The use of corporate entrepreneurship by Gefeba Elektro GmbH

The case study of a German medium-sized company in the highly competitive process automation sector

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Abstract

Corporate entrepreneurship has gained renewed interest in research since global markets are evolving and industries become more and more competitive. Information is transferred across the globe rapidly so that products and processes can be copied quickly. In order to be competitive, companies need to enhance creativity, their technological knowledge and market know-how. This high competitiveness leads to a dilemma where innovation is a key to survive whilst the size and administration may signify barriers to replicate entrepreneurial behavior through the entire business.

Considering the relevance of corporate entrepreneurship in the rapidly changing market of the 21st century, our purpose was to develop a deeper understanding of how corporate entrepreneurship can be used by companies. We then looked deeper into the subject of organizational transformation and decided to do a case study. The aim of the research was to make a theoretical contribution by examining the subject in the context of a medium-sized enterprise in a specific environment where corporate entrepreneurship is vital. Therefore, we chose a medium-sized German company that operates in the increasingly complex and competitive process automation industry. The Gefeba Elektro GmbH was found to be an interesting case for a case study for several reasons. The company was situated in a highly competitive market, in the heart of the industrial ‘Rurhgebiet’, with numerous competitors. However, and despite the lack of resources faced by this SME, Gefeba is an important actor in the automation industry.

Although researchers have examined various factors that promote corporate entrepreneurship, the literature has focused on defining factors in isolation without linking them to architectural factors, especially when it comes to SMEs. These factors are defined in our study as leadership, culture, structure and strategy. Acting within the extremes of small businesses and large corporations, we focus our study on a single medium-sized company that enables us to reach different levels of the organization and grasp a holistic understanding of this specific organization in relation to its use of CE. In accordance to this, the main research question is: How does Gefeba Elektro GmbH use corporate entrepreneurship in the automation sector industry?

The study was conducted using a qualitative research method. One of the major findings is that the Gefeba Elektro GmbH is using a balance between the organizational antecedents of common values and flexibility to build a mechanism that aligns the organizational architecture towards the development of corporate entrepreneurship. Another aspect is the fact that every architectural factor is used for the development of CE, even if some architectural factors such as leadership and culture seem to have more importance in this development. Thereby, the findings about organizational antecedents and architectural factors are relevant for the managerial implications in others SMEs facing the same context as Gefeba Elektro GmbH, which are willing to implement corporate entrepreneurship without knowing exactly how to do it. Indeed, the lack of resources of an SME could however allow developing organizational transformation through a sensitive equilibrium between the common values and beliefs for the control and the flexibility for the innovation. Moreover, another point highlighted in our findings is the crucial role of the individual in the implementation and development of corporate entrepreneurship.
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Definitions of terms

The following terms are defined in this section, as they will be used in our thesis:

**Corporate entrepreneurship (CE):** “the process whereby an individual or a group of individuals, in association with an existing organization, create a new organization, or instigate renewal or innovation within that organization” (Sharma & Chrisman, 1999, p. 18).

**Architectural factors:** These factors are defined in this thesis as leadership, culture, structure and strategy. They were chosen by the authors according to several articles and are explained in the literature review. There is no universally accepted definition of an organizational architecture or architectural factors. For instance, the term management could more generally be used to describe how to manage the workforce towards CE. However, we finally stayed with the term leadership since it also implies giving direction from the management regarding organizational transformation efforts.

**Organizational Antecedents:** The organizational antecedents are sign of certain attitudes, behaviors and mechanism inside the organization that are already there and lead to the development of the organization in a direction (Urbano & Turro, 2013, p. 391; Kuratko et al., 2004, p. 20).

**Organizational Antecedents for CE:** The organizational antecedents for CE are described in the literature review of this thesis and are indicating the development of corporate entrepreneurship.

**Holistic understanding:** In this thesis, the term holistic understanding is limited to the company level. In reference to this, organizational transformation requires the alignment of architectural factors such as leadership, culture, structure and strategy. Architectural factors are fundamentals in every organization (it is the architecture) and their inclusion in the development of CE leads to this holistic understanding of the company and its relation to CE.

**Innovation:** “a new idea that may be a recombination of old ideas, a scheme that challenges the present order, a formula, or a unique approach which is perceived as new by the individuals involved” (Van de Ven & Engleman, 2004, p. 48)

**Highly competitive market:** A market “characterized by rapid technological change and the increased importance of timing in innovation” (Martin-Rojas et al., 2013, p. 417), with numerous competitors and aggressive price cuts, which leads to a “constant disequilibrium and change (Johnson et al., 2011, p. 60). In this thesis, the process automation industry is the market we are focusing on. Various industries are highly competitive. However our selection criteria lead us to a company in automation sector.

**Process automation industry:** This niche market is proposing processes and procedures in order to improve the quality and reduce the costs. The main companies in this niche market have diversified activities and are not only present in the automotion process industry. The world leader is ABB, located in Switzerland with nearly 150 000 employees and 41, 848 billion Euros revenues in 2013. The main challengers are Siemens and Schneider Electrics, both located in Germany, with 362 000 employees for Siemens and 153 000 employees for Schneider Electric. Their revenues for 2013 are 75,
882 billion Euros and 23,551 billion Euros respectively. The growth perspective of this industry is positive with almost 7% for 2014 (Process IT, 2013, p. 6) and a market evaluated around $200 billion in 2015.

