of entrepreneurial activity appears to be possible. According to the interview and case study frequencies the facilitating factors of leaving liberties, delegating responsibility as well as communicating and giving feedback seem to be meaningful for entrepreneurial activities across all company size categories.

Facilitating factors	Small		Midsized		Large	
	CS-#	I-#	CS-#	I-#	CS-#	I-#
Facilitation possible	6	7	7	20	11	31
Leaving liberties	4	4	6	10	7	16
Delegating responsibility	5	5	6	9	8	14
Balanced and disciplined way of living	1	1			4	4
Seeing an example	1	1	3	3	5	7
Challenge and pressure people			2	3	7	10
Giving feedback and communicate	1	1	5	11	10	25
Trainings or coachings			3	9	6	11
Incentives			4	4		
Good leadership with focus on people	1	1	4	4	5	10

Table 5: Comparative table of company sizes with facilitating factors

7.3 Barriers

7.3.1 *Small companies*

The last step of this research project tried to find out if the interviewees encountered difficulties or barriers that hindered them to act entrepreneurially. Nine main barriers could be identified in the investigated small companies as the following explanations illustrate.

a. Regulations and control

In five case studies (CS-02, CS-03, CS-04, CS-05, CS-06) the aspect of regulations and control was outlined to be hindering entrepreneurial activity in different ways (P-104a, P-105a, P-106a, P-108). These regulations and control can occur for example as financial restrictions (P-104a), as laws and industry standards (P-105a), or as certification requirements (P-108). The permanent control and dictation due to regulations (P-106a) seem to be a high barrier for entrepreneurial activity within small companies.

b. Professional competence and difficult people

In three case studies (CS-02, CS-04, CS-06) the aspect of professional competence was emphasised. The findings show that professional competence seems to be very important for entrepreneurial activity. In case professional competence is lacking this can be a barrier for entrepreneurial activity (P-98a).

Furthermore, there is the issue of dealing with difficult people within the company. One managing director (CS-03) explained this aspect as follows.

‘Es gibt auch Leute, die bewusst gegen verschiedene Dinge arbeiten. Aber das sind schwierige Leute, die sich nicht mit der Arbeit und dem Unternehmen identifizieren.’

(Translation: ‘There are people who consciously work against new things. These are difficult people who do not identify themselves with their work and the company.’)

(Managing director, CS-03 / I-39)

This statement shows that difficult people who try to work against new things can be a barrier for entrepreneurial activity (P-102a).

c. Overload and pressure

The aspect of overload and pressure was outlined by three case studies (CS-04, CS-05, CS-06). People are hindered to act entrepreneurially if they are constantly overloaded with work (P-109a). One team leader explained it as follows (CS-05):

‘Wenn es immer nur um Erfolg geht und man nur nach Zahlen gemessen wird hindert das. Innovation und Veränderung kosten am Anfang immer Geld und man investiert Ressourcen ohne einen direkten Output zu sehen, doch am Ende kommt doch etwas Tolles heraus.’

(Translation: ‘The pressure of being successful all the time hinders entrepreneurial activity and if you only get rated by numbers. Innovation and change cost money at the beginning and you invest resources without directly seeing an output. But at the end you have a great outcome.’)

(Team leader, CS-05 / I-30)

The findings in the small company case studies indicate that pressure and work overload of people seem to hinder entrepreneurial activity (P-109a).

d. Risk aversion

As two case studies (CS-02, CS-05) show the aspect of a person's risk aversion seems to be a barrier to entrepreneurial activity as well (P-96). The managing director of one case study (CS-02) explained that risk aversion can be caused by the wish for personal security and family commitments (I-27). The team leader in case study CS-05 supported this argument and evaluated the price of acting entrepreneurially to be higher if a person has a family (I-30). This aspect refers to the family status of an entrepreneur. Both interviewees argue that entrepreneurial activity can be hindered if someone has a family to take care of which means having a lot of personal responsibility. The responsibility seems to create some sort of risk aversion when entrepreneurial activity is concerned. Therefore, risk aversion seems to be an entrepreneurial barrier (P-96).

e. Health

The issue of health came up in two case studies (CS-02 / I-27, CS-06 / I-29). The interviewees pointed out that acting entrepreneurially seems to cost energy and that it can become a burden with negative influence on one's personal condition. This kind of burden therefore seems to hinder or constrain entrepreneurial activity (P-97).

f. Communication and networking

Two interviewees (CS-02, CS-05) emphasised a lack of communication and networking as barrier to entrepreneurial activity. The interview partners described the chance to ask questions and to share ideas to be very important for entrepreneurial activity (I-27, I-30). It seems that the absence of communication and networking hinders entrepreneurial activity (P-100a).

g. Frustration

The managing director of one case study (CS-01) described frustration of employees as barrier to entrepreneurial activity (P-94a). He also stated that frustration is dangerous as the frustrated person might leave the company.

h. Self-confidence

As already mentioned in the paragraph about facilitating entrepreneurial activity the aspect of self-confidence seems to be very important for entrepreneurial activity. One managing director (CS-02 / I-27) brought up this point in reverse by stating that a lack of self-confidence of a person hinders entrepreneurial activity (P-99a).

7.3.2 *Midsized companies*

The analysis of the midsized companies brought up eight main barriers that our outlined in the following.

a. Communication and feedback:

A lack of communication and the absence of a supporting network were evaluated to be barriers of entrepreneurial activity (P-100b). This assertion was supported by six case studies (CS-07, CS-09, CS-10, CS-11, CS-12, CS-13). The aspect of giving and receiving positive and negative feedback refers to this assertion as well. It was stated in four case studies (CS-07, CS-09, CS-11, CS-13) that a lack of feedback hinders entrepreneurial activity as well (P-101a).

b. Attitude towards change:

Furthermore, entrenched habits and situations within a company can hinder a positive attitude towards change and therefore entrepreneurial activity (P-110a). This argument came up in five case studies (CS-07, CS-08, CS-10, CS-12, CS-13).

c. Regulations and control:

In three case studies (CS-07, CS-09, CS-12) interviewees explained that too many laws, standards and guidelines hinder entrepreneurial activities (P-105b). Two interview partners (CS-09 / I-31, CS-12 / I-51) further outlined that control, dictation, regulation and required statement of accounts are barriers to entrepreneurial action in the company (P-106b).

d. Difficult people:

It appears that people who work against new paths in the organisation hinder entrepreneurial activity (P-102b). This was mentioned in three different case studies (CS-07, CS-08, CS-11).

e. Professional competence:

The lack of professional competence seems to be a barrier to entrepreneurial activity as well (P-98b). This is what three interviewees of three case studies explained (CS-07, CS-12, CS-13).

f. Self-confidence:

In addition to that, a deficit of self-confidence and the existence of fears is said to hinder entrepreneurial activity (P-99b) as three case studies stated (CS-07, CS-09, CS-13).

g. Frustration:

Two interviewees (CS-07 / I-66, CS-13 / I-23) argued that people who are discouraged and frustrated are hindered to engage in entrepreneurial activity (P-94b). An engineering manager explained that discouraged people back out and do not engage in entrepreneurial activity anymore (I-66).

h. Company suggestion system:

One managing director (CS-13 / I-25) outlined that a strict company suggestion system can hinder entrepreneurial activity (P-111a). Innovative ideas of people are processed in the same standardised way all the time. It appears that entrenched habits with suggestion systems can turn out to be a barrier as well.

7.3.3 *Large companies*

The analysis of the interviews in large companies resulted in eight main issues that seem to make it difficult for people within their corporate setting to engage in entrepreneurial activities.

a. Structure and hierarchies:

In ten of the investigated eleven large company case studies it was emphasised that leadership and hierarchical issues based on the organisational structure seem to hinder entrepreneurial activity (P-112). One team leader (CS-15 / I-57), for instance, explained that when it comes to innovative ideas it can be difficult if a superior is not involved enough and feels overlooked. Another team leader (CS-15 / I-70) stated that sometimes superiors do not realise innovative ideas and only fear that someone could undermine their position. In addition to that, a head of purchasing (CS-16 / I-04a) mentioned that long decision processes within the organisation can also hinder entrepreneurial activities.

b. Regulations and control:

In six case studies interviewees explained that too many laws, standards and guidelines hinder entrepreneurial activities (P-105c). In three case studies (CS-18, CS-23, CS-24) interview partners further stated that especially process regulation and descriptions are barriers to act entrepreneurially (P-107). Only in one case study it was mentioned that financial regulations (P-104b) or control, dictation and statement of accounts (P-106c) seem to be restrictive aspects.

c. Attitude towards change:

Furthermore, the interviews show that a negative attitude towards change is a barrier for entrepreneurial activity (P-110b). In five case studies people emphasised entrenched habits and situations as well as a high fluctuation of leaders within the company to negatively influence the attitude towards change and therefore also the entrepreneurial activities (P-110b).

d. Overload and pressure:

In five case studies it was stated that work overload and time pressure within the daily work life hinders people to engage in entrepreneurial activities (P-109b). One head of production (CS-16) explained it as follows:

‘Wegen zu viel operativem Geschäft und Stress ist ein kreatives, aktives und sich festbeißendes Nachverfolgen von Ideen unmöglich.’

(Translation: ‚Due to far too much operational business and stress a creative, active, and insisting monitoring of ideas is impossible.’)

(Head of production, CS-16 / I-08)

e. Feedback and communication:

In five case studies the aspect of lacking positive and negative feedback was mentioned to be restricting entrepreneurial activities (P-101b). This generally refers to the area of communication issues. In addition to that, three case studies emphasised the lack of communication and the lack of a supporting network to have a negative influence on entrepreneurial active people (P-100c).

f. Dealing with people:

The way people deal with people within the organisation seems to be influencing entrepreneurial activity in different ways. In four case studies, for instance, it was stated that there are difficult people within the company who work against new paths and new ideas which therefore creates a barrier for entrepreneurial active people (P-102c). Further, interviewees explained in four cases that a lack of human resource development, staff retention as well as a bad way of dealing with innovative people seem to hinder entrepreneurial activities (P-103).

Moreover, certain deficiencies were mentioned that seem to have an influence on entrepreneurs as well. Hence, the lack of self-confidence and existing fears seem to hinder people to act entrepreneurially (P-99c). This proposition came up in four case studies. Additionally, the lack of professional competence and skills seem to negatively influence entrepreneurial activities (P-98c) which was stated in two companies.

g. Frustration:

Another constraint of entrepreneurial activity that was mentioned in four case studies concerns personal demotivation and frustration (P-94c). Two of these cases further described that a culture of penalties after someone failed by trying out new ideas restricts entrepreneurial activities (P-95). This proposition is closely related to the aspect of a culture without accusation which was outlined earlier to be an important entrepreneurial activity.

h. Suggestion system:

Lastly, a strict way of dealing with suggestion systems in large companies was mentioned twice to hinder entrepreneurial activity (P-111b). One head of human resources described that suggestion systems are mostly recognised as being very bureaucratic (CS-16 / I-06b) and therefore more of restricting nature.

The following table 6 lists all barriers in small, mid-sized and large companies. Further, the table shows the number of case studies (CS-#) and the number of interviews (I-#) in which the barrier was emphasised by the interviewees. It appears that frustration, a lack of communication and networking as well as too many laws, standards and guidelines within the organisation hinder entrepreneurial activity.

Barriers	Small		Mid-sized		Large	
	CS-#	I-#	CS-#	I-#	CS-#	I-#
frustration	1	1	2	2	4	6
penalties					2	4
risk aversion	2	2				
health reasons	2	2				
lack of professional competence	3	3	3	3	2	5
lack of self-confidence	1	1	3	3	4	9
lack of communication and networking	2	2	6	8	3	6
lack of feedback			4	4	5	6
difficult people	1	1	3	4	4	4
lack of personal development					4	4
regulations	1	1			1	3
laws, standards and guidelines	1	1	3	6	6	9
control and dictation	3	3	2	2	1	2
process regulations and descriptions					3	4
certification requirements	1	1				
work overload and pressure	3	3			5	7
entrenched habits			5	8	5	10
company suggestion system			1	1	2	3
leadership and hierarchical issues					10	26

Table 6: Comparative table of company sizes with barriers

7.4 Summary of main influencing factors

Across all case studies and company sizes five facilitating factors appear to be especially important. Entrepreneurs appear to need liberties and responsibilities in their scope of work in order to follow up on identified possibilities quickly enough and have the respective power and decision scope to actually drive innovative ideas. Further, it appears that people in leadership positions appear to contribute to the entrepreneurial function in different ways and roles. Therefore, leadership style and acting as an example appears to facilitate entrepreneurial activities for other employees in the organisation. In this context feedback appears to be another important facilitating factor in small, mid-sized and large companies. When people engage in entrepreneurial activities and communicate their innovative ideas it is of great importance that these ideas get processed and that feedback is given to the respective idea generators.

From the detailed outline in subsection 7.3 six main barriers could be identified that emerged across all company size categories. In case entrepreneurs get frustrated within the innovation process or have to deal with difficult people in the organisation and their

defensive attitudes towards change it can be a barrier for them to further engage in entrepreneurial activities. Regulations, strict guidelines, process descriptions and control appear to be other main barriers for entrepreneurial activities in all company sizes. Additionally, a lack of professional competence in the innovation process, a lack of self-confident to drive innovative ideas or a lack of communication and feedback appear to be main barriers in the investigated case studies.

All of these factors appear to influence entrepreneurs in their entrepreneurial roles and therefore also the contribution to the entrepreneurial function.

7.5 Rival explanations

Besides the relation of the findings to the current scientific discussion it is further important to rule out rival explanations and implications that might have an influence on the results of this study. The direct customer contact seems to be of particular importance to the sales and marketing entrepreneur in order to engage in entrepreneurial activity. However, as this research was undertaken in German companies it has to be noted that these companies have to comply with certain quality management requirements according to the norm ISO 9001 (International Organisation of Standardisation). Customer orientation is one of eight quality management principles of the ISO 9001 and is audited regularly within quality management audits. These procedures decide on certain necessary industry certifications of the company. In case a company fails to meet these requirements blocked orders or the degradation as supplier can follow. Therefore, it is possible that this study is influenced by a sample of investigated case studies where customer orientation is not only required for entrepreneurial activities but also to meet certain industry regulation requirements. However, the entrepreneurial activity of the sales and marketing entrepreneur with an integrating capacity towards specially gifted technicians and R&D entrepreneurs goes beyond the simple need for customer orientation.

Further, the findings could have identified entrepreneurial people in the corporation who are recruited to act entrepreneurially. That means it would be part of their job description. This rival explanation could be ruled out as during the interviews the interview partners described their jobs, tasks and responsibilities. Only in one case study CS-23 one interviewee is member of a dedicated innovation team as explained

earlier. This was the only interview with an entrepreneurial person who is hired to engage in innovation. The rest of all interviewees have jobs in the earlier outlined and discussed corporate functions.

7.6 Summary and outlook

Chapter 4-7 reported the detailed findings of the investigation for the small, mid-sized and large company case studies based on the seven most important themes that emerged from the interview analysis and the case report analysis. The 97 interviews conducted in 24 companies provide a broad insight into many facets of the entrepreneurial function. In order to analyse the rich set of qualitative data in a consistent and structured manner, it is important to follow the analytic strategy as explained in chapter 3.6. Therefore, the described triangulation of data analysis is conducted by further following the threefold analytical process of grounded analysis, constant comparison and cross-case pattern matching. Grounded analysis and constant comparison concern the double cycle coding procedure and provide the basis for the outcomes of the detailed findings matrix (see Appendix C, D, E and I). That is how the summarised propositions according to the interview questions and emerged themes were analysed. Within this chapter the analytical technique of cross-case pattern matching was applied. The first part of it is the cross-case pattern matching within each company size category. That means small, mid-sized and large company case studies were analysed separately. Additionally, the single case reports were analysed and the dynamics of the entrepreneurial function was described (also see Appendix F, G, and H). With the help of these details several entrepreneurial roles could be identified that explain how the entrepreneurial function appears to be carried out cooperatively.

The next chapter will pick up the second part of the cross-case analysis with the discussion of the main themes, the entrepreneurial roles and the evolution of the entrepreneurial function across different company sizes. This part shows how the research findings are embedded in the analytical framework with reference to the current scientific discussion.

Chapter 8. Discussion

8.1 Introduction

This chapter discusses the previously outlined research findings in the context of the relevant reviewed literature. It is the aim of this study to contribute to the theory of the entrepreneurial function when corporations get bigger. The picture of the entrepreneurial function seems to be special in every single investigated case. However, similarities could be found within and across the different themes of each company size. For that reason the key findings of the main themes that play an important role to identify and describe entrepreneurial roles are reflected subsequently. After that the entrepreneurial function and its evolution is discussed to explain how it splits up across entrepreneurial networks within the organisation.

Subsection 8.2 outlines the relevant key findings for this discussion concerning the corporate functions for the entrepreneurial function (8.2.1), the organisational hierarchies (8.2.2), the activities of entrepreneurs (8.2.3) and the relation of entrepreneurial activities according to personal predisposition and learning (8.2.4), different intensities and concentrations of entrepreneurial activity (8.2.5), motivation of entrepreneurs (8.2.6), and personality, characteristics and capabilities of entrepreneurs (8.2.7).

Following these key findings the previously identified entrepreneurial roles and their contribution to the entrepreneurial function are reviewed in subsection 8.3. After that the analytical discussion about the evolution of the entrepreneurial function across different company sizes is presented in subsection 8.4. The whole chapter closes with a brief summary and an outlook on how the conclusion chapter will highlight the main contributions to theory and practice afterwards (subsection 8.5).

8.2 Relevant key findings for discussion

This subsection discusses the relevant key findings of the current investigation according to the main themes. The findings are interpreted and discussed in relation to the earlier outlined literature review (see chapter 2).

8.2.1 *Corporate functions*

The following table 7 lists all main arguments on corporate functions from the interviews and shows its interview and case study frequency. It appears that the corporate function of finance, accounting and controlling does not contribute to the entrepreneurial function.

Corporate functions	Small		Mid-sized		Large	
	CS-#	I-#	CS-#	I-#	CS-#	I-#
People with direct customer contact	1	1	2	2	2	3
People from sales department			3	4	6	12
Specially gifted technicians	3	3	3	3	3	4
People from R&D			1	3	3	3
None from finance, accounting and controlling			5	5	10	11

Table 7: Comparative table of corporate functions

It further seems to be obvious that the degree of labour division is related to the company size. A small company with about ten people does not have an organisational system with clear-cut corporate functions and hierarchical levels. However, mid-sized and especially large company cannot exist without an organisation like that. Therefore, it is interesting to find out how the entrepreneurial function is manifested within the organisational system of different company sizes.

By analysing the findings about different corporate functions across the investigated company size categories four key findings could be identified. These findings refer to the functions of research and development, sales and marketing, production, and finance and controlling.

Sales and marketing:

The first key finding refers to the corporate functions of sales and marketing. Before going into detail, it has to be noted that the corporate functions of sales and marketing are covered as one function in this research. This results from the sizes of the investigated case studies. Even though large companies with up to 7700 employees are taken into consideration they do not necessarily have a clear-cut distinction between these two functions as it is in the case of big groups or consolidated enterprises.

Thus, it was highlighted throughout all company size categories that mainly people with direct customer contact seem to be involved in entrepreneurial activities. This is why the function of sales and marketing is found to be crucial for the entrepreneurial function in small, mid-sized and large companies.

Technical experts of production:

Another important contribution to the entrepreneurial function seems to come from specially gifted technicians. Across all company size categories technical experts with a special technological understanding, curiosity and love for their job were evaluated to be crucial when it comes to innovative ideas and entrepreneurial activities. Furthermore, in mid-sized and large companies it seems to be important to have a management responsible who truly perceives the value of the gifted technician and promotes different ideas.

Research and development:

The third key finding concerns the corporate function of research and development. In the investigated mid-sized and large company case studies it is apparent that only few people from the department of research and development engage in entrepreneurial activities. Considering the mid-sized company cases this finding is not surprising because only one of the seven cases actually has a separate department of research and development. As earlier explained, the rest of the mid-sized company cases are simply too small to afford dedicated positions or departments for this function.

However, when the large company cases are concerned this finding becomes more interesting. It has to be noticed that nine of the eleven investigated large company case studies have a dedicated department of research and development. The findings show that only few cases supported the argument that the function of research and development is involved in entrepreneurial activities but to a very limited extent. This

finding is even more surprising because the cases that support this finding are the ones with the biggest departments of research and development. Only one large company case study with larger positions in research and development pointed out that this function is important for the entrepreneurial function and interacts with the sales department when entrepreneurial activities are concerned.

Finance and controlling:

The clearest outcome within the mid-sized and large company case studies concerns the department of finance and controlling. Six of seven mid-sized companies and ten of eleven large companies confirmed that there is no entrepreneurial activity happening within their departments of finance and controlling. It was explained that it is important to have the financial situation in mind when innovative ideas are concerned but this does not mean that these ideas initially come from the department of finance and controlling.

According to the division of labour the corporate functions of sales and marketing, production as well as research and development seem to play a key role for the entrepreneurial function. That means the corporate functions of finance and controlling, human resource management and procurement further seem to be more of supportive nature but not crucial for the entrepreneurial function to be carried out cooperatively.

The investigation shows that the function of sales and marketing seems to be particularly important for the entrepreneurial function across all considered company sizes. Brem and Voigt (2009) outlined that innovation impulses can be distinguished in two ways. Whereas technology push refers to the company's own internal and external research as stimulus for new products and processes, market pull concentrates on satisfying customer needs. The fact that people in sales and marketing seem to be particularly involved in entrepreneurial activities can therefore be related to the market pull approach. Sales and marketing people are close to market needs. This does not only refer to general trends in market research. The findings show that direct customer contact appears to be crucial for entrepreneurial activities. The direct customer contact further does not only seem to include the placing and negotiation of orders. Instead, people in sales and marketing seem to think in customers shoes and therefore generate an outreaching understanding of current customer needs.

Furthermore, as the findings show few people in research and development seem to be involved in entrepreneurial activities. In his research Augsdorfer (2012) identified the corporate bootleg researcher whose entrepreneurial behaviour, however, is limited to the department of research and development. This research takes up on the entrepreneurial role of this bootleg entrepreneur (Augsdorfer, 2012). It is therefore anticipated that the few people that seem to be involved in entrepreneurial activities according to this investigation are Augsdorfers identified corporate bootleg researchers.

Thirdly, specially gifted technicians in the corporate function of production seem to play a key role for the entrepreneurial function. Especially in mid-sized and large companies the technological expertise and creativity of these people seem to be essential for the entrepreneurial function. The special gift of these technical experts does not only seem to be related to technology but also to the capability of 'carrying out new combinations' as Schumpeter (1989) described it.

Hence, the findings indicate that these three corporate functions seem to possess the entrepreneurial function of an organisation. Sales and marketing, research and development as well as production appear to be of entrepreneurial nature whereas finance and controlling, human resources and procurement seem to be more of supporting nature when the entrepreneurial function is considered. Therefore, it can be stated that Schumpeter's thought about the entrepreneurial function that is carried out cooperatively (Schumpeter Mark II) could be confirmed within this research project.

8.2.2 Organisational hierarchies

The following table 8 provides an overview on main arguments concerning the role of organisational hierarchies for entrepreneurial activities in small, mid-sized and large companies.

Organisational hierarchies	Small		Mid-sized		Large	
	CS-#	I-#	CS-#	I-#	CS-#	I-#
Overlapping responsibilities	2	3				
Managing directors and team leaders	6	6	7	18	9	26
People with responsibility			2	3	2	4
Related to individual persons not corporate functions			2	2		
Carried out cooperatively			2	3	6	15
Existent on different or all hierarchical levels					7	16

Table 8: Comparative table of organisational hierarchies

When the research results about organisational hierarchies are analysed four key findings need to be highlighted. Firstly, entrepreneurial spirit is mostly apparent on management or team leader level. This could be confirmed across all company size categories. Therefore, managing directors or team leaders seem to be particularly involved in entrepreneurial activities.

Secondly, within the large companies it is indicated that entrepreneurial activities take place on different hierarchical levels and is not only concentrated on managing directors. It seems that the involvement of other management levels or team leader levels is important to explain the entrepreneurial function within large companies. This finding further supports the idea that the entrepreneurial function is carried out cooperatively which leads to the third aspect.

Hence, in mid-sized and large companies it was emphasised that networking within inter-disciplinary teams is particularly important for the entrepreneurial function. That means managing directors and team leaders of different corporate functions seem to be connected when it comes to entrepreneurial activities.

The fourth aspect highlights that the entrepreneurial function seems to be more related to personal individuals instead of certain functions, positions, hierarchical levels or environmental settings. This is what mid-sized and large organisations confirmed. In

other words, it seems to be possible to allocate the entrepreneurial function to outstanding corporate functions or hierarchical levels but at the end the individual personality of the entrepreneurial active person seems to play a crucial role as well. At this point it is important to clarify that a certain entrepreneurial personality is of great important to the way how the entrepreneurial function is carried out cooperatively.

The involvement of management or team leaders in entrepreneurial activities was already emphasised by Schumpeter (1928) when he explained that leaders in organisations can act as entrepreneurs themselves if they produce new combinations. In addition to that, Schumpeter outlined that these leaders have an impact on corporate entrepreneurship within the company because they are involved in decision-making of policy choices that further influences other agents to engage in entrepreneurial activities (Schumpeter, 1927). Schumpeter's emphasis of people who are engaged in leadership can therefore be supported in this study. The findings show that across all company size categories managing directors, team leaders or people with other leadership responsibilities seem to be involved in entrepreneurial activity. It appears that entrepreneurial spirit and leadership are related. People who engage in responsibility and decision-making authority seem to be particularly important for the entrepreneurial function. However, it might be possible that people in leadership positions are in these positions because of their entrepreneurial activities and spirit. This rival explanation could have influenced this research and is interesting to be considered in further research (see chapter 9).

The findings further indicate that the larger the corporation is the more hierarchical levels seem to be involved in entrepreneurial activities. At this point it has to be noticed that in larger corporations there are also more people with leadership responsibilities across the organisation. Therefore, this finding is not contrary to the first outlined result that leadership seems to be related to entrepreneurial activity.

8.2.3 *Activities of entrepreneurs*

The following table 9 lists all entrepreneurial activities of small, mid-sized and large companies as a comparative overview. It further shows the frequencies according to the case studies (CS-#) and the respective interviews (I-#).

Activities of entrepreneurs	Small		Mid-sized		Large	
	CS-#	I-#	CS-#	I-#	CS-#	I-#
Make decisions	3	3	5	11	5	6
Decide not procrastinate	2	2	3	3		
Take over responsibilities	2	2	3	3	1	1
Take responsibilities with no regard to the outcome	1	1	1	1		
Take risks and believe in it	2	2	4	5	7	8
See more chances than risks	2	2	1	1	1	2
Try and believe in it			4	6	2	2
Deal with employees and budget workload	2	2	4	10	4	8
Motivate people			1	1	2	2
Give space for other people and ideas					5	6
Think and communicate inter-divisional			2	2	3	9
Speak and know from one another			3	4	8	19
Monitor the market and deal with customers	4	4	6	8	7	15
Look for future technologies			2	3	2	2
Recognize possibilities and decide					3	3
Have free space and try out new ideas					5	10
Be active and intervene	2	2	4	6	8	19
See chances and turn them into action			3	3	3	4
Be passionate					3	4
See things with a holistic point of view			6	7	4	5
Relates to the personality not an activity			2	2	5	6
Be aware and concerned about new possibilities					5	7
See how new ideas emerge					1	2
Budget resources			2	2	8	13
Challenge the existing world					6	14
Network					4	6
Learn from failures	1	2	4	4	7	12
Get the permission to act entrepreneurially			2	2	2	3
Don't give up after failures					2	3
Work in interfunctional teams	1	1			2	3

Table 9: Comparative table of activities of entrepreneurs

The activities of entrepreneurial active people are taken into consideration in this study because they give valuable insights into the actual entrepreneurial activity of an organisation. There are three key findings that could be identified as repeating pattern across all company size categories. These key findings display actual entrepreneurial activities but also refer to leadership topics, personality and capabilities more generally.

Firstly, it was emphasised that an entrepreneur monitors the market and deals with customers, which clearly refers to the corporate function of sales and marketing. This finding further supports the argument that people with direct customer contact are particularly involved in entrepreneurial activities.

The second key finding covers a couple of arguments that refer to leadership topics in general. One of them concerns decision-making. Across all company size categories it was emphasised that entrepreneurs make decisions and do not procrastinate things. Another one refers to the willingness of taking over risks and responsibilities. When it comes to innovative ideas and entrepreneurial activity it seems to be particularly important to see more chances than risks. Entrepreneurial active people further seem to be in need to have the permission to engage in entrepreneurial activities which also means that superiors are in charge to give them space for these activities. All of these aspects support the earlier outlined argument that entrepreneurial activity mostly happens on management or team leader level.

Thirdly, it was highlighted across all company sizes that an entrepreneur takes action and intervenes. That means, an entrepreneurially active person seems to be driven by personal curiosity and does not seem to be satisfied with the current status quo which is why these people constantly intervene, question and challenge things.

These activities can be seen in relation to the two earlier outlined main themes of corporate functions (see subsection 8.2.1) and organisational hierarchies (see subsection 8.2.2). The first key finding highlights the importance of direct customer contact which can be related to the corporate function of sales and marketing. The second key finding summarises activities that refer to leadership topics. This is related to the aspect of organisational hierarchies because the earlier findings showed that mainly people from management or team leader level are involved in entrepreneurial activities. Additionally, the third recurring pattern of taking action and intervening refers more to the personality of an entrepreneur than to a specific corporate function or organisational hierarchy (see subsection 8.2.7).

8.2.4 *Personal predisposition and learning*

Predisposition and learning	Small		Midsized		Large	
	CS-#	I-#	CS-#	I-#	CS-#	I-#
You either have it or not	3	4	6	12	10	26
You can learn it					3	3
You can partly learn it	1	1	3	4	4	8

Table 10: Comparative table of predisposition and learning

Table 10 shows the main results of the case study analysis concerning personal predisposition and learning. These findings about entrepreneurial spirit and the question of personal predisposition and learning can be understood as an additional sub item of this investigation. All cases of this study show the recurring pattern that entrepreneurial spirit seems to be something a person either has or does not. This is what could be revealed across all company size categories. However, few interviewees stated that a person can also learn or develop it but at least partly a personal predisposition is necessary to engage in entrepreneurial activities. Therefore, the argument of individual and organisational learning of Senge (1990) and Argyris and Schon (1996) only can be partly confirmed in this research context (see subsection 2.2.2). It appears that the individual predisposition and personality has a more crucial influence on entrepreneurial activity in this research context.

Additionally, the findings indicate that the affinity to liberties or guidelines of a person matters when entrepreneurial activities are concerned. Throughout all case studies most of the interviewees stated that people with a personal affinity towards liberties are more involved in entrepreneurial activities than people with an affinity towards rules and guidelines. This again is a finding that is related to the personality of an entrepreneurial active person and will be further discussed in subsection 8.2.7.

8.2.5 Intensities and concentration of entrepreneurial activity

Intensities and concentration	Small		Midsized		Large	
	CS-#	I-#	CS-#	I-#	CS-#	I-#
Happens in different intensities	6	6	5	10	7	16
No different intensities			1	1	1	3
Affinity to freedom matters	4	4	7	18	9	19
Affinity to freedom or guidelines does not matter					4	9

Table 11: Comparative table of intensities and concentration of entrepreneurial activity

Further, the findings across all company sizes indicate that entrepreneurial activity appears in different intensities as shown in table 11. This means that some people seem to be more involved in entrepreneurial activities than others respectively have different intensities of entrepreneurial spirit. The smallest level of entrepreneurial activity can be described with an optimised cost-benefit analysis during the daily routines and workload of a person compared to the highest level of creating and driving innovative product and service ideas across the organisation. As already outlined in subsection 8.2.2 this finding takes up on Schumpeter's relation of entrepreneurial activity and leadership (Schumpeter, 1927). It therefore appears that the existence of different intensities of entrepreneurial activity is interrelated to the leadership level of the involved entrepreneurial active people. However, this relation requires further research and might be taken up in other investigations for detailed analysis.

Still, the different intensities of entrepreneurial activity need to be seen in the light of different corporate entrepreneurship types as outlined in subsection 2.3.3 (Covin and Miles, 1999). The investigated case studies find themselves in different situations and circumstances that refer to several entrepreneurship types. It is not in the scope of this study to define different development levels of entrepreneurship and match entrepreneurship types with these activities but it clearly has to be mentioned that the analysis of the case studies showed different types of entrepreneurial activities in this sense.

When the theme of personal predisposition and learning and the theme of intensities and concentration of entrepreneurial activity are taken into consideration it has to be clarified that this investigation is of qualitative nature and therefore it is not the aim to measure entrepreneurial activities or entrepreneurial spirit. It further seems to be clear

that this finding not only relates to research of corporate entrepreneurship and entrepreneurial activities but also to questions of personality of entrepreneurial active people. That means these findings can only be discussed to a limited extend. However, in the context of a subdividing entrepreneurial function across an organisation and with the background of learning individuals as source of innovation and corporate entrepreneurship, it is interesting to notice that different intensities of entrepreneurial activity at all appear. Assuming that entrepreneurial activity needs some kind of personal predisposition but still can be learned to certain extend opens the idea that entrepreneurial spirit is partly learnable. At the end, it has to be noted that this finding is studied insufficiently within this research project and therefore is in need of further research.

8.2.6 Motivation of entrepreneurs

The reason why entrepreneurial active people are motivated to engage in entrepreneurial activities has many explanations. The following table 12 shows the list of motivating factors in this research project according to small, midsize and large companies.

Motivation of entrepreneurs	Small		Midsize		Large	
	CS-#	I-#	CS-#	I-#	CS-#	I-#
Personal responsibility	3	3	2	6	7	9
Philosophy and attitude towards work	3	4	1	1	1	1
Will to help	1	1			1	1
Consciousness of tradition in family businesses	1	1			1	1
Being recognized and acknowledged socially and for work success	1	1	5	8	9	16
Being recognized as natural authority	1	1			1	1
Personal vitality and energy	3	3	5	6	9	19
Rejoicing in work	4	5	4	7	6	9
Feeling to change something	2	2	4	7	8	14
Passion	1	1	1	1	2	2
Personal vision and goal	2	2	4	4	5	8
Wish of individual fulfilment	1	1	2	2	3	6
Trusting and believing in people	2	3			5	6
Financial incentives	3	3	4	5	4	6

Table 12: Comparative table of motivation of entrepreneurs

The findings about motivating factors of entrepreneurs (see subsections 4.7, 5.7 and 6.7) show that across all company sizes five main reasons emerged that are briefly reviewed in the following.

First of all, entrepreneurs appear to be motivated because of their sense of responsibility. Entrepreneurial activity therefore seems to be closely related to responsibility within a corporate setting. However, there are two sides of the medal when it comes to responsibility in the context of corporate entrepreneurship. On the one hand entrepreneurs have an intrinsic motivation and joy in taking over responsibility. On the other hand there are entrepreneurs who took over a family business with a long tradition and feel responsibility in continuing this work and renewing it in order to be and remain competitive (Tushman and O'Reilly, 1996). In larger companies the motivating factor of responsibility mainly refers to the intrinsic motivation.

Secondly, entrepreneurial active people want to be acknowledged for their ideas and performance. Especially in larger companies the creation of an innovative product or service idea leads to the desire of being acknowledged for this performance. Entrepreneurial active people appear to be proud of their ideas in this context.

A third motivating factor concerns the general energy and vitality of entrepreneurs. These people appear to always look out for new possibilities and chances to be exploited. This can be compared to the 'restless man' (see 2.2.3) outlined by Schumpeter (1949). This motivation also seems to come from the inside of a person. These people appear to rejoice in their work and in the possibility that they can actively change the status quo.

Fourthly, the personal vision and goal of entrepreneurs were highlighted in the investigated case studies. This refers to their broad sense for market developments and trends as well as their individual ken and point of view. It is this broad view that seems to enable these people to think beyond details and combine different knowledge fields.

The individual fulfilment of entrepreneurs within their work is the fifth motivating factor. Personal goals and visions also seem to be related to this factor. The creativity and urge to challenge existing worlds and create something new appears to be something that fulfils entrepreneurial active people. This could be identified throughout all company sizes in this research project.

Finally, it is interesting to see that financial incentives do not seem to play a key role in the motivation for entrepreneurial activity. Therefore, it can be stated that the drive for entrepreneurial energy seems to come from the inside of a personality.

8.2.7 *Personality, characteristics and capabilities of entrepreneurs*

The following table 13 provides an overview of the arguments concerning personality, characteristics and capabilities according to the interview and case study frequency.

Personality, characteristics and capabilities	Small		Mid-sized		Large	
	CS-#	I-#	CS-#	I-#	CS-#	I-#
Assertiveness	3	3	6	13	10	20
Courage	2	2	3	5	6	6
Mindset and attitude	3	3	5	8	8	26
Upbringing and education	1	1	5	7	6	13
Self-confidence	2	2	3	4	3	3
Robustness	1	1	3	3	1	1
Passion	1	1	3	3	3	3
Reflection	1	1	5	9	3	10
Public image			3	4	5	6
Experience			1	2	1	1
Age					3	3
Open culture	3	3	6	14	11	14
Trust	1	1	2	2		

Table 13: Comparative table of personality, characteristics and capabilities of entrepreneurs

Another important matter of the entrepreneurial function is related to the personality, characteristics and capabilities of entrepreneurial active people. The detailed findings in table 13 show that there are six features across all company sizes that appear to be prevalent when it comes to the personal constitution of an entrepreneur:

- assertiveness,
- confidence,
- robustness,
- courage,
- passion, and
- reflection.

Assertiveness, confidence, robustness, and courage all refer to the capability of pushing ideas against resistance in the organisation. Innovation is always related to change. Entrepreneurial active people therefore have to overcome certain obstacles in the innovation process and can be described to be especially assertive in this context to drive these ideas. Drawbacks and barriers belong to this process which makes it necessary for the entrepreneur not to back down in these conflicts. Therefore, courage and robustness is required to master these difficulties. These findings confirm the concept of Herbert and Link (2006) as outlined in subsection 2.2.1 that successful innovation is an act of will, not necessarily of intellect.

Passion further seems to be a personal characteristic that entrepreneurs have across all company sizes. It appears that in the process of driving innovative ideas in the organisation passion helps to convince others from these ideas. An entrepreneur seems to drive and share innovative ideas with others and therewith fascinate others.

The last important matter in this context refers to the personal reflection. Idea generation and processing of innovative ideas appear to involve different people along the whole process. That is why the personal reflection about strengths, weaknesses and limits of the entrepreneurial person and other contributors appears to be so important. It seems these personal limitations need to be taken into consideration when processing an innovative idea. The first step towards this process, however, seems to be self reflection and communication otherwise the barriers along the innovation process do not appear to be manageable (see subsections 7.2 and 7.3).

Before the different identified entrepreneurial roles are discussed in the next chapter it has to be mentioned that the outlined facilitating factors and barriers for entrepreneurial activity (see subsections 7.2 and 7.3) mainly served to characterise and understand the actual situation of each case study. It is clear that environmental and cultural aspects of an organisation also influence the entrepreneurial function. However, in a complex research area such as corporate entrepreneurship it is important to use as much information as possible to distinguish the phenomenon under study from its circumstances in the research context. That is why it was important to investigate and report about these influencing factors but due to research constraints it shall not be discussed in greater detail at this point. These results further give valuable insights into the managerial practice and are therefore reviewed as managerial implications later on (see chapter 9).

8.3 Entrepreneurial roles

The previous analysis highlighted the key factors of entrepreneurial activities. In the following the identified entrepreneurial roles shall be discussed with regard to their specific contribution to the entrepreneurial function of the company.

8.3.1 *Idea generator*

The creative role of the idea generator does not refer to one single person. In fact there are several people who appear to contribute to the entrepreneurial function as idea generators but with different backgrounds in the organisation. In this context three contributors could be identified that engage in the idea generation of product, process or service innovation.

First of all, the investigation brought up the role of the sales and marketing entrepreneur. This entrepreneurial role is a result of a recurring pattern of entrepreneurial activities that particularly refers to people from the department of sales and marketing. Sales and marketing entrepreneurs seem to play a key role for the entrepreneurial function. As outlined in subsection 8.2.1 it appears especially important to think in customers shoes. By doing that the sales and marketing entrepreneur seems to take up an ambidextrous role of getting new insights directly from the customers on the one hand and relating them to possible innovative ideas on the other. This idea generation could be identified as main contribution to the entrepreneurial function.

Another idea generator could be identified as technical expert. These specially gifted technicians in the production appear to come up with technical innovation in the production process or in tool constructions.

Furthermore, in companies with a separate department for research and development there is the role of the R&D entrepreneur who engages in experimenting and testing of innovative ideas to make them more concrete and visible.

Lastly, in the process of idea generation the role of the knowledge connector could be identified to contribute to the entrepreneurial function as well. This role has the specific capability of combining different knowledge fields and connects interfaces between different corporate functions. It appears that especially in larger companies this role is

of great importance due to the higher amount of functional specification in the organisation.

For the technological part of the innovation the sales and marketing entrepreneur seems to network with the earlier identified specially gifted technicians and the R&D entrepreneur in order to exploit entrepreneurial possibilities. Therefore, the role of the sales and marketing entrepreneur can be described as initially performing an integrating capacity. The above described role as knowledge connector is exactly what makes this integrating capacity to be so important for the entrepreneurial function.

The investigation of different company sizes further indicates that the specially gifted technicians are particularly important in midsized companies. This can be explained with the simple fact that most midsized companies are not able to afford a separate department of research and development. In large companies with dedicated research and development positions the role of the R&D entrepreneur becomes more important. Still, in large companies there are also specially gifted technicians who seem to play a key role for the entrepreneurial function. Therefore, it appears that in larger companies with a department of research and development the sales and marketing entrepreneur seems to network with both.

The role of the idea generator can be related to Schumpeter's (1934) early distinction between inventor and entrepreneur (see subsection 2.2.1). The here identified entrepreneurial role of the idea generator appears to mirror Schumpeter's inventor and therefore confirms his early thoughts about the division of the entrepreneurial function. However, up to now no research about the relation of this role to the existing corporate functions within the company and their organisational hierarchies could be found.

8.3.2 *Decision maker, risk taker and promotor*

The findings show that decision maker, risk taker and promotor also contribute to the entrepreneurial function. These roles can refer to a single person but can also be separated and involve several people.

The role of the decision maker mainly refers to the managing directors of the investigated companies as decisions are closely related to responsibility and therefore in

need of management power. In some cases it is possible that the role of the financial risk taker is not part of the management team of the organisation. This refers to the owner management structure of the respective company. Some owners of the companies are not involved in the day-to-day management business and are only informed about the monthly or quarterly financial status. However, when innovative ideas require higher investments the managing directors might need approval from the owners. In this context decision maker and risk taker are closely related and bring in the third role of the promotor. In case financial approvals for innovation projects are necessary the role of the promotor is taken by a management responsible who has respective power to drive and support ideas in the approval process.

It is further interesting to see that across all companies the head of finance and accounting does not appear to actively engage in this process. Financial calculation of business cases might be required but does not appear to be an active contribution to the entrepreneurial function and therefore is more of supporting character.

8.3.3 *Integrator and motivator*

When it comes to the support of the entrepreneurial function the emerged role of the integrator and motivator has to be outlined. Especially in mid-sized and larger companies this role seems to be of great importance in order to support innovative ideas in the implementation process. The findings show that after an innovative idea was communicated and decided to be introduced the role of the integrator and motivator becomes important. In some cases this role is fulfilled by the head of human resource management and supports new ideas, communicates a lot about it with different people in the organisation, listens to employees and their concerns about the new ideas and therewith supports the whole entrepreneurial function. This role can further be described to have convincing dimensions within the organisation because there are always people in the company with an attitude against change. In this context they integrate and motivate people to support innovative projects and therefore also promote innovation across the different hierarchical levels and employees of the organisation. However, the role of the integrator and motivator refers to a later stage of the innovation process and does not contribute to the idea generation itself.

8.3.4 *Relation to existing entrepreneurial roles*

Current scientific research already discusses a number of entrepreneurial roles that need to be taken into consideration when introducing new entrepreneurial roles. As outlined earlier in subsection 8.2.1 this research takes up on the ‘bootleg entrepreneur’ according to Augsdorfer as a person who carries out entrepreneurial activities within the department of research and development (Augsdorfer, 2012). In addition to that, the relation to already existing entrepreneurial roles needs to be discussed at this point.

The first one is the ‘intrapreneur’ coined by Pinchot (1985) as an in-house form of entrepreneurship. He described the intrapreneur as someone who envisions both the necessary product market, as well as management strategies (Pinchot, 1985). The concept of the intrapreneur slightly differs from the introduced idea generating roles. Whereas the intrapreneur seems to envision the product market, the sales and marketing entrepreneur has a clear understanding of customer needs because of the direct customer contact and further engages in integrating performance by networking with the technical experts and research bootleggers of the company. Therefore, the concept of the idea generator with more than one contributor appears to show a more differentiated picture in this context.

Furthermore, the concept of Louca’s (2014) daring entrepreneur could be confirmed by the research results to play a central role for the entrepreneurial function. The courageous, self-confident risk taker and decision maker (see 8.3.2) is exactly what Schumpeter emphasised when he wrote about specially gifted people who get things done. In smaller companies this refers to Schumpeter Mark I and in larger companies this refers to the several contributing roles to the entrepreneurial function: the idea generator, the decision maker, risk taker and promotor as well as the integrator and motivator. These contributing roles show Schumpeter’s entrepreneur Mark II in the setting of larger organisations. These contributing entrepreneurs appear to have individual experience and motivation for engaging in entrepreneurial activities. This is why the concept of Garud (2014) with the emphasis on important individual experiences in innovation can be confirmed in this research project as well. Entrepreneurs especially in larger organisations appear to be motivated for innovation not only because of their personality and motivation as shown in this research but also by their previous experiences in conducting entrepreneurial activities.

The next role to discuss at this point is the 'promotor' brought up by Witte (1973). The concept of the promotor, that later has been extended to the process promotor and the relationship promoter by Hauschildt and Gemünden (1999), describes a person who actively and intensively changes the innovation process by promoting innovative ideas of employees who otherwise would not be heard due to the aim and competence barriers. The introduced role of the idea generator cannot be understood as a promotor in this sense because it appears to be an entrepreneurial role of self-initiating character and therefore is not in need of a promotor. Furthermore, the relation of the entrepreneurial function to leadership positions indicates that the sales and marketing entrepreneur has certain responsibility and decision-making authorities in mid-sized companies. It seems that the integrating capacity the sales and marketing entrepreneur performs is not in need of a special promotor in order to be perceived in the corporation. However, in large companies the role of the decision maker, risk taker and promotor appears to be similar to Witte's role of the promotor. In this context it is important to see that Argwal and Shar (2014) give a hint for certain important corporate functions to the entrepreneurial function. The current research results on corporate functions (see 8.2.1) show that this statement can be specified with a special emphasis on sales and marketing as well as some technical expert departments, and if existent the department of research and development. These functions appear to be crucial for the entrepreneurial function to be carried out especially in larger and therefore more complex organisational settings.

Further, the role of the 'change agent' (Oberg, 1972) as a form of transformational leader who brings about radical change and espouses new and different beliefs and values is considered. This research highlights the sales and marketing entrepreneur not only because of the deep understanding of the customer needs as source for innovative ideas but also emphasises the entrepreneurial activities and new combinations this role performs. Therefore, the sales and marketing entrepreneur can be understood as a role with change agent capabilities.

The 'gate keeper' concept, developed by Allen (1966), emphasises boundary-spanning individuals who are connected to internal and external domains. Furthermore, the gate keeper is described as someone with a greater degree of informal contacts with members of the scientific and technological community outside of their own organisation (Allen and Cohen, 1969). The presented sales and marketing entrepreneur

could be identified as someone with boundary-spanning thinking but cannot be compared to a gate keeper with contacts to the scientific literature and community. This investigation therefore only supports the boundary-spanning part due to the direct customer contact.

Lastly, the 'product champion' was introduced in the context of radical new inventions by Schon (1963). The scientific community used the term 'champion' in many ways when researching entrepreneurial roles (Chakrabarti, 1974, Howell and Higgins, 1990, Howell and Boies, 2004, Klerkx and Aarts, 2013). The original product champion as Schon introduced it, referred to a person with considerable power and prestige as well as comprehensive interests in technology, marketing, production and finance (Schon, 1963). This concept provides a broad description of an entrepreneurial active person. The sales and marketing entrepreneur of the current investigation has similar comprehensive interests otherwise this person would not be able to perform the integrating capacity. However, the relation of the sales and marketing entrepreneur to a certain corporate function serves to describe the entrepreneurial contribution in a more detailed way than Schon did in this concept of the product champion.

8.4 The evolution of the entrepreneurial function

The previous subsections highlighted the key findings of this investigation with the identified entrepreneurial roles. Now, the central research question about how the entrepreneurial function splits up across an organisational setting can be described in a more consistent way. Therefore, this subsection outlines how the entrepreneurial function is carried out within each case and company size category with regard to the identified entrepreneurial roles. This shows how the detailed findings about entrepreneurial activities, their dynamics and involved entrepreneurial roles contribute to describe the entrepreneurial function.

8.4.1 *The entrepreneurial function in small companies*

The six investigated small company case studies present a homogenous picture when entrepreneurial activity is concerned. It can be pointed out that the entrepreneurial function in case study CS-01 is concentrated on the managing director of the company. Even though there are overlapping responsibilities within the team of thirteen employees (CS-01) it clearly seems to be the managing director who carries out entrepreneurial activities such as monitoring the market, making strategic decisions concerning customers and new technologies. The same pattern appears in the rest of the small company case studies (CS-02, CS-03, CS-04, CS-05, CS-06). However, the case studies CS-02 and CS-06 both have two equally responsible managing directors. Although they split up their tasks and responsibilities, both of them seem to be crucial for the entrepreneurial function. It therefore is indicated that within small companies the managing directors are mainly important to fulfil the entrepreneurial function. They can be described to combine the roles of decision maker, risk taker, idea generator, knowledge connector, integrator, and motivator. As outlined in the literature review this finding was already anticipated and is therefore not surprising. It still can be noted that this implication of the concentration on managing directors could be affirmed by the findings of this research project.

8.4.2 *The entrepreneurial function in midsized companies*

Within the seven midsized company case studies there is also a tendency that the management level is important for the entrepreneurial function. In case study CS-07 the entrepreneurial function is carried out by three managing directors especially the one with responsibility for sales and marketing. In case study CS-08 there are two managing directors who share responsibilities and both carry out entrepreneurial activities. In case study CS-09 the managing director who is responsible for sales and marketing as well as a project manager who is further responsible for technical sales carry out the entrepreneurial function. Further, in case study CS-10 it is the deputy general manager who is also responsible for human resource management. Case study CS-11 has a factory manager and managing director who is in charge of sales. Both of them seem to be carrying out the entrepreneurial function. In case study CS-12 the managing director

and founder of the company can be pointed out as entrepreneurial active. However, there is one specially gifted technician who plays an important role for the entrepreneurial function when it comes to innovative technological ideas. Therefore, it can be stated that here the entrepreneurial function is carried out cooperatively as well. Lastly, in case study CS-13 the managing director who is responsible for sales and technological development seems to be crucial for the entrepreneurial function. Furthermore, two gifted technological engineers are involved when it comes to innovative ideas. In this case the entrepreneurial function is carried out cooperatively again.

At the end it can be summarised that the entrepreneurial function in mid-sized company case studies starts to split up into a cooperatively carried out function. Mostly managing directors with responsibilities for sales and marketing as well as a few specially gifted technicians seem to be involved in entrepreneurial activities. The managing directors fulfil the role of the decision maker, financial risk taker, and promotor in this context. The specially gifted technicians play the role of the main idea generator.

8.4.3 *The entrepreneurial function in large companies*

The eleven investigated large company case studies present a more differentiated picture. In case study CS-14 it is clearly the two managing directors who share responsibilities and carry out the entrepreneurial function. It further seems that in case study CS-15 the managing director as well as a few team leaders seem to carry out the entrepreneurial function cooperatively. The case studies CS-16, CS-17, CS-18, CS-19, CS-20, CS-21 and CS-24 have a similar pattern how the entrepreneurial function is carried out. In all of these five cases the managing directors who are in charge of sales and marketing as well as few sales manager and technical experts carry out the entrepreneurial function cooperatively. The case CS-18 more specifically has a position of strategic marketing and product development and a head of sales that seem to integrate the entrepreneurial function. Further, there are two case studies (CS-22, CS-23) where the entrepreneurial function can be identified for the single investigated business sector but not for the whole company as these are very large corporations and not in all business sectors interviews could be conducted. Therefore it can be stated that within the investigated sectors the entrepreneurial function is carried out by the regional

managing directors as well as the innovation responsible. It has to be further noted that these case studies have reached a size where an especially dedicated position for innovation management is available. This seems to be part of the entrepreneurial function as well but due to the appearance of a dedicated innovation management in only one case study this relation could not be investigated in greater depth.

Therefore, it can be summarised that within large companies it seems to be even more important to cooperatively carry out the entrepreneurial function. The division of the entrepreneurial function is even more apparent in large companies because people on different organisational hierarchies seem to be involved. This is indicated as more people from different functions seem to be involved such as the managing directors mostly with responsibility for sales and marketing, a few technical experts as well as people from product development and innovation management if existent. Furthermore, throughout almost all cases it could be verified that the function of finance and controlling is not involved in the entrepreneurial function at all.

When the identified entrepreneurial roles are concerned the dilution of the entrepreneurial function becomes even more apparent. The role of the decision maker, risk taker and promotor of innovative ideas mainly refer to the managing directors and their contribution to the entrepreneurial function as assertive, self-confident, and tough personalities. The idea generation includes the sales and marketing entrepreneur from the corporate function of sales and marketing, the technical experts in the production, as well as the bootleg researchers from the department of research and development. The sales and marketing entrepreneur, however, can be described as main driving force of the idea generation because of the active engagement in networking, communication about new ideas, and experiments to try and test innovative ideas. These people are described to be driven by their curiosity and inner restlessness about specific market opportunities that can be exploited. Therefore, the knowledge connector role also mainly refers to the sales and marketing entrepreneur who is still in need of technological support. Additionally, the role of the integrator and motivator can be assigned mainly to human resource management responsible people in the organisation. Their relations and networks within the company help to actively support innovative ideas in the implementation phase.

8.4.4 Allocation of the entrepreneurial function

Throughout all company sizes the entrepreneurial activity of monitoring the market and dealing with customers appear to be crucial for the entrepreneurial function. This displays why especially people with direct customer contact or responsibility for sales and marketing seem to be involved in the entrepreneurial function. When further different sizes of companies are taken into consideration it appears that the entrepreneurial function seems to split up across the corporation the bigger the company gets. This finding confirms that the entrepreneurial function is carried out cooperatively as more people are involved in entrepreneurial activities. The managing directors with responsibility for sales and marketing as well as the few specially gifted technicians and people from product development in research and development seem to play key roles within the entrepreneurial function especially in mid-sized and large companies. The corporate functions of sales and marketing, research and development as well as production seem to possess the entrepreneurial function. It clearly can be stated that the integrating performance of knowledge connectors get more and more important as the company gets bigger and involves more people in more separated and specialised corporate functions. Moreover, it appears that other corporate functions such as finance and controlling, human resources and procurement seem to be more of a supportive nature when the entrepreneurial function is concerned.

This kind of inter-disciplinary collaboration has to be considered in the light of innovation networks within the company. The latest contribution of Klerkx and Aarts (2013), for instance, relates the interaction of multiple champions to innovation networks. However, their research concentrates on defining innovation communities across companies and other external institutions. Even if they include the interaction of different champions these findings do not provide insights into the internal division of the entrepreneurial function. Therefore, this contribution to an overall innovation network is too superficial for the detailed question of an entrepreneurial function across different corporate functions, organisational hierarchies and intensities of one corporation.

The subdivision across different organisational hierarchies and also intensities further shows that the entrepreneurial function is allocated differently in every single case and therefore not easy to determine. The introduced roles and network of the entrepreneurial

function are fulfilled by different people. The patterns of the recurring roles, however, could be identified with regard to their contribution to the entrepreneurial function. Schumpeter (1949) described the entrepreneurial function that often is filled out cooperatively especially in larger corporations. The link from contributing corporate functions to entrepreneurial active people and vice versa is a key outcome of this research project. The outlined evolution and allocation of the entrepreneurial function can be interpreted to show the dilution from Schumpeter's entrepreneur Mark I to Mark II (see subsection 2.2.1). The Schumpeter Mark I model is described as an evolution from routine behaviour especially in smaller companies. This is what the outcome of this research projects fully confirms as already assumed at the beginning of this investigation. The managing directors and team leaders play a significant role for the entrepreneurial function and represent Schumpeter's entrepreneur Mark I.

The special consideration of large firms brought up Schumpeter's entrepreneur Mark II. Augsdorfer (2012) already identified the research bootleg entrepreneur. But with the idea of a cooperatively carried out entrepreneurial function Schumpeter asked for the allocation of these contributors. The current research project suggests a set of corporate functions and entrepreneurial roles that build up exactly this cooperatively carried out entrepreneurial function in larger companies. When mid-sized organisations were investigated the first signs of a dilution of the entrepreneurial function could be identified with the managing directors, team leaders and technical experts that contribute with their entrepreneurial activities to foster innovation. In larger companies the entrepreneurial function splits up in even more contributing roles as outlined in subsection 8.4.3. That is why this contribution allows a suggestion about the allocation of the entrepreneurial function when companies get bigger.

8.5 Summary and outlook

The findings of this research project show that research in the field of corporate entrepreneurship is a complex area. This chapter discussed the current study's findings about the evolution of the entrepreneurial function in different company sizes. When different corporate functions are concerned three functions appear to be of entrepreneurial nature. Sales and marketing, production and research and development, if existent as a dedicated corporate function, could be identified to be crucial for the cooperatively carried out entrepreneurial function. Other corporate functions such as finance and controlling, human resources and procurement seem to be more of supporting nature. Furthermore, the findings indicate a relation of entrepreneurial activity to leadership as well as to different intensities. These findings refer to interesting questions for further research. In addition, the division of the entrepreneurial function according to the investigated cases in different company size categories was discussed. These interpretations further allowed the introduction of different contributing entrepreneurial roles such as the idea generating role of the sales and marketing entrepreneur as crucial role for the entrepreneurial function. The relation to other already identified entrepreneurial roles was discussed and the inter-disciplinary collaboration with specially gifted technicians and R&D entrepreneurs was outlined.

The following conclusion chapter will take up on the current discussion and further explain how the initial research question is answered in this research project. It will also highlight the contribution to theory and the contribution to practice of this research project and give an overview of managerial implications.

Chapter 9. Conclusion

Entrepreneurial activity appears to be the powerful innovative engine across many companies and industries. Entrepreneurs help companies to counteract uncertainty and adapt to changes on the market through organisational learning in order to remain competitive. In the increasingly fast moving world of today the entrepreneur therefore appears to be a key success factor.

9.1 Main contributions of this research project

The initial research aim and focus of the study is concentrated on Schumpeter's early idea of the entrepreneur and the entrepreneurial function. He described the entrepreneur as active, restless, opportunity searching and creative individual (Schumpeter, 1989) that is further referred to as Schumpeter Mark I. In his later work Schumpeter untied the entrepreneurial function to be embodied in a physical person and in particular in a single physical person (Schumpeter, 1949). This concept of Schumpeter Mark II created the possibility that several individuals contribute to this function with entrepreneurial activities. According to his interpretation of the entrepreneurial function in the large scale corporation it is carried out cooperatively because no single individual alone combines the necessary aptitudes for it (Schumpeter, 1949). Therewith, he outlined the difficulty to name individuals that act as the entrepreneur in larger organisations. Over the last decades a number of researchers identified certain entrepreneurial roles but failed to relate them to the collaborating network of the entrepreneurial function. This transition from single entrepreneurial active individuals (Schumpeter Mark I) to a cooperatively carried out entrepreneurial function (Schumpeter Mark II) was identified as major challenge and research gap up to now. Therefore, the initial research question of how Schumpeter's entrepreneurial function subdivides in the larger organisation of today was addressed in this research project.

The research process was designed to incorporate a broad range of factors. Therefore, different company sizes, industries and branches were included. Entrepreneurial activity was referred to all kind of innovation within the investigated company because it was tried to cover deep insights without restricting the explorative research scope by only focussing on radical innovation for instance. The inductive research approach of

qualitative nature applied a combination of grounded theory and case study research to investigate different organisations as unit of analysis. 97 interviews in six small, seven mid-sized and eleven large companies offered deep insights in the daily practice of entrepreneurial activities. The interviews serve as primary data and were analysed with a twofold approach of cross-case pattern matching and case report analysis. It is clear that this investigation has its limitations in generalisability due to the relative small sample of 24 case studies. However, it was tried to create new theory about the subdivision of the entrepreneurial function in larger companies rather than testing existing theory.

The findings of the investigation are presented according to the emerged main themes in the study. The questions about corporate functions, organisational hierarchies, activities of entrepreneurs, a possible personal predisposition and the relation to learning, different intensities of entrepreneurial activity, the motivation of entrepreneurs, as well as the personality and characteristics of entrepreneurs are taken into consideration. With the help of the existing descriptions of the entrepreneur according to Schumpeter and other developed entrepreneurial roles it was tried to identify entrepreneurial active people within the different companies under study. In this process the detailed case reports of each company supported the analysis of the dynamics of the entrepreneurial activity case-by-case. In the end of the analysis phase three entrepreneurial roles could be identified to be crucial for the entrepreneurial function:

1. First of all, the role of the idea generator appears to play the crucial role of performing invention, knowledge combination, networking and experimentation. This individual seems to be driven by an inner curiosity and restlessness. Interestingly it could be outlined that the role of this idea generator has a specific relation to the corporate function of sales and marketing, production and research and development. In the small company all kind of entrepreneurial activity is centralised at the managing directors. In mid-sized companies it appears that idea generators are located in the function of sales and marketing fulfilled by people with direct customer contact and deep understanding for market trends and market needs, as well as in the production as technical experts with innovative technological ideas. Large companies often can afford a separate department of research and development. That is why in larger corporations the idea generator also can be found in this department. However, in both mid-sized and large companies the

collaboration of idea generators across the functions of sales and marketing, production and research and development appears to be crucial for the success of entrepreneurial activity. This collaboration could be identified as main integration performance and seems to be the engine of innovative idea creation. Interestingly this integration performance could be identified to be mainly driven by the sales and marketing entrepreneur because of intensive communication and networking skills.

2. Secondly, the role of the decision maker and risk taker could be identified. This role mainly refers to management responsible in mid-sized and large companies who engage in entrepreneurial activity by promoting innovative ideas in a courageous, self-confident, and assertive way. In some cases however, the financial risk taker is not involved in the daily business of management and therefore plays a separate role where financial approval is necessary when it comes to large investments. Strategically however, the decision maker is the central role to foster and promote innovation projects within the company. In the context of the risk taker it is further interesting to note that the corporate function of finance and controlling does not seem to contribute to the entrepreneurial function at all.
3. The third role refers to a more supportive character after an innovative idea is decided to be implemented. This role is described as integrator and motivator within the organisational system who facilitates innovation by communicating and discussing the resulting consequences and changes within the organisation with different employees. This role was mainly identified to be fulfilled by responsible people for human resource management.

These three identified entrepreneurial roles and their specific collaboration is the main contribution to theory of this research project. They are suggested to show the dilution of Schumpeter's entrepreneur Mark I to Mark II in the larger corporation with regard to their corporate functions. Therefore, the cooperatively carried out entrepreneurial function can now be described in the specific context of larger corporations. The focus on the corporate functions of sales and marketing, production (with technical experts), and if existent the corporate functions of research and development can be emphasised as key contribution to the cooperatively carried out entrepreneurial function that Schumpeter asked for many years ago. Furthermore, the finding that finance, controlling and accounting are of no contributing value to the entrepreneurial function

could be shown throughout all case studies and company size categories. The findings present a clear and consistent result. Therefore it can be stated that the corporate function of finance, controlling and accounting is needed in the management of the company but not necessarily for the innovation process itself.

9.2 Managerial recommendations

In addition to that the research findings allow for a few managerial recommendations. Companies with the aim to innovate should be aware of their entrepreneurial power. I would like to point out four main recommendations for companies in order to get a clearer understanding of their entrepreneurial function and make value of it.

(1) Identify entrepreneurial active people of your company

No matter what company size, the first step of exploiting entrepreneurial power of your own company is to identify those people who are engaged in entrepreneurial activities. Especially people with direct customer contact are of possible value to come up with new ideas based on their experiences of customers' direct needs. According to the findings of this research project, entrepreneurial active people can be described as courageous, self-confident, robust, passionate, open, and reflected people. Entrepreneurial active people might also be identifiable by being good decision makers when it comes to new ideas. The findings show that these people tend to see more chances than risks when it comes to something new that could turn out to be a sellable product or service. This is where the capability of personal reflection is important because people with critical self-reflecting capabilities tend to be aware of strengths, weaknesses and limitations of entrepreneurial activities and therefore develop a more realistic picture of a further success for the company.

It is also shown that these people are full of curiosity and willing to invest energy, time and thoughts into innovative ideas for the company. In discussions about new product and service ideas they appear to intervene a lot and actively engage in argumentations. I recommend looking for this kind of people in your company and talk to them about their passion and interest in entrepreneurial activities. This needs to happen with a very open mind conversation so that the people get the feeling of really talking about what they are passionate about which does not exactly need to match with their daily tasks of their jobs.

(2) Be aware on how these entrepreneurial active people contribute to the entrepreneurial function of your company

The managerial awareness of the previously identified entrepreneurial roles and their contribution is very important for companies and especially for managing directors and team leaders with the aim to foster innovation in their company. When you identified entrepreneurial active people in your company I recommend to think about what kind of entrepreneurial role they play in the whole entrepreneurial process. It is important to find out who is an idea generator, a decision maker, risk taker or promotor, or an integrator and motivator in your company and if and how they collaborate. As previously discussed these roles can be carried out by different people who contribute to the entrepreneurial function. I recommend being aware on how this entrepreneurial contribution puzzle works in your company.

(3) Foster entrepreneurial activities

When you are aware of the entrepreneurial function of your company and the people who are involved in it I recommend to take measures in order to foster their entrepreneurial activities. The findings show that a facilitation of the entrepreneurial function is possible in all company size categories. Entrepreneurially involved people need the permission to act like an entrepreneur without hiding it. They need the permission to engage in entrepreneurial activity as sometimes this requires other performances than those written in their direct job descriptions and their daily business. The results of this research clearly show that entrepreneurial active people need to be enabled. This can happen by sending them to trainings or coaching's but also through challenging these people. Some of them might not dare to spend more time of their daily work hours on innovative ideas because they fear to get in temporal delays with the rest of their workload. People with entrepreneurial capabilities usually already have a huge workload. That is why enabling and encouraging them by prioritizing their entrepreneurial activities amongst other topics could be a huge help. This recommendation refers to managing directors or members of the management board as well as to employees to uncover entrepreneurial activity and make it discussable.

Leadership is also a big facilitation possibility that I recommend to all managing directors who aim for more entrepreneurial activity in their companies. Setting an example by the own leadership style with a focus on people is very important for fostering entrepreneurial activity. If your employees do not have the impression that

you value what they do especially when it comes to entrepreneurial activities they will not voluntarily risk of being criticized on that matter. That is why encouragement and appreciation are key leadership topics in this context. Furthermore, I recommend fostering inter-disciplinary collaboration of these entrepreneurial active people and giving space for their own processing and contribution to innovation. This could be implemented by allowing them once in a while to share new ideas and experiences in a safe environment outside of the company for a day.

(4) Be aware and minimize barriers to entrepreneurial activities

Sometimes it is easier to minimize existing barriers than actually facilitating entrepreneurial activity with concrete measures. Before this can happen it is important to be aware of what actually hinders entrepreneurial activity in your company and to reflect on how to minimize these barriers with a realistic agenda of measures. The reasons for barriers of entrepreneurial activities are diverse as discussed in chapter 7. I recommend asking entrepreneurial active people about what they need in order to be free to engage more in entrepreneurial activities. In many cases people tried to contribute to the entrepreneurial function but got frustrated because either the workload of their routine business is too heavy and therefore there is no time for actual entrepreneurial activity or their entrepreneurial activities were not appreciated or new ideas or suggestions remain unanswered. Extensive personal feedback and communication about welcoming entrepreneurial motivation is crucial to minimize frustration barriers and to overcome entrenched habits. The larger the company the more regulations, standards and guidelines of the organisation usually exist that can be understood as tough targets for the company with very limited openness for new creative ways of thinking. For entrepreneurial activity it sometimes is necessary to avoid this kind of regulations and continue with an unusual way of idea generation for instance.

In order to minimize the barriers in your company I recommend reflecting on these reasons and try to paint a realistic picture of your own barriers in daily business and start communicating about it. It is not always necessary to implement concrete measures of how to minimize the identified barriers. The communication about the awareness of these barriers can be a great start and opener for more entrepreneurial activity because people feel understood and appreciated and therefore encouraged to further engage in entrepreneurial activities.

The identified entrepreneurial roles, the involved corporate functions and organisational hierarchies, as well as their necessary collaboration are suggested to facilitate knowledge, comprehension and development of the entrepreneurial function within your corporate environment. This might look like an easy four step method to entrepreneurial heaven but there are a few limitations that need to be considered. First of all, it could be possible that not all of the outlined entrepreneurial roles are actually filled out by someone in your company. In this case it could be useful to enable someone for this role if possible.

This research was carried out in different company size categories but the four steps need to be considered slightly different for each size. Therefore, in small companies where mainly managing directors and team leaders are involved in entrepreneurial activities, you might try to get other people involved in responsibility and new idea creation. I recommend talking about your vision of the company and further development possibilities in order to encourage people to engage in thinking about entrepreneurial possibilities for the company.

In midsized companies the identification of entrepreneurial active people might be easier but the way to foster it might be challenging in daily business due to limited resources. I recommend taking easy and realistic measures of facilitating entrepreneurial activities and especially increasing the communication about it.

In large companies the identification of entrepreneurial active people might be harder due to larger number of employees and higher complexity of the organisation. But once they are identified it might be easier to foster these activities due to more available resources that can be involved in facilitating measures.

These managerial recommendations refer to managing directors as well as interested or already engaged entrepreneurs within their organisations. The simplest rule to get started with it is to try it out and see how it influences your daily business. In the following a few more general implications are outlined in subsection 9.3.

9.3 Implications

Further on, the presented original research contribution has to be seen in relation to a few more general implications. Entrepreneurial activity is a priori implicated to be something good and desirable in every company and every industry. This thought leads to the question whether entrepreneurial activity is actually wanted in the organisation. In this research project entrepreneurial activity is understood to be of value creating nature for the company it takes place in. However, there is no track in the sense of resulting consequences. It is more based on good intentions. This leads to another implication that every company actually has or needs an entrepreneurial function that can be identified and described. This implication also points into the direction of the general research community and the current state of knowledge. Entrepreneurial activity is understood as main innovative engine. It is possible that the current research focus fosters a confirmation bias throughout the research community but the question whether there are other sources that drive innovation within the company remains unanswered.

The research question of this investigation could be answered to the above outlined degree but is well aware of its implications and limitations. In order to encourage continuing research in this area ideas for further research are presented in the following.

9.4 Further research

This investigation brought up further questions and research possibilities that could not be answered in the current investigation. In order to strengthen the herewith developed analytical framework of the dilution of the entrepreneurial function in larger companies and answer the emerged additional questions I suggest the following four ideas for further research.

The first idea refers to the concentration on specific industries. Since this research project was based on a cross-case and cross-industry study further research could be undertaken in the single fields or industries. An industry focus for instance could develop further propositions about of the entrepreneurial function and its characteristics in a specific branch. In a next step these in depth industry focused investigations could be compared to outline possible differences across industries.

Secondly, the identified analytical framework of three entrepreneurial roles, their relation to specific corporate functions and their collaboration as integrating performance could be tested with the help of a quantitative investigation with surveys for further evidence of the dilution of the entrepreneurial function.

Thirdly, the research focus on incremental or radical innovation only could be interesting in this context. Further studies could show whether there is a difference in the constitution of the entrepreneurial function and its contributors when incremental and radical innovation are investigated separately.

The fourth research idea refers to major companies. The investigated companies of this research project did not include major corporations and concerns. These large entities often have a dedicated innovation management department which creates a different situation. The question is whether a dilution of the entrepreneurial function from Schumpeter Mark I to Mark II is still identifiable or too complex because of the many more employees and therefore involved people in the company.

Appendices

Appendix A: List of conducted interviews

SMALL COMPANIES				
No	CS	ID	Date	Function
1	CS-01	I-14	02.04.2012	Managing director
2	CS-01	I-16	17.04.2012	Head of research and development
3	CS-02	I-27	08.05.2012	Managing director
4	CS-03	I-39	11.07.2012	Managing director
5	CS-04	I-33	06.06.2012	Managing director
6	CS-05	I-30	15.05.2012	Team leader ideation and innovation design
7	CS-06	I-29	14.05.2012	Managing director

MIDSIZED COMPANIES				
No	CS	ID	Date	Function
8	CS-07	I-63	09.08.2012	Managing director
9	CS-07	I-64	09.08.2012	Managing director
10	CS-07	I-65a	09.08.2012	Managing director
11	CS-07	I-66	09.08.2012	Engineering manager
12	CS-07	I-67	09.08.2012	Planning process and training
13	CS-07	I-68	09.08.2012	Tool construction
14	CS-07	I-65b	06.08.2013	Managing director
15	CS-08	I-56a	31.07.2012	Managing director
16	CS-08	I-56b	26.06.2013	Managing director
17	CS-09	I-31	06.06.2012	Managing director
18	CS-09	I-32a	06.06.2012	Project management and technical sales
19	CS-09	I-32b	27.06.2013	Project management and technical sales
20	CS-10	I-36a	03.07.2012	Managing director
21	CS-10	I-36a	03.07.2012	Head of human resources
22	CS-10	I-36b	28.06.2013	Head of human resources
23	CS-11	I-28a	09.05.2012	Factory manager
24	CS-11	I-28a	09.05.2012	Head of purchasing department

25	CS-11	I-28b	26.06.2013	Head of purchasing department
26	CS-12	I-47	23.07.2012	Managing director
27	CS-12	I-48	23.07.2012	Managing director
28	CS-12	I-49	23.07.2012	Sales manager
29	CS-12	I-50	23.07.2012	Quality manager
30	CS-12	I-51	24.07.2012	Project manager
31	CS-12	I-52	24.07.2012	Head of production
32	CS-12	I-53	24.07.2012	Head of construction
33	CS-13	I-23	07.05.2012	Head of product development
34	CS-13	I-24	07.05.2012	Head of quality
35	CS-13	I-25	07.05.2012	Managing director
36	CS-13	I-26a	07.05.2012	Head of engineering
37	CS-13	I-26b	28.06.2013	Head of engineering

LARGE COMPANIES				
No	CS	ID	Date	Function
38	CS-14	I-41a	13.07.2012	Managing director
39	CS-14	I-41b	26.06.2013	Managing director
40	CS-15	I-46a	19.07.2012	Managing director
41	CS-15	I-57	31.07.2012	Head of engineering services
42	CS-15	I-58	02.08.2012	Team leader car security
43	CS-15	I-59a	02.08.2012	Head of development
44	CS-15	I-60	02.08.2012	Head of computer simulation
45	CS-15	I-70	05.09.2012	Head of construction
46	CS-15	I-71	11.09.2012	Head of experiments
47	CS-15	I-74	18.09.2012	Team leader process management
48	CS-15	I-59b	26.06.2013	Head of development
49	CS-15	I-46b	03.07.2013	Managing director
50	CS-16	I-01	26.01.2012	Founder of the company and former CEO
51	CS-16	I-02a	02.02.2012	Head of legal department
52	CS-16	I-03	02.02.2012	Head of accounting
53	CS-16	I-04a	02.02.2012	Head of purchasing department
54	CS-16	I-05a	02.02.2012	Head of finance and controlling

55	CS-16	I-06a	03.02.2012	Head of human resources
56	CS-16	I-07	03.02.2012	Head of quality and environmental affairs
57	CS-16	I-08	03.02.2012	Head of production
58	CS-16	I-06b	24.02.2012	Head of human resources
59	CS-16	I-09	27.02.2012	Chief financial officer (CFO)
60	CS-16	I-05b	27.02.2012	Head of finance and controlling
61	CS-16	I-02b	02.03.2012	Head of legal department
62	CS-16	I-10	05.03.2012	Head of industrial engineering
63	CS-16	I-11	05.03.2012	Head of research and development
64	CS-16	I-12	10.03.2012	External consultant quality management
65	CS-16	I-13	12.03.2012	Chief executive officer (CEO)
66	CS-16	I-04b	16.03.2012	Head of purchasing department
67	CS-16	I-06c	27.06.2013	Head of human resources
68	CS-17	I-40a	11.07.2012	Sales manager
69	CS-17	I-44	18.07.2012	Managing director
70	CS-17	I-45	18.07.2012	Managing director
71	CS-17	I-40b	26.06.2013	Sales manager
72	CS-18	I-62	06.08.2012	Director strategic marketing & business development
73	CS-18	I-75	24.09.2012	Sales manager
74	CS-19	I-22	27.04.2012	Publishing director
75	CS-19	I-34a	28.06.2012	Managing director
76	CS-19	I-37	05.07.2012	Managing director
77	CS-19	I-38	05.07.2012	Chief editor
78	CS-19	I-55	26.07.2012	Managing director
79	CS-19	I-69	14.08.2012	Managing director
80	CS-19	I-34b	02.07.2013	Managing director
81	CS-20	I-42a	17.07.2012	Head of business development
82	CS-20	I-42b	03.07.2013	Head of business development
83	CS-21	I-43	18.07.2012	Managing director
84	CS-21	I-54	26.07.2012	Managing director
85	CS-22	I-73a	18.09.2012	Product and regional manager
86	CS-22	I-73b	26.06.2013	Product manager
87	CS-23	I-15a	16.04.2012	Head of portal development
88	CS-23	I-35	02.07.2012	Head of digital global product development

89	CS-23	I-15b	01.07.2013	Head of portal development
90	CS-24	I-18	24.04.2012	Head of project management and innovation
91	CS-24	I-19	26.04.2012	Managing director
92	CS-24	I-20	26.04.2012	Managing director
93	CS-24	I-21a	26.04.2012	Head of transport services
94	CS-24	I-21b	12.08.2013	Head of transport services

EXPERTS				
No	CS	ID	Date	Function
95	Expert	I-61	02.08.2012	Manager information technologies
96	Expert	I-72	14.09.2012	Product manager
97	Expert	I-17	17.04.2012	Managing director

Appendix B: Semi-structured interview guide

Overview:

- introduction: person & topic
- introduction of interview partner: working area, tasks, role, etc.
- prepared questions

Information at the beginning:

- all information will be handled anonymously
- handwritten notes – no recording
- results will be provided after evaluation
- aim is to listen to what you share from experience

Topic:

- entrepreneurial spirit / entrepreneurial activities
 - o being active creative; drive things
 - o maybe taking risks to get things done
- outcome is not only new product development- also:
 - o cost reduction, improvement of processes or image, organisational topics
- not everyone who has a good idea is an entrepreneur – involved in entrepreneurial activities
- I'm looking for the entrepreneurial spirit and try to find out what that is, how it takes place or manifests itself in large corporations
- basic idea: in a small company it is the managing director who is the entrepreneur – but how does that work in larger corporations

Introduction of interview partner:

- working area, role, main tasks at the moment
- number of employees in department

Questions:

8. Where does entrepreneurial activity take place in the organisation?
(organisational level, corporate function)
9. What exactly is it that people do that would make them an entrepreneur?
10. Do certain personalities, characteristics or capabilities of people play an important role to enable them to be an entrepreneur?
11. What is the motivation of people who act entrepreneurially?
12. Do different levels of entrepreneurial action exist that are related to the personal affinity to guidelines or freedom in their daily work?
13. How can entrepreneurial activity be facilitated?
14. Are there any kind of barriers that hinders entrepreneurial action?

Appendix C: Results matrices of key themes in small companies

1. Corporate functions:

		SMALL COMPANIES				
		Statement / proposition	Evidence			
			Case Study	CS-#	Interview ID	I-#
Corporate functions	P-07a	Innovative ideas mainly come from people with direct customer contact.	CS-04	1	I-33	1
	P-09a	Some people in technical positions have entrepreneurial spirit as well.	CS-01; CS-03; CS-06	3	I-14; I-39; I-29	3

2. Organisational hierarchies:

		SMALL COMPANIES				
		Statement / proposition	Evidence			
			Case Study	CS-#	Interview ID	I-#
Hierarchical levels	P-01	There are overlapping responsibilities across different functions because people do more than one job in one function.	CS-01; CS-03	2	I-14; I-16; I-39	3
	P-02a	The managing directors and the team leader level (if existent) mainly have entrepreneurial spirit.	CS-01; CS-02; CS-03; CS-04; CS-05; CS-06	6	I-16; I-27; I-39; I-33; I-30; I-29	6

3. Activities of entrepreneurs:

		SMALL COMPANIES				
		Statement / proposition	Evidence			
			Case Study	CS-#	Interview ID	I-#
Decisions	P-12a	As an entrepreneur you need to make decisions.	CS-01; CS-02; CS-03	3	I-16; I-27; I-39	3
	P-13a	It is better to decide than to procrastinate.	CS-02; CS-03	2	I-27; I-39	2
Responsibility	P-14a	An entrepreneur needs to take over responsibility and make decisions.	CS-03; CS-04	2	I-39; I-33	2
	P-15a	The entrepreneur needs to take over responsibility no matter if a decision turns out to be good or bad.	CS-03	1	I-39	1

Risks & believe	P-16a	An entrepreneur needs to be willing to take risks and to believe in it.	CS-02; CS-05	2	I-27; I-30	2
	P-17a	It's important to see more chances than risks.	CS-02; CS-03	2	I-27; I-39	2
HRM	P-19a	Entrepreneurs need to deal with employees and to budget workload.	CS-02; CS-06	2	I-27; I-29	2
Market orientation	P-24a	An entrepreneur needs to monitor the market, deal with existing customers and practice customer acquisition. Customer orientation is important.	CS-01; CS-02; CS-03; CS-04	4	I-14; I-27; I-39; I-33	4
Taking action	P-28a	An entrepreneur is active and intervenes.	CS-02; CS-05	2	I-27; I30	2
No accusation	P-38a	It is important to learn from failures and to create a culture without accusation.	CS-01	1	I-14; I-16	2
Interdisciplinary teams	P-41a	Entrepreneurial action happens when interfunctional teams work together.	CS-05	1	I-30	1

4. Personal predisposition and learning:

		SMALL COMPANIES				
		Statement / proposition	Evidence			
			Case Study	CS-#	Interview ID	I-#
Disposition	P-56a	Entrepreneurial spirit is something you either have as a person or you don't. It's nothing you can learn.	CS-01; CS-03; CS-06	3	I-14; I-16; I-39; I-29	4
	P-58a	Entrepreneurial spirit is partly something you have and partly something you can learn.	CS-04	1	I-33	1

5. Intensities and concentration of entrepreneurial activity:

		SMALL COMPANIES				
		Statement / proposition	Evidence			
			Case Study	CS-#	Interview ID	I-#
Intensities	P-77a	Yes, entrepreneurial action happens in different intensities.	CS-01; CS-02; CS-03; CS-04; CS-05; CS-06	6	I-14; I-27; I-39; I-33; I-30; I-29	6
Affinity	P-79a	Yes, affinity matters because people with an affinity to freedom are more entrepreneurial active than those with an affinity to guidelines.	CS-02; CS-03; CS-05; CS-06	4	I-27; I-39; I-30; I-29	4
Further relations	P-81a	The intensity of entrepreneurial activity is related to the willingness of taking over responsibility, taking over risks and making decisions.	CS-03; CS-04	2	I-39; I-33	2
	P-82a	The intensity of entrepreneurial activity is related to the degree of personal job satisfaction.	CS-05	1	I-30	1
	P-83a	The intensity of entrepreneurial activity does not seem to be related to the level of education of a person.	CS-04	1	I-33	1

6. Motivation of entrepreneurs:

SMALL COMPANIES					
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Responsibility	P-42a Motivation for entrepreneurial action comes from personal responsibility and the joy of taking over responsibilities.	CS-01; CS-02; CS-04	3	I-14; I-27; I-33	3
	P-43a Motivation for entrepreneurial action is a question of philosophy and the personal attitude towards work.	CS-01; CS-04; CS-05	3	I-14; I-16; I-33; I-30	4
	P-44a The motivation of acting entrepreneurially comes from the will to help.	CS-05	1	I-30	1
	P-45a The motivation for entrepreneurial action also comes from the consciousness of tradition when family business over several generations are concerned.	CS-06	1	I-29	1
Acknowledgement	P-46a Motivation comes from being recognised socially and for work success and personal achievements.	CS-03	1	I-39	1
	P-47a Motivation for entrepreneurial action comes from being recognised as natural authority not due to exercising power.	CS-03	1	I-39	1
Vitality	P-48a Motivation for entrepreneurial action comes from personal vitality and energy.	CS-01; CS-04; CS-05	3	I-14; I-33; I-30	3
	P-49a Motivation for entrepreneurial action comes from rejoicing in ones work.	CS-01; CS-02; CS-03; CS-06	4	I-14; I-16; I-27; I-39; I-29	5
	P-50a Motivation for entrepreneurial action comes from the feeling that you can change something and that you are challenged with many different problems.	CS-02; CS-04	2	I-27; I-33	2
	P-51a Motivation for entrepreneurial action has something to do with ones passion.	CS-05	1	I-30	1
Vision & goal	P-52a Motivation for entrepreneurial action comes from a vision and a goal you have personally.	CS-01; CS-02	2	I-14; I-27	2

Individual fulfilment	P-53a Motivation for entrepreneurial action comes from the wish of individual fulfilment.	CS-05	1	I-30	1
Trust & believe	P-54a Motivation for entrepreneurial action comes from trusting and believing in people and giving them space to act.	CS-01; CS-02	2	I-14; I-16; I-27	3
Incentives	P-55a Motivation for entrepreneurial action also comes from financial incentives.	CS-03; CS-04; CS-06	3	I-39; I-33; I-29	3

7. Personality, characteristics, and capabilities of entrepreneurs:

SMALL COMPANIES					
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Assertiveness	P-59a As an entrepreneur it is important to know what you want and you need to have assertiveness.	CS-02; CS-03; CS-06	3	I-27; I-39; I-29	3
Courage	P-60a As an entrepreneur you need to have the courage to tackle something.	CS-02; CS-03	2	I-27; I-39	2
Mindset & upbringing	P-61a Acting entrepreneurially is a question of mindset and attitude in general.	CS-02; CS-03; CS-06	3	I-27; I-39; I-29	3
	P-62a Whether or not you act entrepreneurially refers to ones upbringing and education.	CS-02	1	I-27	1
Confidence	P-63a An entrepreneur needs to have self-confidence and charisma.	CS-02; CS-03	2	I-27; I-39	2

Robustness	P-64a An entrepreneur needs to have a robust character.	CS-03	1	I-39	1
Passion	P-65a As an entrepreneur you need to be passionate about your job.	CS-05	1	I-30	1
Reflection	P-66a As an entrepreneur you need to reflect yourself and your own limits.	CS-02	1	I-27	1
Environment & culture	P-70a Creating an open culture where people have the feeling that their ideas are welcome is important for entrepreneurial activity.	CS-04; CS-03; CS-02	3	I-33; I-39; I-27	3
	P-71a Trust within the team is important for entrepreneurial activity.	CS-01	1	I-14	1

Appendix D: Results matrices of key themes in mid-sized companies

1. Corporate functions:

MIDSIZED COMPANIES					
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Corporate functions	P-07b Innovative ideas mainly come from people with direct customer contact.	CS-09; CS-12	2	I-32a; I-47	2
	P-08a People from sales department seem to play an important role of the entrepreneurial function.	CS-09; CS-11; CS-12	3	I-31; I-32a; I-28a; I-48	4
	P-09b There are a few specially gifted technicians that are involved in the entrepreneurial function.	CS-10; CS-12; CS-13	3	I-36a; I-48; I-26a	3
	P-10a A few people in the department of research and development have entrepreneurial spirit.	CS-13	1	I-23; I-25; I-26a	3
	P-11a The corporate function of finance, accounting and controlling is a supporting function but there is no entrepreneurial activity.	CS-08; CS-09; CS-10; CS-11; CS-13	5	I-56b; I-32b; I-36b; I-28b; I-26b	5

2. Organisational hierarchies:

MIDSIZED COMPANIES					
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Hierarchical levels	P-02b The managing directors and the team leader level mainly have entrepreneurial spirit.	CS-07; CS-08; CS-09; CS-10; CS-11; CS-12; CS-13	7	I-63; I-64; I-65; I-66; I-67; I-56a; I-31; I-32a; I-36a; I-28a; I-47; I-48; I-50; I-52; I-53; I-24; I-25; I-26a	18
	P-03a People with responsibility for the company tend to have entrepreneurial spirit.	CS-07; CS-12	2	I-63; I-47; I-51	3

	P-04	The entrepreneurial function is more related to an individual person than to corporate functions, positions or hierarchical levels.	CS-07; CS-10	2	I-66; I-36a	2
	P-05a	The entrepreneurial function is carried out cooperatively.	CS-12; CS-13	2	I-50; I-24; I-25	3

3. *Activities of entrepreneurs:*

MIDSIZED COMPANIES						
	Statement / proposition	Evidence				
		Case Study	CS-#	Interview ID	I-#	
Decisions	P-12b	As an entrepreneur you need to make decisions / have decision-making capability.	CS-07; CS-09; CS-11; CS-12; CS-13	5	I-65; I-68; I-31; I-28a; I-47; I-48; I-49; I-52; I-53; I-24; I-25	11
	P-13b	Sometimes an entrepreneur needs to make a decision based on a gut feeling.	CS-09; CS-12; CS-13	3	I-31; I-47; I-25	3
Responsibility	P-14b	An entrepreneur needs to take over responsibility as a person.	CS-08; CS-11; CS-12	3	I-56a; I-28a; I-47	3
	P-15b	People who take over responsibility are more likely to be driver of innovation.	CS-12	1	I-47	1
Risks & believe	P-16b	An entrepreneur needs to be willing to take risks.	CS-07; CS-09; CS-12; CS-13	4	I-63; I-31; I-48; I-53; I-25	5
	P-17b	It's important to see more chances than risks.	CS-10	1	I-36a	1
	P-18a	You have to try and believe in it.	CS-10; CS-11; CS-12; CS-13	4	I-36a; I-28a; I-47; I-53; I-25; I-26a	6
HRM	P-19b	You have to guide, train and enable people concerning their work.	CS-07; CS-11; CS-12; CS-13	4	I-63; I-64; I-65; I-28a; I-47; I-48; I-51; I-52; I-24; I-25	10
	P-20a	You need to motivate people.	CS-07	1	I-64	1
Communication	P-22a	Inter-divisional thinking and communication is important.	CS-07; CS-11	2	I-63; I-28a	2
	P-23a	Speaking with and knowing from each other is important.	CS-11; CS-12; CS-13	3	I-28a; I-47; I-52; I-26a	4

Market orientation	P-24b	An entrepreneur needs to monitor the market and listen to customers. Customer orientation is important.	CS-07; CS-08; CS-09; CS-12; CS-13; CS-11	6	I-67; I-32a; I-48; I-23; I-26a; I-56a; I-49; I-28a	8
	P-25a	You need to look for future technologies.	CS-07; CS-13	2	I-67; I-23; I-26a	3
Taking action	P-28b	You need to be active and tackle things.	CS-07; CS-10; CS-11; CS-12	4	I-63; I-64; I-65; I-36a; I-28a; I-48	6
	P-29a	You need to see chances and put it into action.	CS-07; CS-10; CS-12	3	I-63; I-36a; I-48	3
Point of view	P-31a	It is important to see things from a different point of view with a more holistic and global vision.	CS-07; CS-08; CS-09; CS-10; CS-12; CS-13	6	I-66; I-67; I-56a; I-32a; I-36a; I-50; I-25	7
Personality	P-32a	Entrepreneurial action doesn't relate to an activity but more to the personality of a person.	CS-09; CS-13	2	I-32a; I-24	2
Finance	P-35a	It is important to also have the financial situation in mind and to budget the resources you have.	CS-12; CS-13	2	I-52; I-26a	2
No accusation	P-38b	It is important to learn from failures and to create a culture without accusation.	CS-09; CS-10; CS-11; CS-13	4	I-32a; I-36a; I-28a; I-24	4
	P-39a	Having the permission to act entrepreneurially is an important precondition.	CS-11; CS-12	2	I-28a; I-49	2

4. *Personal predisposition and learning*

		MIDSIZED COMPANIES				
		Statement / proposition	Evidence			
			Case Study	CS-#	Interview ID	I-#
Disposition	P-56b	Entrepreneurial spirit is something you either have as a person or you don't. It's nothing you can learn.	CS-07; CS-08; CS-09; CS-11; CS-12; CS-13	6	I-63; I-66; I-68; I-56a; I-31; I-28a; I-47; I-50; I-51; I-52; I-53; I-24	12
	P-58b	Entrepreneurial spirit is partly something you have and partly something you can learn.	CS-07; CS-12; CS-13	3	I-65; I-49; I-25; I-26a	4
Assertiveness	P-59b	As an entrepreneur it is important to know what you want and you need to have assertiveness.	CS-07; CS-08; CS-10; CS-11; CS-12; CS-13	6	I-63; I-64; I-65; I-67; I-56a; I-36a; I-28a; I-47; I-48; I-24; I-25; I-26a; I-66	13
Courage	P-60b	As an entrepreneur you need to have the courage to tackle something.	CS-07; CS-12; CS-13	3	I-63; I-49; I-24; I-25; I-26a	5
Mindset & upbringing	P-61b	Acting entrepreneurially is a question of mindset and attitude in general.	CS-07; CS-09; CS-10; CS-12; CS-13	5	I-63; I-31; I-32a; I-36a; I-48; I-50; I-24; I-25	8
	P-62b	Whether or not you act entrepreneurially refers to ones upbringing and education.	CS-07; CS-09; CS-10; CS-12; CS-13	5	I-63; I-32a; I-36a; I-51; I-24; I-25; I-26a	7
Confidence	P-63b	An entrepreneur needs to have self-confidence and charisma.	CS-07; CS-09; CS-13	3	I-63; I-65; I-32a; I-25	4
Robustness	P-64b	An entrepreneur needs to have a robust character.	CS-07; CS-13; CS-12	3	I-63; I-25; I-52	3
Passion	P-65b	As an entrepreneur you need to be passionate about your job.	CS-07; CS-10; CS-12	3	I-64; I-36a; I-47	3
Reflection	P-66b	As an entrepreneur you need to reflect yourself and accept others concerning strengths and weaknesses and personal limits.	CS-08; CS-12; CS-13; CS-07; CS-11	5	I-56a; I-51; I-52; I-24; I-63; I-64; I-28a; I-47; I-50	9

Public image	P-67a As an entrepreneur you need to be aware of your impact on others.	CS-08; CS-12; CS-13	3	I-56a; I-49; I-24; I-25	4
Experience	P-68a Entrepreneurial action depends on the experience of the person.	CS-13	1	I-23; I-26a	2
Environment & culture	P-70b Creating an open culture where people have the feeling that their ideas are welcome is important for entrepreneurial activity.	CS-13; CS-07; CS-08; CS-09; CS-10; CS-12	6	I-25; I-63; I-65; I-66; I-67; I-56a; I-31; I-32a; I-36a; I-47; I-49; I-51; I-53; I-24	14
	P-71b Trust within the team is important for entrepreneurial activity.	CS-07; CS-12	2	I-63; I-52	2

5. *Intensities and concentration of entrepreneurial activity:*

MIDSIZED COMPANIES					
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Intensities	P-77b Yes, entrepreneurial action happens in different intensities.	CS-07; CS-09; CS-11; CS-12; CS-13	5	I-63; I-65; I-66; I-31; I-32a; I-28a; I-48; I-53; I-25; I-26a	10
	P-78a No, there are no different intensities of entrepreneurial activity.	CS-13	1	I-23	1
Affinity	P-79b Yes, affinity matters because people with an affinity to liberties are more entrepreneurial active than those with an affinity to guidelines.	CS-07; CS-08; CS-09; CS-10; CS-11; CS-12; CS-13	7	I-64; I-65; I-66; I-67; I-68; I-56a; I-32a; I-36a; I-28a; I-47; I-48; I-50; I-51; I-52; I-53; I-24; I-25; I-26a	18

6. *Motivation of entrepreneurs:*

MIDSIZED COMPANIES					
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Responsibility	P-42b Motivation for entrepreneurial action comes from personal responsibility and the joy of taking over responsibilities.	CS-12; CS-13	2	I-47; I-48; I-49; I-52; I-23; I-24	6
	P-43b Motivation for entrepreneurial action comes from the will to set an example for other people.	CS-12	1	I-52	1
Acknowledgement	P-46b Motivation comes from being recognised socially and for work success and personal achievements.	CS-07; CS-10; CS-11; CS-12; CS-13	5	I-64; I-66; I-67; I-36a; I-28a; I-51; I-52; I-25	8
Vitality	P-48b Motivation for entrepreneurial action comes from personal vitality and energy.	CS-07; CS-09; CS-11; CS-12; CS-13	5	I-68; I-31; I-28a; I-47; I-25; I-26a	6
	P-49b Motivation for entrepreneurial action comes from rejoicing in ones work.	CS-07; CS-11; CS-12; CS-13	4	I-67; I-28a; I-49; I-50; I-52; I-24; I-25	7
	P-50b Motivation for entrepreneurial action comes from the feeling that you can change something and that you are challenged with many different problems.	CS-07; CS-09; CS-12; CS-13	4	I-63; I-65; I-32a; I-47; I-49; I-50; I-53; I-23	7
	P-51b Motivation for entrepreneurial action has something to do with ones passion.	CS-07	1	I-67	1
Vision & goal	P-52b Motivation for entrepreneurial action comes from a vision and a goal you have personally.	CS-07; CS-08; CS-09; CS-12	4	I-63; I-56a; I-32a; I-52	4

Individual fulfilment	P-53b Motivation for entrepreneurial action comes from the wish of individual fulfilment.	CS-13; CS-07	2	I-25; I-65	2
Incentives	P-55b Motivation for entrepreneurial action also comes from monetary incentives.	CS-09; CS-10; CS-12; CS-13	4	I-32a; I-36a; I-50; I-51; I-25	5

7. *Personality, characteristics and capabilities of entrepreneurs:*

MIDSIZED COMPANIES					
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Assertiveness	P-59b As an entrepreneur it is important to know what you want and you need to have assertiveness.	CS-07; CS-08; CS-10; CS-11; CS-12; CS-13	6	I-63; I-64; I-65; I-67; I-56a; I-36a; I-28a; I-47; I-48; I-24; I-25; I-26a; I-66	13
Courage	P-60b As an entrepreneur you need to have the courage to tackle something.	CS-07; CS-12; CS-13	3	I-63; I-49; I-24; I-25; I-26a	5
Mindset & upbringing	P-61b Acting entrepreneurially is a question of mindset and attitude in general.	CS-07; CS-09; CS-10; CS-12; CS-13	5	I-63; I-31; I-32a; I-36a; I-48; I-50; I-24; I-25	8
	P-62b Whether or not you act entrepreneurially refers to ones upbringing and education.	CS-07; CS-09; CS-10; CS-12; CS-13	5	I-63; I-32a; I-36a; I-51; I-24; I-25; I-26a	7
Confidence	P-63b An entrepreneur needs to have self-confidence and charisma.	CS-07; CS-09; CS-13	3	I-63; I-65; I-32a; I-25	4
Robustness	P-64b An entrepreneur needs to have a robust character.	CS-07; CS-13; CS-12	3	I-63; I-25; I-52	3

Passion	P-65b	As an entrepreneur you need to be passionate about your job.	CS-07; CS-10; CS-12	3	I-64; I-36a; I-47	3
Reflection	P-66b	As an entrepreneur you need to reflect yourself and accept others concerning strengths and weaknesses and personal limits.	CS-08; CS-12; CS-13; CS-07; CS-11	5	I-56a; I-51; I-52; I-24; I-63; I-64; I-28a; I-47; I-50	9
Public image	P-67a	As an entrepreneur you need to be aware of your impact on others.	CS-08; CS-12; CS-13	3	I-56a; I-49; I-24; I-25	4
Experience	P-68a	Entrepreneurial action depends on the experience of the person.	CS-13	1	I-23; I-26a	2
Environment & culture	P-70b	Creating an open culture where people have the feeling that their ideas are welcome is important for entrepreneurial activity.	CS-13; CS-07; CS-08; CS-09; CS-10; CS-12	6	I-25; I-63; I-65; I-66; I-67; I-56a; I-31; I-32a; I-36a; I-47; I-49; I-51; I-53; I-24	14
	P-71b	Trust within the team is important for entrepreneurial activity.	CS-07; CS-12	2	I-63; I-52	2

Appendix E: Results matrices of key themes in large companies

1. Corporate functions:

		LARGE COMPANIES				
Statement / proposition		Evidence				
		Case Study	CS-#	Interview ID	I-#	
Corporate functions	P-07c	People with a focus on customer contact are important for the entrepreneurial function.	CS-15; CS-18	2	I-17 (exp); I-58; I-75	3
	P-08b	People from sales & marketing play an important role in the entrepreneurial function.	CS-16; CS-19; CS-21; CS-15; CS-17; CS-18	6	I-09; I-13; I-37; I-43; I-54; I-58; I-01; I-40a; I-62; I-55; I-17 (exp); I-61 (exp)	12
	P-09c	Specially gifted technicians who are in love with / crazy about engineering play an important role in the entrepreneurial function.	CS-16; CS-20; CS-24	3	I-06a; I-06b; I-12; I-42a; I-18	4
	P-10b	Innovation happens in the department of technical development.	CS-20; CS-23; CS-16	3	I-42a; I-15a; I-02b	3
	P-11b	The corporate function of finance, accounting and controlling is a supporting function but there is no entrepreneurial activity.	CS-14; CS-15; CS-16; CS-17; CS-18; CS-19; CS-20; CS-21; CS-22; CS-23	10	I-41b; I-59b; I-46b; I-06c; I-40b; I-62; I-34b; I-42b; I-54; I-73b; I-15b	11

2. Organisational hierarchies:

		LARGE COMPANIES				
Statement / proposition		Evidence				
		Case Study	CS-#	Interview ID	I-#	
Hierarchical levels	P-02c	The management team or managing directors mainly have entrepreneurial spirit.	CS-14; CS-15; CS-16; CS-17; CS-19; CS-20; CS-21; CS-22; CS-24	9	I-41a; I-46a; I-57; I-59a; I-60; I-70; I-74; I-02a; I-02b; I-04b; I-05a; I-06a; I-06b; I-07; I-09; I-10; I-11; I-40a; I-22; I-55; I-42a; I-43; I-54; I-73a; I-35; I-18; I-61 (exp); I-72 (exp)	26
	P-03c	People with responsibility for the company tend to have entrepreneurial spirit.	CS-15; CS-17	2	I-74; I-59a; I-40a; I-45	4

	P-05b	The networking in interdisciplinary teams seem to be important for the entrepreneurial function.	CS-14; CS-15; CS-16; CS-18; CS-19; CS-24	6	I-41a; I- 57; I-59a; I-01; I-08; I-22; I-19; I-17 (exp); I-70; I-74; I-02a; I-05b; I-12; I-62; I-38	15
	P-06	Entrepreneurial spirit is existent in different or all hierarchical levels - not only the management level.	CS-16; CS-17; CS-18; CS-19; CS-21; CS-22; CS-24	7	I-04b; I-05b; I-09; I-10; I-13; I-40a; I-45; I-62; I-75; I-38; I-69; I-43; I-54; I-73a; I-18; I-20	16

3. Activities of entrepreneurs:

LARGE COMPANIES						
	Statement / proposition		Evidence			
			Case Study	CS-#	Interview ID	I-#
Decisions	P-12c	As an entrepreneur you need to make decisions / have decision-making capability.	CS-15; CS-17; CS-18; CS-19; CS-21	5	I-57; I-44; I-62; I-22; I-54; I-72	6
	P-14c	You need to give responsibility to other people.	CS-19	1	I-55	1
Responsibility	P-16c	An entrepreneur needs to be willing to take risks.	CS-15; CS-16; CS-17; CS-18; CS-19; CS-21; CS-23	7	I-46a; I-10; I-13; I-45; I-62; I-38; I-54; I-35	8
	P-17c	Sometimes you need to ignore existing rules and reglementations.	CS-15	1	I-46a; I-61	2
	P-18b	You have to believe in it.	CS-16; CS-21	2	I-10; I-54	2
Risks & believe	P-19c	You have to guide, train and enable people concerning their work.	CS-15; CS-16; CS-19; CS-21	4	I-74; I-01; I-09; I-13; I-22; I-34a; I-55; I-43	8
	P-20b	You need to motivate people.	CS-16; CS-24	2	I-09; I-18	2
	P-21	You need to give space for other people and their ideas.	CS-16; CS-21; CS-23; CS-19; CS-24	5	I-01; I-43; I-15a; I-10; I-34a; I-18	6
HRM						

Communication	P-22b	You need to network and deal with interdisciplinary teams.	CS-16; CS-23; CS-19	3	I-01; I-02a; I-05b; I-08; I-15a; I-17; I-72; I-22; I-35	9
	P-23b	You need to communicate with people and explain a lot.	CS-15; CS-16; CS-19; CS-21; CS-23; CS-24; CS-14; CS-18	8	I-74; I-04b; I-05b; I-06b; I-09; I-22; I-37; I-55; I-43; I-15a; I-19; I-61; I-41a; I-71; I-08; I-10; I-75; I-38; I-18; I-05a	19
Market orientation	P-24c	An entrepreneur needs to monitor the market and listen to customers. Customer orientation is important.	CS-15; CS-16; CS-18; CS-19; CS-22; CS-23; CS-24	7	I-46a; I-58; I-59a; I-02a; I-06a; I-07; I-62; I-75; I-22; I-73a; I-35; I-74; I-08; I-13; I-19	15
	P-25b	You need to balance existing products and new innovation with future technologies.	CS-16; CS-18	2	I-05a; I-75	2
	P-26	You need to recognise possibilities and decide on the right projects.	CS-16; CS-19; CS-24	3	I-13; I-22; I-19	3
Taking action	P-27	You need to have free space to try out new ideas.	CS-16; CS-18; CS-21; CS-23; CS-24	5	I-06a; I-75; I-54; I-15a; I-72; I-62; I-43; I-35; I-21; I-17	10
	P-28c	You need to be active and tackle things.	CS-15; CS-16; CS-17; CS-18; CS-19; CS-22; CS-23; CS-24	8	I-57; I-70; I-04a; I-06a; I-09; I-12; I-13; I-44; I-45; I-75; I-22; I-38; I-73a; I-15a; I-35; I-20; I-17; I-72; I-05b	19
Point of view	P-29b	You need to see chances and put it into action.	CS-16; CS-18; CS-19	3	I-04b; I-06a; I-75; I-22	4
	P-30	You need to be passionate about it.	CS-17; CS-19; CS-24	3	I-40a; I-34a; I-18; I-17	4
Personality	P-31b	It is important to see things with a more holistic and global vision and free yourself from your own concepts.	CS-15; CS-16; CS-18; CS-19	4	I-57; I-70; I-01; I-62; I-22	5
	P-32b	Soft skills of a healthy personality like social competencies, conflict management skills, capacity for teamwork, curiosity and the ability to take criticism are important.	CS-14; CS-15; CS-16; CS-24; CS-17	5	I-41a; I-71; I-06a; I-07; I-19; I-45	6

Awareness	P-33	With regard to new possibilities personal awareness, concernment, attitude and self-conception are important.	CS-14; CS-15; CS-16; CS-17; CS-18	5	I-41a; I-60; I-02a; I-06a; I-07; I-45; I-62	7
	P-34	It is also important to see how a new idea emerges - do we invent or is it a customer problem we try to solve?	CS-16	1	I-06b; I-10	2
Finance	P-35b	It is important to also have the financial situation in mind and to budget the resources you have.	CS-15; CS-16; CS-17; CS-18; CS-19; CS-21; CS-22; CS-24	8	I-59a; I-60; I-74; I-04a; I-04b; I-13; I-45; I-62; I-75; I-22; I-55; I-54; I-73a; I-20	13
Challenge	P-36	You need to actively challenge the existing world, try to allow different thoughts and be open for new things.	CS-14; CS-16; CS-18; CS-21; CS-23; CS-24	6	I-41a; I-01; I-02a; I-06a; I-07; I-62; I-75; I-43; I-54; I-35; I-19; I-20; I-61; I-72	14
Network	P-37	Networking is important - it's all about knowing the right people and doing it.	CS-16; CS-19; CS-23; CS-24	4	I-02a; I-06b; I-22; I-15a; I-35; I-18	6
No accusation	P-38c	It is important to learn from failures and to create a culture without accusation.	CS-15; CS-16; CS-17; CS-19; CS-21; CS-23; CS-24	7	I-71; I-10; I-13; I-40a; I-45; I-55; I-43; I-54; I-15a; I-35; I-18; I-21	12
	P-39b	An innovation culture is important and this needs to be role modelled from management.	CS-16; CS-19	2	I-09; I-13; I-22	3
	P-40	You don't have to give up after failures.	CS-18; CS-21	2	I-75; I-43; I-61	3
Interdisciplinary teams	P-41b	Entrepreneurial action happens when interfunctional teams work together.	CS-16; CS-23	2	I-08; I-35; I-17	3

4. Personal predisposition and learning:

LARGE COMPANIES					
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Disposition	P-56c Entrepreneurial spirit is something you either have as a person or you don't. It's nothing you can learn.	CS-15; CS-16; CS-17; CS-18; CS-19; CS-20; CS-21; CS-22; CS-23; CS-24	10	I-71; I-02b; I-05b; I-09; I-10; I-11; I-12; I-13; I-40a; I-45; I-62; I-22; I-34a; I-37; I-69; I-42a; I-43; I-54; I-73a; I-15a; I-35; I-18; I-20; I-21; I-17; I-72	26
	P-57 Entrepreneurial spirit is something you can learn.	CS-14; CS-15; CS-19	3	I-41a; I-57; I-38	3
	P-58c Entrepreneurial spirit is partly something you have and partly something you can learn.	CS-15; CS-16; CS-19; CS-24	4	I-58; I-59a; I-60; I-70; I-74; I-04b; I-55; I-19	8

5. Intensities and concentration of entrepreneurial activity:

LARGE COMPANIES					
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Intensities	P-77c Yes, entrepreneurial action happens in different intensities.	CS-15; CS-16; CS-17; CS-19; C-22; CS-23; CS-24	7	I-59a; I-71; I-74; I-04b; I-05b; I-10; I-11; I-12; I-40a; I-22; I-37; I-55; I-69; I-73a; I-35; I-19	16
	P-78b No, there are no different levels of entrepreneurial activity.	CS-24	1	I-20; I-21; I-17	3
Affinity	P-79c Yes, affinity matters because people with an affinity to liberties are more entrepreneurial active than those with an affinity to guidelines.	CS-15; CS-16; CS-17; CS-18; CS-19; CS-21; CS-22; CS-23; CS-24	9	I-46a; I-57; I-58; I-59a; I-70; I-71; I-74; I-13; I-40a; I-62; I-22; I-34a; I-69; I-43; I-54; I-73a; I-15a; I-21; I-17	19
	P-80 Entrepreneurial activity is possible with both affinities.	CS-14; CS-16; CS-19; CS-24	4	I-41a; I-03; I-05a; I-37; I-38; I-55; I-18; I-20; I-61	9

6. Motivation of entrepreneurs:

		LARGE COMPANIES				
		Statement / proposition	Evidence			
			Case Study	CS-#	Interview ID	I-#
Responsibility	P-42c	Motivation for entrepreneurial action comes from personal responsibility and the joy of taking over responsibilities.	CS-14; CS-16; CS-19; CS-21; CS-22; CS-23; CS-15	7	I-41a; I-04b; I-13; I-34a; I-55; I-43; I-35; I-73a; I-59a	9
	P-43c	Motivation for entrepreneurial action is a question of philosophy and the personal attitude towards work.	CS-14	1	I-41a	1
	P-44b	The motivation of acting entrepreneurially comes from the will to help.	CS-19	1	I-69	1
	P-45b	The motivation for entrepreneurial action also comes from the consciousness of tradition when family business over several generations are concerned.	CS-14	1	I-41a	1
Acknowledgement	P-46c	Motivation comes from being recognised socially and for work success and personal achievements.	CS-15; CS-16; CS-17; CS-18; CS-19; CS-20; CS-21; CS-23; CS-24	9	I-58; I-71; I-05b; I-12; I-13; I-40a; I-62; I-34a; I-37; I-55; I-42a; I-43; I-35; I-20; I-21; I-61	16
	P-47b	Motivation for entrepreneurial action comes from being recognised as natural authority not due to exercising power.	CS-19	1	I-55	1
Vitality	P-48c	Motivation for entrepreneurial action comes from personal vitality and energy.	CS-14; CS-15; CS-16; CS-18; CS-19; CS-20; CS-22; CS-23; CS-24	9	I-41a; I-57; I-58; I-71; I-74; I-04b; I-75; I-34a; I-38; I-55; I-42a; I-73a; I-15a; I-18; I-19; I-21; I-17; I-61; I-72	19
	P-49c	Motivation for entrepreneurial action comes from rejoicing in ones work.	CS-15; CS-16; CS-18; CS-19; CS-21; CS-24	6	I-57; I-01; I-09; I-12; I-75; I-22; I-43; I-19; I-20	9
	P-50c	Motivation for entrepreneurial action comes from the feeling that you can change something, that you are challenged with many different problems and that you can demonstrate to deal with it.	CS-15; CS-16; CS-18; CS-19; CS-20; CS-22; CS-23; CS-24	8	I-58; I-59a; I-04b; I-07; I-75; I-22; I-69; I-42a; I-73a; I-15a; I-20; I-21; I-17; I-72	14
	P-51c	Motivation for entrepreneurial action has something to do with ones passion.	CS-17; CS-19	2	I-45; I-34a	2

Vision & goal	P-52c Motivation for entrepreneurial action comes from a vision and a goal you have personally.	CS-15; CS-17; CS-18; CS-20; CS-22	5	I-46a; I-59a; I-60; I-40a; I-75; I-42a; I-73a; I-72	8
Individual fulfilment	P-53c Motivation for entrepreneurial action comes from the wish of individual fulfilment.	CS-15; CS-23; CS-24	3	I-46a; I-57; I-60; I-74; I-35; I-20	6
Trust & believe	P-54b Motivation for entrepreneurial action comes from the feeling to have space to do things and to believe in it.	CS-15; CS-16; CS-17; CS-18; CS-21	5	I-71; I-07; I-09; I-44; I-62; I-43	6
Incentives	P-55c Motivation for entrepreneurial action also comes from monetary incentives.	CS-15; CS-16; CS-19; CS-24	4	I-74; I-04b; I-05b; I-07; I-69; I-20	6

7. Personality, characteristics and capabilities of entrepreneurs:

LARGE COMPANIES					
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Assertiveness	P-59c As an entrepreneur it is important to know what you want and you need to have assertiveness.	CS-15; CS-16; CS-17; CS-18; CS-19; CS-20; CS-21; CS-22; CS-23; CS-24	10	I-57; I-60; I-70; I-74; I-06b; I-10; I-13; I-40a; I-45; I-62; I-75; I-34a; I-55; I-42a; I-43; I-73a; I-35; I-18; I-61; I-72	20
Courage	P-60c As an entrepreneur you need to have the courage to tackle something.	CS-15; CS-17; CS-21; CS-22; CS-24; CS-18	6	I-46a; I-40a; I-43; I-73a; I-21; I-62	6
Mindset & upbringing	P-61c Acting entrepreneurially is a question of mindset and attitude in general.	CS-15; CS-16; CS-17; CS-19; CS-20; CS-21; CS-23; CS-24	8	I-46a; I-59a; I-60; I-70; I-71; I-74; I-04b; I-06b; I-11; I-12; I-13; I-45; I-22; I-38; I-69; I-42a; I-43; I-15a; I-35; I-18; I-19; I-20; I-21; I-17; I-61; I-72	26

	P-62c	Whether or not you act entrepreneurially refers to ones upbringing and education.	CS-15; CS-16; CS-17; CS-19; CS-21; CS-24	6	I-46a; I-60; I-70; I-71; I-13; I-45; I-38; I-69; I-43; I-54; I-19; I-20; I-12	13
Confidence	P-63c	An entrepreneur needs to have self-confidence and charisma.	CS-15; CS-18; CS-16	3	I-58; I-62; I-09	3
Robustness	P-64c	An entrepreneur needs to have a robust character.	CS-15	1	I-59a	1
Passion	P-65c	As an entrepreneur you need to be passionate about your job.	CS-17; CS-21; CS-24	3	I-44; I-54; I-18	3
Reflection	P-66c	As an entrepreneur you need to reflect yourself and accept others concerning strengths and weaknesses and personal limits.	CS-15; CS-21; CS-16	3	I-57; I-58; I-60; I-43; I-70; I-01; I-03; I-04a; I-05a; I-07	10
Public image	P-67b	As an entrepreneur you need to be aware of your impact on others.	CS-15; CS-17; CS-19; CS-21; CS-22	5	I-60; I-70; I-44; I-22; I-43; 73	6
Experience	P-68b	Entrepreneurial action depends on the experience of the person.	CS-24	1	I-19	1
Age	P-69	Entrepreneurial action does not depend on the age of the person.	CS-15; CS-20; CS-24	3	I-71; I-42a; I-21	3
Environment & culture	P-70c	Creating an open culture where people have the feeling that their ideas are welcome is important for entrepreneurial activity.	CS-15; CS-16; CS-17; CS-18; CS-19; CS-20; CS-22; CS-23; CS-24; CS-14; CS-21	11	I-46a; I-01; I-09; I-45; I-75; I-22; I-34a; I-38; I-69; I-42a; I-73a; I-35; I-19; I-05a; I-05b; I-41a; I-58; I-60; I-02a; I-03; I-07; I-10; I-11; I-54	14

Appendix F: Case reports of small companies

CASE STUDY REPORT: CS-01

Findings according to key themes:

Theme 1: corporate functions

Concerning the organisational structure it can be stated that there are no clear cut corporate departments. Every one of the twelve remaining employees is doing at least three different jobs in one which is very time intense but also very challenging for the people when it comes to shared responsibilities. The company is too small to have a separate finance or human resources department. It seems that the employees do not think in separated corporate functions. New ideas and solutions to customer problems come from those people who are specialised in the topic and therefore are able to do it the best way. This kind of teamwork requires high self responsibility of the technicians and the software developers.

The key success factor of the firm is the technical and software development. The special background of high-tech measurement systems demands for developers who are actually applied physicists. Two technical developers in the team seem to have this combined knowledge and therefore contribute directly to new technological ideas and solutions.

Theme 2: organisational hierarchies

The professional background of the two managing directors is influenced by US American companies. The way of leadership and company structures in the USA seems to be more hierarchical and therefore include more management levels even in smaller companies. This is why the two management directors think about introducing a second management level in their company as well. The aim is to encourage employees in taking over more responsibility. At the moment the management responsibility lies within the management team alone.

Theme 3: activities of entrepreneurs

The activities of entrepreneurial people in case study CS-01 seem to include the strategic decision making and keeping the big picture in mind which are activities of the managing directors. Furthermore, the combination of different knowledge fields like

physics and technology seems to be an important entrepreneurial activity as well, as it directly contributes to new ideas and solutions.

Theme 4: personal predisposition and learning

In case study CS-01 the interviewees consider entrepreneurial spirit to be something a person either has or does not. It seems to be connected to a personal life philosophy that mirrors entrepreneurial spirit, for instance in actively scrutinizing and challenging things.

Theme 5: intensities and concentration of entrepreneurial activity

The interviewees in case study CS-01 assess entrepreneurial spirit to be existent in different intensities but only a few. However, they relate the intensity of entrepreneurial activity to the more general fact that a person knows what he or she wants in life. This means that the personal goal appears to be related to entrepreneurial spirit.

Theme 6: motivation of entrepreneurs

In case study CS-01 motivation for entrepreneurial activities comes from a person's self responsibility and freedom, from fun at work, and an encouraging management and leadership style. Furthermore, in this case teamwork appears to be a very important motivating factor. In order to get together the different knowledge fields of mechanics, electronics, physics and software it is important that people see and accept their own strengths and weaknesses in the team. A positive climate in a team like that can be described as main motivating factor so people are very dedicated to their work. The absence rate due to sickness is only one or two days per year for every employee in the company. It is further described that the team itself decides on who will be in charge of which project and business trip. The managing directors stay out of these decisions and leave it to the team to decide who is best for the task. When it comes to leadership, trust and very little control seem to be key motivating factors. The managing directors do not ask or control projects on a daily basis.

Theme 7: personality, characteristics and capabilities of entrepreneurs

In case study CS-01 important characteristics and capabilities that refer to the personality of an entrepreneur were described. As an entrepreneurial active person it seems to be meaningful to know what you want, to have a sense of the right thing to do as some kind of gut feeling, and to have a sense for the market. It also appears to be

important to believe in what you do in the long run and to focus on a vision and a goal that you are willing to die for in the sense of going bankrupt. The entrepreneur should further proof whether this goal and the personality are compatible because otherwise it appears to be only wishful thinking but without relation to reality of the company. Entrepreneurial active people were further described as self-confident about the own capabilities, full of energy, willing to take and bear risks, persevering and disciplined also in private life. It appears that entrepreneurial active people have a desire for freedom but need to realise that total freedom also means total responsibility. Finally, it seems to be meaningful to know how to refill the personal batteries when they get empty.

Additional findings:

Facilitating factors

People who feel well appear to have good ideas. This relates to the motivating fact of having fun at work and in the team. Networking worldwide also seems to have facilitating character because connecting to new people all over the world gives new ideas and broadens one's personal horizon. In addition to that, entrepreneurial activity of employees can be facilitated by promoting them and trusting them with management tasks. This is why the managing directors in this case study think about introducing a second management level.

Furthermore, the company realised that current customer requests do not challenge further technological development. Most of the customer demands can be satisfied without engaging in actual new territories of technological development. This is why the managing directors decided to engage in science projects at different universities. These projects are much more challenging and therefore also motivating and facilitating entrepreneurial activities within the company.

Barriers

The only named barrier that makes it possible to hinder entrepreneurial activity is personal frustration. However, the interviewees clearly highlighted the motivated team so personal frustration could be a barrier for entrepreneurial activity but does not seem to be an issue at the moment.

CASE STUDY REPORT: CS-02

Findings according to key themes:

Theme 1: corporate functions

In case study CS-02 entrepreneurial activity can be found in the management function. The structure of the company only has one management level with the two managing directors. Both of them seem to be the driving force of entrepreneurial ideas and activities due to their expertise in the field of product variety and complexity management. The rest of the employees are more involved in processing project tasks and adjusting the software tool. Furthermore, there is no division of labour in separate corporate functions because the company is too small for an organisational structure like that. However, the managing director describes the sales and marketing task to be of entrepreneurial character and therefore especially important for the entrepreneurial function.

Theme 2: organisational hierarchies

As explained above the organisation is structured with only one management level. Apart from the two managing directors and owners, there are no department heads or other managers appointed. The managing director explained that all the tasks of the employees in the company are of processing character but cannot be described as entrepreneurial itself. Therefore, entrepreneurial activity seems to take place on management level only.

Theme 3: activities of entrepreneurs

Entrepreneurial activity was described as actively moving on, constantly acquiring customers and being willing to take over entrepreneurial risks as the company's major competitors are top consulting agencies and high-level software developers. It appears that entrepreneurial activity includes seeing more chances than risks, having dreams and being convinced about the own work and trusting in it. Instead of leaning back the entrepreneur seems to be in need to make decisions.

Theme 4: personal predisposition and learning

Entrepreneurial spirit seems to be something a person just has or does not. It appears that entrepreneurial spirit is related to the personality of a person. The only thing that is changeable is the environment but apparently not a personality and its entrepreneurial spirit.

Theme 5: intensities and concentration of entrepreneurs

In case study CS-02 entrepreneurial active people are described as preferring liberties and responsibilities instead of given guidelines and predefined processes. It seems that people who have an affinity to freedom tend to be entrepreneurial active.

Theme 6: motivation of entrepreneurs

In this company the entrepreneurial active people seem to be motivated because of their liberties, their responsibilities and possibilities to reach their own aspirations. Having fun at work and being responsible for it appears to be important. The motivation for entrepreneurial activity further comes from the situation that all kind of different topics and problems need to be addressed and solved in a small company like this.

Theme 7: personality, characteristics and capabilities of entrepreneurs

In case study CS-02 an entrepreneur is described as all-round genius, capable and gifted in many different ways and as a person who is able to see the own personal limits. Furthermore, the personal upbringing and education is a characterising value that also seems to influence the capabilities of being entrepreneurial active. An entrepreneur also seems to have intuition and a sense for the market. The character of an entrepreneur is described with two sides of the same coin. On the one side an entrepreneur represents the company with a strong personality. On the other side there is the personality of this human being with all its personal limitations especially when it comes to strengths and performance. The concession that there is no endless source of energy is important for an entrepreneur to be attentive for burnout issues. This topic was described in case study CS-02 with the background that sometimes people want to demonstrate their strength and capabilities in unhealthy ways.

Additional findings:

Facilitating factors:

In case study CS-02 the classic intrapreneurship approach was explained to facilitate entrepreneurial activity within the company. That means to delegate responsibility, provide financial recourses and give space for personal development so that projects actually have a chance to become someone's 'baby'. From this it follows that facilitation of entrepreneurial activity is possible in general but not in every situation.

Barriers:

Six barriers that hinder entrepreneurial activity could be identified in this case. First of all, personal safety and family seem to be barriers for entrepreneurial behaviour. The amount of personal commitment and the need for financial security appear to hinder making courageous and sometimes risky decisions. Secondly, a lack of financial resources hinders entrepreneurial activity. A third barrier is the personal health of entrepreneurs because being actively involved in entrepreneurial issues and responsibilities can become an extreme burden. Fourthly, the lack of social networks hinders entrepreneurial activity. Asking questions, exchanging different viewpoints and feeling supported are important background factors for entrepreneurs. The fifth barrier is a lack of competence. In order to turn a single idea into a saleable product a certain education and knowledge is required as well as implementing capabilities. The sixth and last described barrier is a lack of self-confidence. Self-confidence has an impact on the charisma of a person which is needed in order to accomplish entrepreneurial activities.

CASE STUDY REPORT: CS-03

Findings according to key themes:

Theme 1: corporate functions

New ideas come from the two managing directors. The two main technicians are more of processing character but not involved in entrepreneurial activities. The same situation applies to the craftsmen and the administrative staff.

Theme 2: organisational hierarchies

Entrepreneurial activities appear to happen only on management level by the two managing directors of the company.

Theme 3: activities of entrepreneurs

The most important entrepreneurial activity appears to be the decision making itself and to prevent that things get procrastinated over longer periods. Decision making and taking responsibility seem to be important entrepreneurial activities in this case study CS-03.

Theme 4: personal predisposition and learning

The entrepreneurial spirit is described as a special mindset and not as something that a person could learn. The general predisposition apparently has to be given to the people to act entrepreneurially.

Theme 5: intensities and concentration of entrepreneurial activity

In this company it seems that freedom plays a big role because people who have liberties to engage in entrepreneurial activity are also willing to take over responsibilities. It further appears to be important to widen the personal horizon when entrepreneurial activity is concerned otherwise people seem to just do what they are told.

Theme 6: motivation of entrepreneurs

The managing directors seem to be motivated to act entrepreneurially because of their natural authority and recognition for what they do. It appears to be important to have a certain standing in society. In addition to that, the further development of a family

owned business with a long tradition also seems to be a motivating factor to engage in entrepreneurial activity and therewith continually improve and develop the business. Anyhow, there are only three other employees in the company who appear to be motivated to think about new ideas for the company. This can be described as motivated work attitude but not as entrepreneurial activity itself.

Theme 7: personality, characteristics and capabilities of entrepreneurs

It seems that people who have a high identification with the company are engaged in entrepreneurial activities. Further, entrepreneurial active people are described to have a robust character, a healthy self-confidence, assertiveness, courage, and a lot of energy.

Additional findings:

Facilitating factors:

The only facilitation possibility in a small company like this seems to be the delegation of responsibility in the form of project leading tasks.

Barriers:

The many regulations and state laws in the building and construction industry appear to hinder entrepreneurial activity and self responsibility. European norms, for example, require a report about the need for a patch at work because it is treated as industrial accident. Regulations and the subsequent paperwork that come along with it take a lot of time from the managing directors and therefore hinder entrepreneurial activities.

CASE STUDY REPORT: CS-04

Findings according to key themes:

Theme 1: corporate functions

As the organisational structure and the split up of the responsibilities already show there is no clear cut division of labour because the company is too small for a second management level. Entrepreneurial activity therefore appears to happen only in management and in parts of the engineering office. The direct customer contact seems to be an important influencing factor to get a sense of what is really needed on the market.

Theme 2: organisational hierarchies

In the company of case study CS-04 there is only one management level. It seems that entrepreneurial activity is centralized at the managing director of the company. A few new ideas for business solutions also seem to come from the engineering office but these ideas refer to customer problems and solutions and not to general entrepreneurial activity within the company.

Theme 3: activities of entrepreneurs

The basic activity seems to be taking over responsibility. This entrepreneurial responsibility in a small company is described with another depth and quality because in a big company there is always someone above who has to take over responsibility.

Theme 4: personal predisposition and learning

One part of entrepreneurial spirit seems to be personal predisposition. The remaining part is described to be learnable with training and education.

Theme 5: intensities and concentration of entrepreneurial activity

In case study CS-04 it appears that there are different intensities of entrepreneurial activity related to the fact whether a person is able to make decisions or not. It can further be related to the level of education. In general it seems that people with an affinity to freedom tend to engage in entrepreneurial activity.

Theme 6: motivation of entrepreneurs

A motivation for entrepreneurial activity appears to come from the inside of a person as some kind of inner pressure to change and develop something new. And the personal responsibility seems to play a big role as motivating factor.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

The willingness to take over responsibility appears to be the main entrepreneurial capability in this company.

Additional findings:

Facilitating factors:

It appears to be possible to facilitate entrepreneurial activity by actively inviting people to communicate new ideas, giving personal feedback and by delegating responsibility.

Barriers:

Permanent control and work overload are factors that hinder entrepreneurial activity. When a person is swamped with tasks there is no freedom to engage in entrepreneurial activity and the person gets demotivated.

CASE STUDY REPORT: CS-05

Findings according to key themes:

Theme 1: corporate functions

The company in case study CS-05 does not have a functional division in corporate departments. The organisational structure much more represents the respective customer focus. The board members of the company share the tasks of human resource management, finance, accounting, sales and marketing because most of the customer oriented projects involve all three business areas anyhow. In this case it means that a localisation of entrepreneurial activity according to the traditional division of labour is not possible.

Theme 2: organisational hierarchies

It appears that due to the innovation focus of the offered products and services there are many employees with entrepreneurial spirit on all hierarchical levels of the company. It is described that the team leaders meet twice a month and that during these meetings there is a lot of entrepreneurial activity happening in form of communication and collaboration. In addition to that the management board is engaged in entrepreneurial activities when it comes to new business creation and new customer acquisition.

Theme 3: activities of entrepreneurs

The interdisciplinary communication appears to be of great importance. Further, a consistent way of intervening, making counterproposals and searching for intense communication within the company seems to be entrepreneurial activities.

Theme 4: personal predisposition and learning

(No findings to report in this case study)

Theme 5: intensities and concentration of entrepreneurial activity

Entrepreneurial activity is described to be existent in different intensities that are related to the degree of how much personal fulfilment a person finds at work. Many liberties also require a lot of risk taking where self-confidence is needed. Otherwise people would engage in secure given processes and do what they are told but not engage in entrepreneurial activity.

Theme 6: motivation of entrepreneurs

It seems that the idea of helping people in the company motivates employees to act entrepreneurially.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

Entrepreneurial active people appear to be fast, nosy, passionate and willing to take risks. It seems that people who found their passion and are able to live that in their job are engaged in entrepreneurial activities. One of the board members is described as visionary who does not care about what other people think of him.

Additional findings:

Facilitating factors:

In this case it is described that facilitation of entrepreneurial spirit is possible but not for every person. The roles of the facilitator and the facilitated need to be accepted and actively taken.

Barriers:

It hinders entrepreneurial activity when a person is only assessed by performance and numbers. It also hinders if there are no people to communicate and collaborate with when new ideas come up. The discussion of these ideas is important and this can take a long time at the beginning because innovation needs investments and time to start.

CASE STUDY REPORT: CS-06

Findings according to key themes:

Theme 1: corporate functions

Even though there are jobs assigned for the task of financial issues and accounting as well as purchasing, this still does not represent a responsible division of labour across the whole company. The entrepreneurial activities and decisions are still centralised at the two managing directors and the employees work according to given procedures.

Theme 2: organisational hierarchies

The two managing directors and in very limited ways the production supervisor are engaged in entrepreneurial activities.

Theme 3: activities of entrepreneurs

In this case the entrepreneurial activities were described as organising work tasks for the employees.

Theme 4: personal predisposition and learning

Entrepreneurial spirit is related to the personality and not something a person could just learn. However, the experience of a person seems to count as well which means that a person could grow into a role of an entrepreneur with the respective work experience and liberties.

Theme 5: intensities and concentration of entrepreneurial activity

People with an affinity to liberties appear to be entrepreneurial active.

Theme 6: motivation of entrepreneurs

The motivation for entrepreneurial activity comes from having fun at work and from the responsibility of continuing the tradition of the family business.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

Entrepreneurial spirit is related to the personality and mindset. An entrepreneur has assertiveness and the will to succeed.

Additional findings:*Facilitating factors:*

Entrepreneurial activity can be facilitated by role modelling from the management of a company.

Barriers:

Strict rules, guidelines and governmental standards for example in quality management can hinder entrepreneurial activities. In this case the norm conformity requires the use of certain system suppliers which means that innovative creation in the field of craftsmanship is hindered. Furthermore, too much pressure at work hinders entrepreneurial activity and also demotivates the employees.

Appendix G: Case reports of mid-sized companies

CASE STUDY REPORT: CS-07

Findings according to key themes:

Theme 1: corporate functions

The interviews show that the division of labour according to different corporate functions does not play an important role for the entrepreneurial function in this company. The four members of the management team who are responsible for all corporate functions across the company are the main driving force of entrepreneurial activity. That means all corporate functions appear to be involved in the entrepreneurial function but mainly due to the shared management responsibilities. The company views these shared responsibilities as a key advantage because every managing director can be assigned with the most suitable tasks.

Theme 2: organisational hierarchies

It seems that organisational hierarchies play an important role in this company when it comes to the entrepreneurial function. The interviews clearly show that entrepreneurial activity mostly happens on management level. Innovative ideas sometimes also come from team leaders but this is very limited. The management team is seen with innovative power.

Theme 3: activities of entrepreneurs

In case study CS-07 entrepreneurial active people are described to do things on their own risk and bill, as well as recognizing, using and transforming chances and niches on the market. Further, they appear to motivate employees and delegate responsibilities also to younger people. Activities in the areas of sales and marketing, direct customer contact and customer projects also seem to be important for the entrepreneurial function. Additionally, entrepreneurial active people appear to proactively make decisions, have a more global point of view and a sense for financial issues as well, and they engage in work with a lot of blood, sweat and tears.

Theme 4: personal predisposition and learning

In case study CS-07 entrepreneurial spirit is described to be partly something you need to have as personality and partly something that can be developed and trained. Learning to be entrepreneurial active seems to be possible with a strong will, diligence, perseverance, punctuality and ambition. It appears that if a person jumps in at the deep end, this person just has to learn how to swim. This comparison mirrors the attitude towards entrepreneurial activity in this company.

Theme 5: intensities and concentration of entrepreneurial activity

Entrepreneurial activity appears to happen in different intensities in this case study. People with an affinity to liberties tend to be more enthusiastic for entrepreneurial activity than people with an affinity to guidelines, rules and regulation.

Theme 6: motivation of entrepreneurs

In this company there are different reasons why people engage in entrepreneurial spirit. Some of them just want to know and proof that they actually can do it. Living with little securities, playing with varieties and diversion and being successful, seen and acknowledge for it in society seems to be important. Being nosy and having fun with new things appears to be motivating as well. Some people seem to find motivation in their personal fulfilment, fun and fascination for their job. Others seem to be motivated because of a lot of blood, sweat and tears for their job.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

In this company entrepreneurial active people are described as people with a special attempt for a successful business and good performance. One interviewee distinguished two types of entrepreneurs in SMEs: one type that inherits a family business and the other type that creates a new business as visionary. The heritage of a family business can be hard especially when the next generation is not entrepreneurially gifted. An entrepreneur has no desire for security and has to take risks. Being an entrepreneur is further described to be a calling or a gift to a certain extend. It appears to be important to have the ability of dealing with uncertainty and drawbacks, to have a broad back and assertiveness, and to invest blood, sweat and tears without thoughts about extra hours. Entrepreneurs are seen to have a strong personality, love and a strong will for their job, a sense for responsibilities, power, and the ability to fascinate and inspire the employees.

Additional findings:

Facilitating factors:

The interviews in case study CS-07 show that entrepreneurial activity can be facilitated. It appears that this can happen by implementing guidelines that do not restrict too much, by listening to the employees, training and encouraging them, and partly with financial incentives. In the context of new idea generation methods such as brainstorming and mind mapping are described to have facilitating impact on entrepreneurial activity. Further, the management team explained that facilitation is possible by acting as an example in entrepreneurial activity.

Barriers:

In this company the unclear definition of tasks, company goals and vision appears to hinder entrepreneurial activity. Entrenched habits appear to be another barrier. Sometimes people seem to have the feeling of tilting at windmills which causes demotivation and therefore hinders entrepreneurial activity. It further seems to be hindering if problems are not addressed and clarified due to a lack of communication with each other.

CASE STUDY REPORT: CS-08

Findings according to key themes:

Theme 1: corporate functions

The managing directors and the team leader of production process appear to be involved in entrepreneurial spirit. Especially the corporate functions of sales and marketing and the production come up with innovative ideas and seem to engage in entrepreneurial activity. The corporate function of finance and controlling, however, does not seem to be involved in entrepreneurial activity.

Theme 2: organisational hierarchies

In case study CS-08 it seems that the two managing directors and the team leader of production proactively engage in entrepreneurial activities. New ideas seem to be mentioned by other employees as well but the driving force of innovation seems to be centralised in the management team and the team leader for production.

Theme 3: activities of entrepreneurs

Taking responsibility and making decisions appear to be the main entrepreneurial activities in this company. It seems to be important to be aware of the own duties and responsibilities.

Theme 4: personal predisposition and learning

Case study CS-08 describes entrepreneurial spirit as something a person is born with. That means it seems to be some kind of personal predisposition.

Theme 5: intensities and concentration of entrepreneurial activity

People with an affinity to rules and guidelines do not seem to be able to work under pressure which sometimes is necessary when it comes to entrepreneurial activities.

Theme 6: motivation of entrepreneurs

The personal wish for a successful company motivates for entrepreneurial activity.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

In this company entrepreneurial spirit is described to be something a person has to be born for. An entrepreneur has assertiveness, stubbornness and ambition.

Additional findings:

Facilitating factors:

Entrepreneurial activity can be facilitated with incentives and a bonus system. Additionally, social components are important such as staff outings or parties for the employees.

Barriers:

Employees who cannot identify themselves with the company's strategy can be hindering entrepreneurial activities.

CASE STUDY REPORT: CS-09

Findings according to key themes:

Theme 1: corporate functions

First of all, entrepreneurial activity is found in the management team especially with the responsibilities for sales and marketing. The department head of the corporate function of sales and marketing and IT project management appears to be engaged in entrepreneurial activity as well. Finance and controlling appears to play a secondary role in the entrepreneurial process.

Theme 2: organisational hierarchies

It seems that in case study CS-09 entrepreneurial activity is centralised in the management team and one department head who is responsible for sales and marketing and IT project management. The lower organisational levels do not appear to be engaged in entrepreneurial activity due to their focus on performing day-to-day business.

Theme 3: activities of entrepreneurs

In this company it appears that entrepreneurial activities include the decision making with a gut-feeling and the willingness to take risks. The direct customer contact further seems to play an important role as one gets to know ideas, wishes, and demands directly from the customers. These ideas and thoughts are then brought into the company as a challenge to deal with.

Theme 4: personal predisposition and learning

In this company it appears that entrepreneurial spirit is something of personal predisposition meaning a person just has it or not. However, it appears that there is also a part that can be learned and developed. The department head of sales and marketing and IT management for instance had training in innovation management that was offered by the Chamber of Commerce and Industry in Germany for SMEs. This is why it can be stated that it does not seem to be related to some kind of entrepreneurial gen a person has or does not. In fact it refers more to the general openness of a person's mindset.

Theme 5: intensities and concentration of entrepreneurial activity

It seems that there are different intensities of entrepreneurial activity. In this case study CS-09 it can be stated that the higher the organisational management level the more entrepreneurial activity is happening. Further, it seems that people with an affinity to liberties in their scope of responsibilities engage in entrepreneurial activities.

Theme 6: motivation of entrepreneurs

In this case study CS-09 the fun at work and an infantile play instinct seem to be motivating for entrepreneurial activities. Money and incentives appear to be also important in this matter but more on second management level and below.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

In case study CS-09 entrepreneurial activity is described as being depended on the personality. In this context being open for and interested in new things seems to be an important characteristic, as well as the customer orientation in ones mindset. It is further described that creativity and a little craziness belong to a person who engages in entrepreneurial activity. A widened horizon in a person's mindset appears to be an entrepreneurial characteristic as well in order to be able to learn new things.

Additional findings:

Facilitating factors:

It appears that entrepreneurial activity can be facilitated in this company by using an idea management system in order to collect ideas from all employees and also give feedback. This also refers to the delegation of responsibilities to other employees and providing incentives.

Barriers:

In this company it seems that the feedback for innovative ideas from employees is very important. In case this feedback lacks, the employees get demotivated and stop engaging in entrepreneurial activities. Some department heads also seem to steal ideas and sell them as their own. This appears to be a barrier for entrepreneurial activity as the original idea generator is not acknowledged and even can feel tricked by the superior. Another barrier seems to be the unequal dealing with employees with respect to the reaction upon new ideas that are contributed.

CASE STUDY REPORT: CS-10

Findings according to key themes:

Theme 1: corporate functions

In this case study CS-10 entrepreneurial activity does not appear to be related to a specific corporate function. It seems to be more related to certain personalities in management and two technicians on team leader level. The interviews show that the corporate function of finance and controlling does not seem to contribute to the entrepreneurial function.

Theme 2: organisational hierarchies

In this company it seems that entrepreneurial activity is more related to the management and team leader level. The performing employees without leadership function do not seem to be engaged in entrepreneurial activities.

Theme 3: activities of entrepreneurs

In this company the activities of seeing chances and working towards them as well as doing the right things at the right time appear to be important for entrepreneurial activity. This further refers to decision making in a broader sense.

Theme 4: personal predisposition and learning

In this company entrepreneurial spirit is described as partly being a personal predisposition, but also that learning and development is partly possible. It seems to be important to have a strong mindset and will for personal development. Entrepreneurial spirit appears to be comparable with sports because success does not depend on the physical preconditions of a person but on the way this person trains.

Theme 5: intensities and concentration of entrepreneurial activity

It seems that different intensities of entrepreneurial activity are existent but that this depends on how open people are to engage in new things. People with an affinity to liberties therefore appear to be more engaged in entrepreneurial action.

Theme 6: motivation of entrepreneurs

The acknowledgement of other people is described to be an important motivating factor.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

People who engage in entrepreneurial activity seem to be able to suffer for their goals and live their passion. The influence of time and mentality on leadership personality further seems to play an important role. In the 80's pressure and technocracy were predominant. The 90's can be described with a social wave and from the year 2000 onwards creativity was a big influencing factor in leadership.

Additional findings:

Facilitating factors:

If people have liberties, possibilities and responsibilities, it facilitates the engagement in entrepreneurial activity. It appears that the acknowledgement of different opinions and viewpoints is important.

Barriers:

In this company the decisions concerning new ideas mostly refer to the responsible technicians and therefore the ideas need to be very logical and structured. In case an idea does not represent this at the very beginning, the idea can be ignored. This is a barrier for new ideas that sometimes do not refer to technologies in this structured and logic manner.

Furthermore, there is no sales promotion at all because of the direct large customer on site. This is a barrier for entrepreneurial activity because the direct customer contact and sense for the market is not analysed and therefore possible opportunities and ideas do not make their way into the company.

CASE STUDY REPORT: CS-11

Findings according to key themes:

Theme 1: corporate functions

People in the corporate functions of sales and marketing and production seem to be engaged in entrepreneurial activity in this company. In 2004 a new managing director came into the company and reorganised it with a focus on customer orientation. These changes and the emphasis on sales activities as well as the way how to deal with customers appear to have a positive influence on entrepreneurial activity. Before these changes there was a lot of narrow-mindedness and people thought very restricted in their own areas and departments. It seems that with this reorganisation entrepreneurial activity started. The interviews further show that the corporate function of finance, controlling and accounting are more of processing character but do not contribute to the entrepreneurial function.

Theme 2: organisational hierarchies

The above described background of the reorganisation and strategic focus on customer orientation shows that up to now only persons from management level one and two seem to be involved in entrepreneurial activities. The new managing director in sales and marketing appears to be the main driver of entrepreneurial activities.

Theme 3: activities of entrepreneurs

In this case study it seems that active reflection on company processes, communication and taking over responsibilities are entrepreneurial activities.

Theme 4: personal predisposition and learning

It appears that entrepreneurial spirit is something a person has as predisposition but that there is also room for further development in this direction. However, without the predisposition a development does not seem to be possible.

Theme 5: intensities and concentration of entrepreneurial activity

In this company it seems that there are different intensities of entrepreneurial activity. These seem to be related to the degree of liberties a person has and whether it is the right and satisfying job for the person.

Theme 6: motivation of entrepreneurs

In this case study the realisation of success and the respective acknowledgement of personal performances seem to be an important motivating factor to engage in entrepreneurial activity. New liberties and responsibilities in these areas appear to motivate as well.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

In this case study CS-11 entrepreneurial active people are described to be driven from their own entrepreneurial spirit with a strong will for activity.

Additional findings:

Facilitating factors:

It seems that entrepreneurial activity can only be facilitated if people in the company are allowed to present their efforts in this area and are acknowledged for it. The managing directors seem to need a lot of empathy in order to see and facilitate this.

Barriers:

There are a couple of barriers that seem to hinder entrepreneurial activities in this case study. Distrust, very strict rules and regulations, a lack of feedback, communication, and acceptance of other opinions appear to be main barriers that hinder entrepreneurial activity across the all organisational levels. This does not only refer to management levels but to every single employee in the company.

CASE STUDY REPORT: CS-12

Findings according to key themes:

Theme 1: corporate functions

In this company the team leaders of four corporate functions seem to play an important role for the entrepreneurial function. This refers to the functions of production, tool construction and technological development as well as to sales and marketing. The responsible team leaders of these corporate functions seem to engage in entrepreneurial activity with innovative ideas. The function of finance and controlling appears to be of secondary role in this context. The business areas of production, tool construction and technological development represent the technical side of entrepreneurial activity. The team leader of sales and marketing, however, represents the customer and market view of entrepreneurial activity.

Theme 2: organisational hierarchies

The company appears to concentrate entrepreneurial activity mainly on management level one and two. Only very little entrepreneurial activity comes from workers in the plant or technicians on the basis. It is described that people with responsibility for a certain field appear to engage in entrepreneurial activity.

Theme 3: activities of entrepreneurs

Entrepreneurial activity in case study CS-12 seems to consist of making decisions and taking risks, actively listening to customers, communication experience to other people in the organisation as well as thinking with a broader view. These activities appear to be the main entrepreneurial action in this company.

Theme 4: personal predisposition and learning

In this case study entrepreneurial spirit is described to be something a person just has or does not. Therefore, it is only learnable to a limited extend. The general personal basis appears to be a given for entrepreneurs.

Theme 5: intensities and concentration of entrepreneurial activity

In this company entrepreneurial activity appears to happen in different intensities. These intensities seem to be related to a person's general affinity to liberties. People with

responsibilities appear to be engaged in entrepreneurial activity, see changes more quickly, try out new things, are more decisive and also search challenges.

Theme 6: motivation of entrepreneurs

It seems that the possibilities of making own decisions, being successful and improve the image of the company are motivating factors for entrepreneurial activity. Further, fun and passion for the challenges and the acknowledgement of other people appear to motivate in this context. Financial incentives only seem to play a secondary role.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

In case study CS-12 a few characteristics of entrepreneurial active people were described. When it comes to innovative ideas and decisions it seems to be important to stay with it no matter what. These decisions are related to the gut feeling of an entrepreneur. It further seems to be important to have decisiveness, assertiveness and a great passion for the job. Social skills such as empathy for other people appear to characterise entrepreneurial active people as well. Additionally, the characterisation during the upbringing and education of a person also seems to influence the personality and capabilities for entrepreneurial action. Small-minded people and simple workers are said to have little capabilities for engaging in entrepreneurial activity.

Additional findings:

Facilitating factors:

In order to facilitate entrepreneurial activity in this case study it appears to be important to motivate, encourage and acknowledge people, to give room for improvement and to delegate responsibilities so people can actually learn and experience entrepreneurial decision making. Additionally, it seems that flexibility is important to react upon changes. It is further stated that little pressure from the management team facilitates innovative thinking within the company.

Barriers:

In this case study CS-12 many strict rules and regulations appear to be the main barrier for entrepreneurial activity. These rules and regulations seem to be made by the management team and therefore other opinions and new ideas from other people seem

to be neglected which demotivates people to engage in entrepreneurial thinking. Also, the lack of perseverance can be hindering entrepreneurial activities especially when it comes to the communication and discussion of new ideas.

CASE STUDY REPORT: CS-13

Findings according to key themes:

Theme 1: corporate functions

In this case study CS-13 it seems that three corporate functions play an important role for the entrepreneurial function. Firstly, the technological development seems to contribute innovative ideas for new technologies of the different coach lines. Secondly, two team leaders in the production subunits of structural work and completion seem to be involved in entrepreneurial activity. The third corporate function is the sales and marketing department whose responsible leader appears to have a sense for the market and brings in new ideas from direct customer contacts. However, in all interviews it was clearly stated that the two managing directors in their respective responsibilities contribute to the entrepreneurial function as drivers and promotor of innovative ideas. Furthermore, the corporate function of finance and controlling appears to be more of restricting character in the entrepreneurial process. The requirement of detailed business cases for new ideas appears to hinder entrepreneurial activity.

Theme 2: organisational hierarchies

The investigation in this company shows that mainly people with leadership responsibility appear to engage in entrepreneurial activity. This refers to the two managing directors as well as to the team leaders of two production subunits and the department head of sales and marketing.

Theme 3: activities of entrepreneurs

In this company the activities of entrepreneurs include the observation of the market, seeing chances and niches, as well as future technological trends and possibilities. It also seems to be important to make decisions and to be courageous and take risks. Entrepreneurial activity further refers to the observation of economic developments and trends. The communication about new ideas and networking appear to be an important entrepreneurial activity as well.

Theme 4: personal predisposition and learning

Entrepreneurial spirit is described to be something a person just has. This kind of predisposition appears to be necessary as general basis but through experience and learning entrepreneurial spirit can be further developed.

Theme 5: intensities and concentration of entrepreneurial activity

In this company different intensities of entrepreneurial activity appear to be existent and refer to the personal affinity to liberties. A person with a free mind and creativity seems to like liberties in the scope of work and the according responsibilities and decisions. Strict rules and guidelines seem to hinder entrepreneurial activity in this context. Additionally, the interviews show that entrepreneurial spirit seems to be developable as mentioned above in the section about predisposition and learning. This refers to different intensities as well. It is further described that there is no way to stop strong entrepreneurial personalities because of their strong will.

Theme 6: motivation of entrepreneurs

In this company people seem to be motivated to engage in entrepreneurial activities by their personal ambition to perform better than others, by the acknowledgement of others, and also by motivating and encouraging feedback from superiors. The inner curiosity and satisfaction as well as having fun with the work tasks further seem to play a motivating role for entrepreneurial action. The head of technological development described his motivation with the broad range of liberties and responsibilities in his field of deep technological issues.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

In this case study entrepreneurial active people are described to have a lot of professional experience and a broad horizon and mindset. It seems that one part of engaging in entrepreneurial activity is personal experience and the pushing of new ideas and the other part is the analysing and experimenting capabilities. Further, a strong will, the capability to handle drawbacks, curiosity, a certain risk-taking propensity, and strong nerves are described to be important personal characteristics and capabilities. These can be influenced by the upbringing and education of a person.

Additional findings:

Facilitating factors:

In this case study it seems to be possible to facilitate entrepreneurial activity by giving security for the employees so they understand that there is no punishment because of experiments and failure. These liberties appear to play an important role in this context. Another facilitation possibility is the creation of awareness for other corporate functions in order to broaden the view of people in the company and to create transparency. The delegation of responsibilities, encouragement and training of people also appear to facilitate entrepreneurial activity. When people with leadership responsibility are concerned it seems that being an entrepreneurial active example facilitates this view across other employees.

Barriers:

The interviews show certain barriers that hinder entrepreneurial activities. These include the lack of motivation, fun, money and incentives, feedback and acknowledgement from superiors and colleagues, and a lack of communication about new ideas and possibilities. Furthermore, the lack of professional competence and training can be a barrier in this context. In case entrepreneurs do not have a large enough scope of decision making this can also hinder entrepreneurial activity. This barrier can further lead to the feeling that a single person is not able to change something within the organisational system. That means there is no more motivation of engaging in entrepreneurial activity.

Appendix H: Case reports of large companies

CASE STUDY REPORT: CS-14

Findings according to key themes:

Theme 1: corporate functions

The decision responsibilities in this case study are very much centralised to the two managing directors as management team. It appears that in the current company situation the human resource development plays an important role. Entrepreneurial activity is described to happen in the function of human resource management but also in the technological sector of the business. The corporate function of finance and controlling does not appear to be important for the entrepreneurial function and is described to be more of administrative and procedural character but not with innovative power.

Theme 2: organisational hierarchies

Due to the steady growth of the company the organisational structure is still very centralised to the management team. There are not many decision responsibilities on second leadership level. With this background entrepreneurial activity in this company appears to happen mostly in the management team. Only two team leaders in technology and production seem to engage in entrepreneurial action. The basic craftsmen and workers in other departments do not appear to directly contribute to the entrepreneurial function.

Theme 3: activities of entrepreneurs

In this case study CS-14 entrepreneurial activity seems to include fast thinking and also fast decision making. The interviews further show that communication about new ideas and concepts seems to be a key factor of entrepreneurial activity.

Theme 4: personal predisposition and learning

A certain predisposition has to be there but a part of entrepreneurial spirit can also be developed and learned if the person gets facilitation in this area.

Theme 5: intensities and concentration of entrepreneurial activity

In this case study different intensities of entrepreneurial activity appear to be existent. People with a strong will are described to be able to develop and learn to be more entrepreneurial active within the company. The possibilities of coaching and training for instance are provided by the firm.

Theme 6: motivation of entrepreneurs

It seems that the personal curiosity for new things and the personal ambition motivate to engage in entrepreneurial activity. The will to continue a long family tradition and to provide for the employees also seems to play a key motivating role in this context. This strongly refers to the entrepreneurial responsibility of company-owners in general. Further, the feeling that things turn out well is described as a flow-effect and seems to motivate entrepreneurial activity especially when it comes to experiments in new areas and innovative ideas.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

Entrepreneurial activity seems to be depended on the personality. The character of an honourable merchant seems to support being entrepreneurial active as well.

Additional findings:

Facilitating factors:

This company tries to facilitate entrepreneurial activity within the human resource development strategy mainly by offering coaching and mentoring for interested employees. The financial side also appears to be facilitating entrepreneurial activity. This refers to incentives for new ideas.

Barriers:

It seems that people with an aversion to change and new things can be a barrier for entrepreneurial activity. These people block new ideas and try to protect the current status quo.

CASE STUDY REPORT: CS-15

Findings according to key themes:

Theme 1: corporate functions

In this cases study CS-15 it seems that central functions such as human resources, finance and controlling are more of supportive nature from the headquarter but not involved in entrepreneurial activity within the company. The interviews show that team and project leaders of technological development as core business appear to importantly contribute to the entrepreneurial function. Especially the project leaders are described as networkers within the company who communicate a lot at the interfaces of different functions. The technological development for test engineering for instance is described as a new market that can be served separate from the main customer requirements on-site. This refers to a new market possibility that is being exploited out of an innovative idea within the company.

In addition to that there is a regional sales committee that discusses new ideas, market possibilities and customer requirements. It appears that a lot of entrepreneurial activity is happening in this committee as the discussions and decisions concerning new market ideas that are made refer to the strategic vision and innovativeness of the company.

Theme 2: organisational hierarchies

Responsible people on all leadership levels seem to engage in entrepreneurial activity. Team members and workers, however, do not appear to play an important role for the entrepreneurial function. The driving force of innovation within this company seems to be located within the positions of team and project leaders with direct customer contact.

Theme 3: activities of entrepreneurs

In this company the activities of entrepreneurs appear to include the active challenge and drive of new ideas, making respective decisions, and generally engage in proactive thinking. The customer satisfaction seems to be very important. The discussion and communication of new ideas with colleagues and superiors further appears to be of entrepreneurial nature. The interviews show that entrepreneurial active people have visions and appear to just implement and drive these ideas. This also refers to the development of new business and customers where flexibility is needed. That means

sometimes people take personal risks and circumvent certain rules and regulations in order to promote them.

Theme 4: personal predisposition and learning

Entrepreneurial spirit appears to be partly gifted. Learning seems to be possible but depends on the job and the liberties a person has. However, the development from one extreme to another does not seem to be possible without a general predisposition. This was described with the analogy that a dachshund cannot be turned into a Rottweiler. This refers to the point that a person has a personality and character that cannot be changed into something completely different.

Theme 5: intensities and concentration of entrepreneurial activity

In this company different intensities of entrepreneurial activity seem to be existent. People with an affinity to liberties engage in entrepreneurial activity whereas rules and guideline oriented people seem to focus on the day-to-day business only. It is described that with more responsibility in the company more entrepreneurial activity is possible. These entrepreneurs seem to be more goal-oriented and therefore more innovation driven.

Theme 6: motivation of entrepreneurs

Motivating factors for people to engage in entrepreneurial activity in this company seem to include the wish for personal fulfilling and further personal development, fun and good mood at work, as well as an inner drive to be able to change something and to master different challenges. Entrepreneurial active people further feel motivated when they can live and decide with enough liberties in their scope of work and responsibilities. The acknowledgement of others, a few financial incentives and respective career possibilities were mentioned as well but do not seem to be a key motivator for entrepreneurial activity.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

In this company entrepreneurial activity appears to depend on certain personalities, characteristics and capabilities. The interviews show that the infrastructure of a person's upbringing and the development of a general open mindset seem to play an important role in this context. Entrepreneurial active people in the company are described to have a strong will, empathy, curiosity, a certain risk-taking propensity, an inner ambition for

change and new things, as well as assertiveness and self-confidence. The ambition for success is described to be of unselfish nature. Success appears to be important but not in the sense of selfishness. The orientation for the long run seems to play an important role for entrepreneurial activity.

Additional findings:

Facilitating factors:

In this case study CS-15 a number of facilitating factors were described how entrepreneurial activity can be fostered. These include the delegation of responsibility, a lot of communication about new ideas, problems and issues, and the creation of an environment that welcomes and values entrepreneurial activity. This further refers to the encouragement of people to get weird ideas, to think with a more broaden viewpoint, to leave entrenched habits, and to give room for other opinions. It seems that this can only happen if liberties and also budget is provided by the company. Trainings, coaching, and incentives were evaluated to only facilitate entrepreneurial activity in a limited way.

Barriers:

Entrepreneurial activity apparently can be hindered in many ways. In this case study it seems that some leaders block new ideas due to their own aversion towards change and the ambition to hold on to entrenched habits as well as to their own positions. In this context it is frustrating for entrepreneurs if there is no feedback at all concerning their communicated new ideas from superiors. This can be described by acting as bad example and displays a barrier for entrepreneurial activity. The punishment of an entrepreneur who experiments with new ideas that turn out to be a flop afterwards can be a barrier as well. The culture and environment of an innovation friendly company can be destroyed with that.

Additionally, people can simply have too much workload and therefore no time and energy for engaging in entrepreneurial activity. The frequent change of superiors can also be hindering as well as if superiors have the feeling of being overlooked.

CASE STUDY REPORT: CS-16

Findings according to key themes:

Theme 1: corporate functions

The interviews in this case study show that the corporate function of sales and marketing, production and technological development appear to play an important role for the entrepreneurial function. The head of sales and marketing who is managing director and CEO of the company seems to be the main driver of innovation within the company because he actively engages in technology scouting on the market to get new ideas and listens to the needs and wishes of customers. Within the corporate function of production this company seems to have two specially gifted technicians who engage in entrepreneurial activity by searching and finding creative solutions for innovative products or parts of them. These two technicians appear to be toolmaker, constructors and solution finder in one person.

The company started to engage in their own research projects and the head of department of technological development appears to be entrepreneurial active as well. The technological development side was important for the success of the company for many years but the in-house development of innovative products seems to be driven mainly by the person with responsibility for the department of research and development.

In addition to that, the head of human resources appears to be involved in entrepreneurial activity in some parts as well. During the last few years there were many changes in responsibilities within the company. Therefore, the head of human resource management served as steady contact person with concepts for facilitating the company's employees. That is why many ideas were discussed with the head of human resource management. In some parts this made him be part of the entrepreneurial process as well.

Furthermore, the interviews show that the corporate functions of accounting, finance and controlling, purchasing as well as the legal department do not seem to be engaged in entrepreneurial activities. These functions were described to be more of processing character but without innovative ideas for the company.

Theme 2: organisational hierarchies

In this case study it seems that mainly people with leadership responsibility engage in entrepreneurial activity, such as the managing director, CEO and head of sales and marketing, as well as the head of production. However, the two specially gifted technicians seem to play an important role for the entrepreneurial function as well with their creative ideas but they do not have leadership responsibility. The interviews further show that innovative ideas need to be related with power. That means that entrepreneurial activity seems to be split up on different organisational levels with respective management power to drive these ideas into decisions.

Theme 3: activities of entrepreneurs

The above described important roles and responsibilities for the entrepreneurial function seem to engage in networking, communication and cross-functional collaboration. In order to drive innovative ideas the activity of feasibility checks appear to be an important entrepreneurial activity.

Theme 4: personal predisposition and learning

In this company entrepreneurial spirit is described to be part of the personality. That means it is given to a person and not just something people can learn through a coaching. However, people with this kind of predisposition and personality further can learn how to deal with it and improve their entrepreneurial capabilities. The main point in this case study appears to be the curiosity for new things. A person who engages in entrepreneurial activity seems to be willing to learn and discover new things.

Theme 5: intensities and concentration of entrepreneurial activity

It appears that people with leadership responsibility play an important role in this company in order to drive and foster innovation. It therefore seems that there is entrepreneurial spirit on leadership level. There are only two technicians and developers who engage in creative ideas solutions and entrepreneurial activity but these people are in need of a management responsible in order to drive and promote the ideas. That is why it appears that different intensities of entrepreneurial spirit seem to be existent in this company.

Theme 6: motivation of entrepreneurs

In this company personal ambition and acknowledgement seems to be motivating factors for entrepreneurial activity. The fact that problems and ideas are heard and processed seems to be motivating as well. Incentives and financial bonus appear to only play a secondary role in this context. If people have fun at work and a good cultural climate they seem to be motivated to engage in entrepreneurial activity. It seems to be necessary that entrepreneurs in the company have room and responsibility for their own decisions concerning innovative ideas.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

The entrepreneurial active people in this case study are described with a very open mindset for new things and new ideas. Curiosity, team work capabilities, and conflict management capabilities appear to be important characteristics as well. It seems that when innovative ideas are concerned entrepreneurs need to be fearless in dealing with other people because new ideas and new paths are always difficult to be introduced in the company. Furthermore, entrepreneurs are described to be alpha leaders. This applies to the person of CEO and head of sales and marketing in the way he drives decisions and ideas for new markets.

Additional findings:

Facilitating factors:

It seems that entrepreneurial activity can be facilitated by delegating responsibility and therewith giving room for ideas. In case employees communicate new ideas these should be evaluated and feedback should be provided. This is another facilitating factor. Furthermore, a general openness for other ideas and opinions create a culture that facilitates entrepreneurial action. This also refers to an open communication about new ideas as well as collaboration and networking between different corporate functions. In this case study this collaboration was tried out with the help of an organised ideas meeting for people from different functions. The interviews further show that an entrepreneurial example on management level plays an important role for facilitation throughout the different organisational hierarchies. However, it appears that facilitation is only possible if there are people who are open to learn and open to change.

Barriers:

The interviews brought up a number of barriers that hinder entrepreneurial activities. First of all, old and entrenched habits, organisational structures, networks and responsibilities seem to be a barrier for change and for entrepreneurial activity. Unclear responsibilities, especially concerning the founder and owner of the company in the background, seem to be a barrier as well. The interviews further show that the lack of sustainable tracking of ideas, the lack of time in day-to-day business due to heavy workloads, and the lack of openness and experimentation concerning innovative ideas are hindering the entrepreneurial function. Additionally, the many rules and regulations due to quality norms and customer requirements appear to be a barrier for creative ideas. The interviewees described that years ago there were only two or three correction loops for new solutions. Due to the many more regulations today there are up to seven correction loops which makes it very difficult to drive innovative ideas quickly. Lastly, a few people in the own company appear to be barriers for entrepreneurial activity themselves. These people seem to have a problem with change and therefore sometimes hold back information or block new ideas which results in some kind of power games between different responsible people. This can hinder entrepreneurial activities from people in lower organisational hierarchies.

CASE STUDY REPORT: CS-17

Findings according to key themes:

Theme 1: corporate functions

In this case study it appears that there are no special corporate function that plays a higher role for the entrepreneurial function. However, the two managing directors with their responsibilities for technological development, production and sales seem to play the main role. The department of finance and controlling does not seem to contribute to the entrepreneurial function with innovative activities and therefore can be neglected in this context.

Theme 2: organisational hierarchies

The special company situation of the fast growth of the company explains the hierarchical structure and the fact that the management team is still involved in so many details of the day-to-day business and issues. Especially the two managing directors appear to play the key role for the entrepreneurial function in this case study. That means that entrepreneurial activity mainly appears to happen on management level but not that much on team leader or manufacturing level.

Theme 3: activities of entrepreneurs

The activities of entrepreneurial active people in this case study appears to be directly related to taking over responsibility and also delegating work with clear instructions. The managing directors as main entrepreneurs in the company seem to just do it. This refers to the situation that there are no clear process descriptions of how things are done.

Theme 4: personal predisposition and learning

In this company it seems that entrepreneurial spirit is something a person just has and that it appears to be related to a person's willingness to take over responsibility. It is further described to be partly learnable which means that people with certain predisposition can learn to engage in entrepreneurial activities and get more and more experience.

Theme 5: intensities and concentration of entrepreneurial activity

It appears that in this company there are different intensities of entrepreneurial spirit but they are described to be related to the liberties a person has in the company to make own decisions and take over responsibility.

Theme 6: motivation of entrepreneurs

Entrepreneurs in this case study appear to be motivated by being acknowledged for having a big business and for being successful. Additionally, the vision to sell the own agricultural machines across the whole world seems to motivate as well. Both of these motivating factors refer to the personal passion about the own job and products.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

In this company entrepreneurial active people are described as dominant people who have a sense for the market and technological trends, who know their personal limits, and who are ready to take risks. The interviews further show that living for a goal and with a vision appears to be an important characteristic as well as being concerned with company related issues and topics. This also refers to the mindset and the situation that things bother entrepreneurial people even after work.

Additional findings:

Facilitating factors:

In this case study it seems that trusting people with responsibility, giving room for development and own ideas, as well as praise, acknowledgement and appreciation seem to be facilitating factors to enhance entrepreneurial activity within the company.

Barriers:

The situation that the management team tends to change their minds about further made decisions very quickly appears to be a barrier for entrepreneurial activity of other people in the company. In addition to that the management team and other employees are related to each other. This family structure can also be a barrier because of a lack of clear communication that further has an influence on other people as well. Lastly, the interviews show that rules, regulation and too much hierarchy appear to be barriers for people to engage in entrepreneurial activity. The hierarchy argument however is more related to the situation that the two managing directors are involved in too many details of many projects and therefore also in the detailed decision making.

CASE STUDY REPORT: CS-18

Findings according to key themes:

Theme 1: corporate functions

In this case study it seems that the integration of the two functions of sales and product development plays a key role for the entrepreneurial function when it comes to innovative new products. The interviews show that each business area of the company collaborates with the central research and development department in order to develop new products. The sales function appears to be especially important in the context of getting new ideas and listening to existing customer problems and market needs. Other corporate functions such as finance, human resource management, or quality management do not seem to be important for the entrepreneurial function itself.

Theme 2: organisational hierarchies

In this company it appears that entrepreneurial activity is not necessarily related to leadership tasks. The interviews show that due to the family ownership and central management as umbrella organisation there seems to be a difference between people who have entrepreneurial capabilities in the sense of risk taking and investing in new ideas as owners and creative people with innovative ideas and the will to create new products.

Theme 3: activities of entrepreneurs

The entrepreneurial activities in this case study are described to concern two parts. The one is to see problems and chances from customers and the other one is to see the technological possibilities behind it from company side. The direct communication with customers about their problems seems to be a central entrepreneurial activity in this context. In this case study this communication happens during customer visits, conferences, and trade fairs. Entrepreneurial active people appear to bring together these two parts and therewith integrate sales and technological knowledge. The product development part further requires knowledge how to experiment with certain products and how to test new developed parts. It seems to be especially important that entrepreneurs know both of these worlds, the sales and the product development world, and that they overcome this gap.

Another important activity of entrepreneurs appears to be the decision making based on a gut feeling. When it comes to innovative ideas the situation is characterised with high uncertainty but an entrepreneurial active person appears to analyse what information is given and what is missing and then decides on what is believed.

Theme 4: personal predisposition and learning

In this case study the entrepreneurial spirit is characterised more by the personal curiosity of entrepreneurial active people. This however appears to be something a person just has as predisposition and not something learnable.

Theme 5: intensities and concentration of entrepreneurial activity

In this case study there is no evidence that different intensities of entrepreneurial activity are existent.

Theme 6: motivation of entrepreneurs

Entrepreneurs appear to be motivated in this company by the stimulus of creating something new to the world. The personal ego seems to play a motivating role as well but more generally these people appear to enjoy their liberties to create something. Money in the form of financial incentives seems to be less important in this context.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

In this company entrepreneurs are described to have a combination of curiosity, play instinct and analytical perseverance. A sophisticated and open mindset appears to be important as well as a high frustration tolerance because sometimes new ideas do not turn out to be successful. In this process it seems that having fun at work and with experiments is a further important characteristic. The combined knowledge about the market, technologies, customers, production processes, as well as the machines and their possibilities appear to be a main success factor for entrepreneurial activities which is related to the personal experience of the entrepreneurs themselves.

Additional findings:

Facilitating factors:

In order to facilitate entrepreneurial activity in this case study it seems that the general possibility and a supportive environment for unconventional working methods and experimentation are important for those people who are willing to be venturesome and learn something new. Experiments cost money due to time and materials that are invested and the company has to provide these resources. It further seems to be important for the firm to have a clear understanding of the own success factors that provide security and stable production and profits. This security appears to facilitate that in some parts there is uncertainty, experimentation and risk. The investment in new ideas appears to be necessary in the long run. In the meantime uncertainty and risk has to be tolerated. In this process it seems to be important for entrepreneurial active people that they have some kind of emotional support from the company environment for new ideas even if they do not turn out to be successful.

Barriers:

Rules and regulation, strict business case requirements and a given process landscape with limited liberties for experimentation appear to be the main barriers for entrepreneurial activity in this company. Sometimes an innovative idea points into the opposite direction than the established processes show. The circumvention of these entrenched and strict processes appears to be a barrier as well.

CASE STUDY REPORT: CS-19

Findings according to key themes:

Theme 1: corporate functions

In this case study it appears that the corporate functions of sales and marketing as well as the new IT department contribute to the entrepreneurial function. The new business segment that provides media consulting, back-up and cloud computing services for other companies appears to be one innovative development of the company. The interviews further show that the central departments of finance and accounting do not seem to be engaged in entrepreneurial activities and have a more administrative character.

Theme 2: organisational hierarchies

In this case study mainly people on second management level appear to be involved in entrepreneurial activity. The managing directors of the holding company seem to give a lot of responsibilities to the respective managers of the business areas.

Theme 3: activities of entrepreneurs

Entrepreneurial activities in this company appear to include networking, collaboration and a lot of communication between the different corporate functions and business areas. Entrepreneurial active people seem to have a sense for the market, search for new ideas and smell new business opportunities. They visit conferences, meetings, customers and talk to them about current problems and wishes. Decision making about what the market could adapt and which demands will be satisfied also belongs to entrepreneurial activities. In this company these decisions refer to topics such as new online media, apps, mobile devices, as well as data management and security in data storage.

Theme 4: personal predisposition and learning

Entrepreneurial spirit is described to be something a person has or does not. The interviews show that it is not possible to just learn it without having this kind of predisposition and an intrinsic motivation for personal development.

Theme 5: intensities and concentration of entrepreneurial activity

Entrepreneurial activities seem to be existent in different intensities in this company but appear to be closely related to the degree of liberties a person has to communicate and implement new ideas. That means the intensities refer to the leadership style of the superior and management team of the company. It is described that people with liberties in their responsibilities and decision making appear to engage in entrepreneurial activity. The former head of IT and the new developed business area is an example for these liberties. Additionally, the interviews show that the personal will to engage in entrepreneurial activities plays an important role as well.

Theme 6: motivation of entrepreneurs

Entrepreneurial active people appear to be motivated due to their fun at work, their experience, and their possibilities to actually reach and implement new ideas. Personal curiosity, passion, the will to help and change situations, as well as an adventurous spirit further seem to be motivating factors. Entrepreneurs also seem to be proud of their achievements.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

People with entrepreneurial spirit are described to have a flexible mind, a lot of experience how to deal with different people in business, as well as visions and personal goals that they want to achieve. Additionally, the interviews show that these entrepreneurial active people are willing to take risks, are somehow restless in their search for new ideas and possibilities, and like it to try out and experiment with new things.

Additional findings:

Facilitating factors:

In this case study it appears that entrepreneurial activity can be facilitated through encouragement, acknowledgement, openness for change, and an open culture for experimentation. The delegation of responsibility to other people as well as financial incentives also seems to have facilitating influence. The environment and company culture appear to play an important role for facilitating the entrepreneurial function. The

combination of welcoming curiosity, adventurous spirits, as well as commitment and acknowledgement seem to be a key factor to create such a fear free environment.

Barriers:

Leadership weakness and the aloofness of superiors appear to be hindering entrepreneurial activity in this case study. It seems that in the past the company culture was characterised by a strict hierarchy and a lot of authority in the leadership style. This was described to be a main barrier for people to engage in entrepreneurial activity. In the part of production and printing technology it seems that entrenched habits and a missing attitude towards change seem to hinder entrepreneurial activity.

CASE STUDY REPORT: CS-20

Findings according to key themes:

Theme 1: corporate functions

It seems that the functions of sales, technological service, and business development play an important role for the entrepreneurial function. Especially application technicians and engineers appear to have innovative ideas in this context. The corporate department of finance and controlling does not seem to be involved in entrepreneurial activity and instead appears to kill innovative projects with strict business case calculations.

Theme 2: organisational hierarchies

It seems that in this company entrepreneurial activity happens on management level one and two but only due to communication with other people outside the company on conferences and through networks. People from the operative business on leadership level three and four also seem to be partly involved in entrepreneurial activities but only in the context of new improvement ideas.

Theme 3: activities of entrepreneurs

It appears that networking, ignoring certain rules, and trying to drive new ideas are entrepreneurial activities in this company.

Theme 4: personal predisposition and learning

Entrepreneurial spirit appears to be nothing a person can only learn by training or education.

Theme 5: intensities and concentration of entrepreneurial activity

Due to the administrative culture of the company there is no evidence of different intensities of entrepreneurial activities.

Theme 6: motivation of entrepreneurs

The motivation to engage in entrepreneurial activity is described to be related to personal power play and the focus on the development of personal careers only.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

Entrepreneurial active people are described to be impatient, open-minded, and unconventional thinker.

Additional findings:

Facilitating factors:

A facilitation of entrepreneurial activity appears to be possible only by providing incentives for new ideas and acknowledging people for their achievements. It appears to be important that people have liberties to create and decide on new ideas but these possibilities do not seem to be used very often.

Barriers:

The general focus on preserving the status quo seems to be the main barrier for entrepreneurial activity in this case study. In case people communicate new ideas there is no further feedback on how these ideas are evaluated and processed. This demotivates people who actively engaged in entrepreneurial thinking.

CASE STUDY REPORT: CS-21

Findings according to key themes:

Theme 1: corporate functions

In this case study it seems that two corporate functions play key roles for the entrepreneurial function. The production development appears to be involved in entrepreneurial activities and comes up with new ideas for production methods and possibilities. On the other hand, sales and marketing seem to bring in innovative product ideas from the view to customers and market trends. The central function of finance and controlling does not seem to contribute to the entrepreneurial function.

Theme 2: organisational hierarchies

In this company it seems that mainly the management team and the head of one production plant engage in entrepreneurial activities. That means leadership responsible people seem to be involved. The interviews further show that these entrepreneurial active people appear to think about ideas with a broader view for the resulting consequences.

Theme 3: activities of entrepreneurs

In this case study CS-21 it seems that entrepreneurial activities mean to create something new by using the existing knowledge, to make fast decisions, and to be open for all kind of ideas. These activities are compared to the ones of a director of an orchestra who has fun, is dedicated to the music, has an imagination for the sound, makes a decision when to start, and also hears wrong sounds and stops them.

Theme 4: personal predisposition and learning

The interviews show that a person just has the instinct for entrepreneurial possibilities. Learning is only possible with this predisposition and if that person also has fun and passion for further development.

Theme 5: intensities and concentration of entrepreneurial activity

Entrepreneurial active people seem to be fans of liberties, not of rules and guidelines. Different intensities do not appear to be existent in this case study.

Theme 6: motivation of entrepreneurs

Entrepreneurial active people in this company seem to be motivated due to their personal fun and passion for their work, their play instinct, and their will to be successful. A general optimism and trust in God appears to be necessary and the acknowledgement for what is achieved within the company.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

An entrepreneur is described to feel comfortable in this role with responsibility, fantasy, perseverance, courage, strong nerves, reliability, and the ability to take criticism. It appears that the capability of self-reflection and the knowledge of how to deal with different kind of people in the company are important for entrepreneurial activities.

Additional findings:

Facilitating factors:

It seems that liberties for weird ideas facilitate entrepreneurial activities in the company. The interviews show that the delegation of responsibility and decision making authority also seem to ease the way for people to engage in entrepreneurial activity. The managing directors further evaluated that being a good entrepreneurial example is important for other people in the company. More generally, the facilitation of creativity through arts and music in the whole education system at schools and universities appears to be important to facilitate entrepreneurial capabilities early on. A single concentration on knowledge does not seem to be enough.

Barriers:

In this case study a centralistic organisation appears to hinder entrepreneurial activity. As the company grew the structures and administration had to grow as well but a controlling and business case systematic for new ideas seem to be a barrier in this context. It further seems to be hindering entrepreneurial activity if people are treated unfair or not equal in the company when they bring in new ideas.

CASE STUDY REPORT: CS-22

Findings according to key themes:

Theme 1: corporate functions

The corporate function of sales and marketing appears to play the key role for the entrepreneurial function in this case study. The sense for the market and a listening ear directed to the customers appear to be very important in this context. Finance and controlling does not seem to be involved in entrepreneurial activity but still remains a key function for this unit in the context of price evaluation of used agricultural machines for further selling.

Theme 2: organisational hierarchies

The product and regional manager level appears to be involved in entrepreneurial activities but also employees from trading with used agricultural machines appear to contribute to the entrepreneurial function.

Theme 3: activities of entrepreneurs

The finding of new sales possibilities and sales channels appears to be a central entrepreneurial activity in this case study CS-22.

Theme 4: personal predisposition and learning

In this company unit it appears that entrepreneurial spirit is partly given to a person and partly can also be learned. The learning factor seems to be related to the personal ambition.

Theme 5: intensities and concentration of entrepreneurial activity

People with an affinity to liberties appear to have more entrepreneurial power and other people with affinities to strict rules and guidelines are more of administrative character.

Theme 6: motivation of entrepreneurs

It seems that the fun at work and the desire to be successful in the job are motivating factors to engage in entrepreneurial activities.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

An entrepreneurial active person seems to be willing to take risks and responsibility.

Additional findings:

Facilitating factors:

In this case study the motivation and encouragement of people appears to facilitate entrepreneurial activity. It further seems to be important to delegate responsibility and to provide liberties in decision making.

Barriers:

It appears that long decision procedures hinder entrepreneurial activity. Furthermore, bad experiences and resulting fears seem to be a barrier to engage in entrepreneurial activity.

CASE STUDY REPORT: CS-23

Findings according to key themes:

Theme 1: corporate functions

It appears that the corporate function of sales and marketing comes up with innovative ideas because they pick up ideas and problems directly from customers. Additionally, the technological development departments seem to play a key role for the entrepreneurial function if they focus on customer needs. Within the development department there is a special unit for innovation and new business generation. This team is paid to come up with innovative ideas for the company and therefore has a lot of pressure. The collaboration and networking with sales and marketing as well as the technological development appear to be key factors to contribute to the entrepreneurial function. The interviews further show that the corporate function of finance and controlling does not seem to engage in entrepreneurial activity.

Theme 2: organisational hierarchies

In this company it appears that different hierarchical levels are involved in the entrepreneurial activities, not only management responsible. This includes the innovation team for instance.

Theme 3: activities of entrepreneurs

Entrepreneurial activity appears to include networking inside and outside the company. The communication about new ideas with other functions and colleagues seems to be important as well. The interviewees describe it with showing momentum and movement. This is further related to taking risks and starting to visualise ideas in early development stages for a better understanding and imagination.

Theme 4: personal predisposition and learning

In this case study entrepreneurial spirit and the sense for new ideas are described to be something a person just has. It further seems to require existing possibilities in order to implement new ideas because sometimes it may be a great innovative idea but not the time for implementation yet.

Theme 5: intensities and concentration of entrepreneurial activity

People with an affinity to rules and regulation appear to live in restricting environments. For innovative ideas an affinity to freedom and working outside the line seem to be necessary.

Theme 6: motivation of entrepreneurs

Entrepreneurial active people appear to be bored by the status quo and have a strong desire for new exciting things that motivate them. The fun with experiments and surprise also seems to be an important motivating factor to engage in entrepreneurial activity.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

Entrepreneurial active people are described with an inner restlessness and an ongoing waiting for possibilities. Furthermore, a positive attitude towards change and challenges appears to be an important characteristic for entrepreneurs.

Additional findings:

Facilitating factors:

It appears to be possible to facilitate entrepreneurial activity if these entrepreneurs sit on the right position with liberties and not with strict procedural and administrative tasks. Clear targets, a rewarding system, as well as the signal from the management team to be open for taking risks seem to be facilitating factors. In this case study it seems that the fast process with a quick and dirty approach, with a high level sanity check only, with prototyping and testing, results in fast decisions and therefore in time advantages. This fast process appears to facilitate entrepreneurial activity.

Barriers:

In this company it seems that strict rules and processes in the development with business cases are a hindering process for innovative ideas because it takes about three years to launch something new. This culture of business case proving can be named as barrier. Furthermore, it can be hindering if the company has a culture where you are not allowed to fail and experiment with new ideas.

CASE STUDY REPORT: CS-24

Findings according to key themes:

Theme 1: corporate functions

In this case study specially gifted technicians in the business unit of technology and infrastructure appear to play an important role for the generation of innovative ideas. Finance and controlling as well as other administrative parts do not seem to contribute to the entrepreneurial function.

Theme 2: organisational hierarchies

The interviews show that entrepreneurial activity seems to happen on different hierarchical levels. On the one hand the gifted technicians seem to play an important role and on the other hand the managing directors and their decision making as well.

Theme 3: activities of entrepreneurs

It seems that the active engagement in communicating about new ideas with people inside and outside the company, the challenging of the status quo, as well as deciding on the right projects belong to the entrepreneurial activities in this case study. It appears that customer needs, technological feasibility, and risk and decision making are collaborative entrepreneurial activities that all contribute to the entrepreneurial function. The language transfer between these different worlds appears to play a key role in the entrepreneurial activity.

Theme 4: personal predisposition and learning

Entrepreneurial spirit is described to be something a person just has or does not. The learning part appears to be very limited.

Theme 5: intensities and concentration of entrepreneurial activity

Different intensities of entrepreneurial activity appear to be existent in this case study and seem to be related to the personal goal and the ability to drive and implement new ideas. In this context liberties play a key role for entrepreneurial activity.

Theme 6: motivation of entrepreneurs

People who engage in entrepreneurial activity seem to be motivated by the fun at work and by the experience of creating new things. It further appears that these people want to be acknowledged for their performance.

Theme 7: personality, characteristics, and capabilities of entrepreneurs

Entrepreneurial active people in this case study are described to be restless and enthusiastic about new ideas, with a lot of personal curiosity, and an open and creative mindset. Further, these people seem to be willing to take risks and have a good self-reflective capability.

Additional findings:

Facilitating factors:

In this case study CS-24 it seems that if liberties and financial resources to try out new things are provided, it facilitates entrepreneurial activity. The delegation of responsibility and an intense communication and feedback culture appear to be important facilitation factors as well. People who engage in entrepreneurial activities in further seem to be over loaded with other projects so there is very limited time for innovation. In order to facilitate these people the work load issue has to be solved and resources need to be provided in order to cut slack for entrepreneurial activity.

Barriers:

The above described work overload situation of innovative people is a barrier for entrepreneurial activity. A lack of communication and a complex administration are other hindering factors. Sometimes demotivating comments from colleagues concerning new ideas appear to be a barrier for entrepreneurial activity as well which mainly refers to interpersonal issues.

Appendix I: Influencing factors of entrepreneurial activities

Facilitating factors in small companies:

	SMALL COMPANIES				
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Yes	P-84a Yes, you can facilitate entrepreneurial spirit but only to a given amount.	CS-01; CS-02; CS-03; CS-04; CS-05; CS-06	6	I-14; I-16; I-27; I-39; I-33; I-30; I-29	7
Liberties	P-85a You can facilitate entrepreneurial activity by leaving liberties for development.	CS-01; CS-02; CS-03; CS-05	4	I-16; I-27; I-39; I-30	4
Responsibility	P-86a You can facilitate entrepreneurial activity by delegating responsibility with budget and support.	CS-01; CS-02; CS-03; CS-04; CS-05	5	I-14; I-27; I-39; I-33; I-30	5
Way of living	P-87a You can facilitate entrepreneurial activity by living a balanced and disciplined life mentally and physically.	CS-01	1	I-14	1
Example	P-88a You can facilitate entrepreneurial activity by setting an example on higher management levels.	CS-06	1	I-29	1
Feedback	P-90a You can facilitate entrepreneurial activity by giving positive feedback and by communicating a lot.	CS-04	1	I-33	1
Leadership	P-93a Good leadership practice based on a focus of the employees as human beings is important for entrepreneurial activity.	CS-01	1	I-16	1

Facilitating factors in mid-sized companies:

	MID-SIZED COMPANIES				
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Yes	P-84b Yes, you can facilitate entrepreneurial spirit but only to a given amount.	CS-07; CS-08; CS-09; CS-10; CS-11; CS-12; CS-13	7	I-63; I-64; I-65; I-66; I-67; I-68; I-56a; I-31; I-32a; I-36a; I-28a; I-47; I-48; I-49; I-50; I-51; I-52; I-53; I-24; I-26a	20
Liberties	P-85b You can facilitate entrepreneurial activity by leaving room for development.	CS-09; CS-13; CS-07; CS-10; CS-11; CS-12	6	I-32a; I-23; I-63; I-36a; I-28a; I-48; I-52; I-53; I-24; I-26a	10
Responsibility	P-86b You can facilitate entrepreneurial activity by delegating responsibility with budget and support.	CS-07; CS-09; CS-11; CS-12; CS-13; CS-10	6	I-64; I-32a; I-28a; I-49; I-52; I-24; I-26a; I-36a; I-48	9
Example	P-88b You can facilitate entrepreneurial activity by setting an example on higher management levels.	CS-07; CS-13; CS-12	3	I-65; I-25; I-47	3
Challenge	P-89a You can facilitate entrepreneurial activity by challenging people and applying pressure.	CS-07; CS-12	2	I-68; I-51; I-64	3
Feedback	P-90b You can facilitate entrepreneurial activity by giving positive feedback and by communicating a lot.	CS-07; CS-10; CS-11; CS-12; CS-13	5	I-64; I-36a; I-28a; I-47; I-49; I-50; I-53; I-23; I-24; I-25; I-26a	11
Training	P-91a You can facilitate entrepreneurial activity by training and coaching people (innovation training, personal trainings, management trainings, external help).	CS-07; CS-12; CS-13	3	I-64; I-65; I-66; I-68; I-48; I-49; I-24; I-25; I-26a	9
Incentives	P-92 You can also facilitate entrepreneurial activity with incentives.	CS-07; CS-08; CS-09; CS-13	4	I-64; I-56a; I-32a; I-23	4
Leadership	P-93b Good leadership practice based on a focus of the employees as human beings is important for entrepreneurial activity.	CS-07; CS-09; CS-11; CS-12	4	I-63; I-31; I-28a; I-47	4

Facilitating factors in large companies:

	LARGE COMPANIES				
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Yes	P-84c Yes, you can facilitate entrepreneurial spirit but only to a given amount.	CS-15; CS-16; CS-14; CS-17; CS-18; CS-19; CS-20; CS-21; CS-22; CS-23; CS-24	11	I-57; I-02b; I-12; I-41a; I-46a; I-60; I-71; I-74; I-04b; I-06b; I-09; I-40a; I-45; I-62; I-22; I-34a; I-38; I-55; I-69; I-42a; I-43; I-54; I-73a; I-15a; I-35; I-18; I-19; I-20; I-17; I-61; I-72	31
Liberties	P-85c You can facilitate entrepreneurial activity by leaving room for development.	CS-15; CS-16; CS-17; CS-18; CS-20; CS-22; CS-24	7	I-60; I-71; I-74; I-08; I-09; I-10; I-11; I-12; I-13; I-45; I-62; I-75; I-42a; I-73a; I-72; I-18	16
Responsibility	P-86c You can facilitate entrepreneurial activity by delegating responsibility with budget and support.	CS-14; CS-15; CS-16; CS-17; CS-19; CS-21; CS-22; CS-24	8	I-41a; I-46a; I-57; I-71; I-01; I-02a; I-02b; I-13; I-40a; I-45; I-38; I-43; I-73a; I-20; I-72	14
Way of living	P-87b You can facilitate entrepreneurial activity by living a balanced and disciplined life mentally and physically.	CS-15; CS-16; CS-19; CS-21	4	I-70; I-10; I-55; I-43	4
Example	P-88c You can facilitate entrepreneurial activity by setting an example on higher management levels.	CS-16; CS-17; CS-19; CS-20; CS-21	5	I-09; I-13; I-45; I-22; I-42a; I-54; I-17	7
Challenge	P-89b You can facilitate entrepreneurial activity by challenging people and applying pressure.	CS-15; CS-16; CS-17; CS-19; CS-22; CS-23; CS-24	7	I-46a; I-60; I-01; I-08; I-45; I-55; I-73a; I-35; I-20; I-61	10
Feedback	P-90c You can facilitate entrepreneurial activity by giving positive feedback and by communicating a lot.	CS-15; CS-16; CS-17; CS-18; CS-19; CS-20; CS-21; CS-22; CS-23; CS-24	10	I-46a; I-57; I-58; I-74; I-01; I-04b; I-05a; I-06b; I-09; I-11; I-12; I-40a; I-45; I-62; I-22; I-37; I-55; I-69; I-42a; I-43; I-73a; I-35; I-19; I-61; I-08	25

Training	P-91b You can facilitate entrepreneurial activity by training and coaching people (innovation training, personal trainings, management trainings, external help).	CS-14; CS-15; CS-16; CS-18; CS-19; CS-24	6	I-41a; I-57; I-58; I-59a; I-10; I-62; I-22; I-34a; I-18; I-61; I-72	11
Leadership	P-93c Good leadership practice based on a focus of the employees as human beings is important for entrepreneurial activity.	CS-15; CS-16; CS-17; CS-19; CS-21	5	I-46a; I-02a; I-03; I-07; I-09; I-40a; I-45; I-22; I-38; I-43	10

Barriers in small companies:

SMALL COMPANIES					
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Frustration	P-94a Demotivation and frustration hinders entrepreneurial activity.	CS-01	1	I-14	1
Risk aversion	P-96 Risk aversion due to family obligations hinders entrepreneurial activity.	CS-02; CS-05	2	I-27; I-30	2
Health reasons	P-97 Entrepreneurial activity can be hindered due to health reasons and burnout issues because of the extreme burden and due to the personal environment someone interacts with.	CS-02; CS-06	2	I-27; I-29	2
Competence	P-98a A lack of professional competence hinders entrepreneurial activity.	CS-02; CS-04; CS-06	3	I-27; I-33; I-29	3
Self-confidence	P-99a A lack of self-confidence hinders entrepreneurial activity.	CS-02	1	I-27	1

Communication	P-100a A lack of communication and the absence of a supporting network hinder entrepreneurial activity.	CS-02; CS-05	2	I-27; I-30	2
Difficult people	P-102a Difficult people who work against new paths in the organisation hinder entrepreneurial activity.	CS-03	1	I-39	1
Regulations & control	P-104a The regulation of a budget hinders entrepreneurial activity.	CS-02	1	I-27	1
	P-105a Too many laws, standards and guidelines hinder entrepreneurial activity.	CS-03	1	I-39	1
	P-106a Control, dictation, regulation and statement of accounts hinder entrepreneurial activity.	CS-04; CS-05; CS-06	3	I-33; I-30; I-29	3
	P-108 Certification requirements hinder entrepreneurial activity.	CS-03	1	I-39	1
Overload	P-109a Work overload and pressure hinder entrepreneurial activity.	CS-04; CS-05; CS-06	3	I-33; I-30; I-29	3

Barriers in mid-sized companies:

MIDSIZED COMPANIES					
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Frustration	P-94b Demotivation and frustration hinders entrepreneurial activity.	CS-07; CS-13	2	I-66; I-23	2
Competence	P-98b A lack of professional competence hinders entrepreneurial activity.	CS-07; CS-12; CS-13	3	I-68; I-51; I-25	3
Self-confidence	P-99b A lack of self-confidence and existing fears hinder entrepreneurial activity.	CS-07; CS-09; CS-13	3	I-65; I-32a; I-26a	3
Communication	P-100b A lack of communication and the absence of a supporting network hinder entrepreneurial activity.	CS-07; CS-09; CS-10; CS-11; CS-12; CS-13	6	I-63; I-65; I-32a; I-36a; I-28a; I-48; I-24; I-25	8
Feedback	P-101a A lack of feedback - positive and negative - hinder entrepreneurial activity.	CS-09; CS-11; CS-13, CS-07	4	I-31; I-28a; I-24; I-68	4
Difficult people	P-102b Difficult people who work against new paths in the organisation hinder entrepreneurial activity.	CS-07; CS-08; CS-11	3	I-63; I-66; I-56a; I-28a	4
Regulations & control	P-105b Too many laws, standards and guidelines hinder entrepreneurial activity.	CS-07; CS-12; CS-09	3	I-63; I-47; I-49; I-50; I-53; I-32a	6
	P-106b Control, dictation, regulation and statement of accounts hinder entrepreneurial activity.	CS-09; CS-12	2	I-31; I-51	2

Attitude towards change	P-110a Entrenched habits and situations can hinder a positive attitude towards change and therefore entrepreneurial activity.	CS-07; CS-08; CS-10; CS-12; CS-13	5	I-63; I-64; I-67; I-56a; I-36a; I-51; I-52; I-23	8
Suggestion system	P-111a A strict company suggestion system hinders entrepreneurial activity.	CS-13	1	I-25	1

Barriers in large companies:

	LARGE COMPANIES				
	Statement / proposition	Evidence			
		Case Study	CS-#	Interview ID	I-#
Frustration	P-94c Demotivation and frustration hinders entrepreneurial activity.	CS-15; CS-16; CS-20; CS-24	4	I-71; I-08; I-12; I-42a; I-18; I-17	6
	P-95 A culture of penalties after you failed by trying something new hinders entrepreneurial activity.	CS-15; CS-20	2	I-46a; I-60; I-42a; I-72	4
Competence	P-98c A lack of professional competence and skilled people hinder entrepreneurial activity.	CS-15; CS-16	2	I-59a; I-01; I-05a; I-11; I-72	5
Self-confidence	P-99c A lack of self-confidence and existing fears hinder entrepreneurial activity.	CS-16; CS-19; CS-21; CS-22	4	I-02a; I-10; I-12; I-34a; I-37; I-43; I-54; I-73a; I-61	9
Communication	P-100c A lack of communication and the absence of a supporting network hinder entrepreneurial activity.	CS-16; CS-17; CS-19	3	I-08; I-40a; I-22; I-37; I-38; I-55	6

Feedback	P-101b	A lack of feedback - positive and negative - hinder entrepreneurial activity.	CS-15; CS-16; CS-19; CS-20; CS-24	5	I-71; I-06b; I-12; I-55; I-42a; I-18	6
Difficult people	P-102c	Difficult people who work against new paths in the organisation hinder entrepreneurial activity.	CS-14; CS-15; CS-19; CS-21	4	I-41a; I-58; I-37; I-54	4
HR	P-103	A lack of personal development, staff retention and a bad way of dealing with innovative people and decisions hinder entrepreneurial activity.	CS-14; CS-15; CS-16; CS-17	4	I-41a; I-74; I-11; I-40a	4
Regulations & control	P-104b	The regulation of a budget hinders entrepreneurial activity.	CS-15	1	I-46a; I-58; I-74	3
	P-105c	Too many laws, standards and guidelines hinder entrepreneurial activity.	CS-14; CS-15; CS-16; CS-17; CS-18; CS-24	6	I-41a; I-74; I-01; I-02a; I-05a; I-08; I-45; I-75; I-19	9
	P-106c	Control, dictation, regulation and statement of accounts hinder entrepreneurial activity.	CS-18	1	I-62; I-75	2
	P-107	Process regulations and descriptions hinder entrepreneurial activity.	CS-18; CS-23; CS-24	3	I-62; I-75; I-35; I-19	4
Overload	P-109b	Work overload and pressure hinder entrepreneurial activity.	CS-15; CS-16; CS-18; CS-20; CS-24	5	I-71; I-05b; I-08; I-09; I-62; I-42a; I-18	7
Attitude towards change	P-110b	Entrenched habits and situations as well as constantly changing leaders can hinder a positive attitude towards change and therefore entrepreneurial activity.	CS-15; CS-16; CS-20; CS-23; CS-24	5	I-58; I-71; I-03; I-04a; I-04b; I-05a; I-06a; I-10; I-42a; I-35; I-20	10
Suggestion system	P-111b	A strict company suggestion system hinders entrepreneurial activity.	CS-16; CS-24	2	I-06b; I-10; I-18	3

Structure & hierarchies	P-112 Leadership and hierarchical issues as well as problems within the organisational structure hinder entrepreneurial activity.	CS-15; CS-16; CS-17; CS-18; CS-19; CS-20; CS-21; CS-22; CS-23; CS-24	10	I-57; I-74; I-01; I-04a; I-04b; I-08; I-09; I-10; I-12; I-13; I-40a; I-75; I-34a; I-37; I-38; I-69; I-42a; I-43; I-54; I-73a; I-35; I-19; I-21; I-61; I-72; I-02a; I-03	26
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