**Gefeba Elektro GmbH**: Founded in 1969 with headquarters in Gladbeck, North Rhine Westphalia, the Gefeba Elektro GmbH is a German medium-sized company operating as a systems provider for ready-to-use automation technology. The company employs approximately 150 employees in 2014. As a limited liability company (German: GmbH), financial statements are confidentially treated. However, it is important to underline that the Gefeba Elektro GmbH is a challenger of larger companies such as Siemens or Schneider Electric. One reason the company has been chosen for this study is its ability to create competitive advantage over large competitors such as Siemens or Schneider Electric through entrepreneurial behavior as further explained by client project managers in section 5.3.2.

**SME**: The term SME means Small and Medium Enterprise and the classification in this category derives from the criteria of the European Commission. The criteria are the numbers of employees, and the annual turnover or the annual balance sheet total (European Commission, 2005, p. 14). Those criteria are resumed in the following table:

<table>
<thead>
<tr>
<th>Enterprise category</th>
<th>Headcount: Annual Work Unit (AWU)</th>
<th>Annual turnover</th>
<th>Annual balance sheet total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium-sized</td>
<td>&lt;250</td>
<td>≤ €50 million</td>
<td>≤ €43 million</td>
</tr>
<tr>
<td>Small</td>
<td>&lt;50</td>
<td>≤ €10 million</td>
<td>≤ €10 million</td>
</tr>
<tr>
<td>Micro</td>
<td>&lt;10</td>
<td>≤ €2 million</td>
<td>≤ €2 million</td>
</tr>
</tbody>
</table>

Table 1: Classification of the SMEs (European Commission, 2005, p. 15)

The SMEs are important in the economic network of Europe because they “are a major source of entrepreneurial skills, innovation and employment” (European Commission, 2005, p. 5). In terms of companies, SMEs represent 99% of all enterprises and possesses a considerable weight in terms of employment and economic profit (European Commission, 2005, p. 5). Even though we do not have exact financial figures, the Gefeba Elektro GmbH can be classified as medium-sized as verified with the company.
1. Introduction
This section introduces the reader to three main aspects within this thesis. First, it is a first glance at the concept of corporate entrepreneurship. Second, we will look deeper into the concept of organizational transformation. Third, we will explain the problem background, which describes the importance of CE within a shifting business environment and specifically the automation industry in which the company Gefeba Elektro GmbH, subject to this thesis, is operating. Based on these three aspects, the research gap is presented and the research question and purpose are outlined.

A first glance at corporate entrepreneurship
To understand the main topic of this thesis, a first glance at corporate entrepreneurship needs to be provided. At the beginning of our topic, was the term entrepreneur. The entrepreneur, such as Richard Branson (Virgin Group) or Michael Dell (Dell Inc.) is understood as a particular personality who success to profit from opportunities despite the risks, by innovating with either new resources or by exploiting current resources (Burns, 2005, p. 6; Hyvönen & Tuominen, 2006, p. 644). This personality was soon perceived as so particular that it became a ‘figure’, with the attributes of a successful leader, an innovative person, and a businessman (Burns, 2005, p. 6). Deriving from the term entrepreneur is the term entrepreneurship, which defined the mind-set of an entrepreneur. However, considering the importance of the figure of the entrepreneur, and the advantages attributed to this personality, the literature of entrepreneurship has been focusing on either the individual entrepreneur as a businessman or entrepreneurship as the source of economic improvement and innovation (Stevenson et al., 1990, p. 19). The evolution of the market leads to consider the qualities of the entrepreneur as essential for the organization. Indeed, the context in nowadays fast-moving and globalized business environment is that companies of all sizes need to ensure profitability and growth by adapting quickly to new business challenges (Ahmad et al., 2010, p. 178). In parallel, « innovation has been recognized as one of the most important drivers of competition and economic growth in recent years » (Uzkurt et al., 2012, p. 1250015-2). Thereby, the concept of entrepreneurship leading to innovation seems to be the principal agent of change in order to obtain this innovation and then an economic growth (Hyvönen & Tuominen, 2006, p. 644). However, the figure of an entrepreneur as an individual is different from the willingness to implement the mind-set of entrepreneurship in a company. Thereby, the concept of corporate entrepreneurship progressively emerged and evolved over the last twenty-five years (Kuratko et al., 2004, p. 9), becoming an increasingly important concept within entrepreneurship studies (Dess et al., 2003, p. 351). The definition of corporate entrepreneurship does not present a consensus among the researchers and this variety will be addressed in section 3.1.2 of the theoretical framework. However, the definition used by Sharma & Chrisman (1999, p.18) aimed at categorizing different definitions within the literature and accordingly defined corporate entrepreneurship as:

“The process whereby an individual or a group of individuals, in association with an existing organization, create a new organization, or instigate renewal or innovation within that organization.”

On the one hand, we chose this definition since it is developed based on a thorough review of different definitions within the literature. On the other hand, the term process suits the organizational transformation as the type of corporate entrepreneurship we
Organizational transformation requires the alignment of the architecture of the organization in a way that fosters employees to act entrepreneurially (Burns, 2005, p.12), which can be seen as a process of constant renewal. Furthermore, several authors underlined the role of the individual within this process (Corbett et al., 2013, p. 816; Hayton & Kelley, 2006, p. 407). Apart from that, the process of constant renewal and innovation created by individuals as part of the definition can be seen as a remedy to the ever-changing environment surrounding the organization.

**Our case study: the use of organizational transformation**

The beginning of entrepreneurship research changed from the recognition that competitive advantage was not sustainable over time without the recognized need for consistent renewal and innovation (Corbett et al., 2013, p. 812). In reference to this, scholars began to argue how entrepreneurial processes might be applicable to established organizations to achieve and maintain competitive superiority (Covin & Slevin, 2002). The need for entrepreneurial processes derives from the bureaucracy and lack of flexibility faced by large organisations (Burns, 2005, p. 11), whilst on the contrary SMEs are facing a lack of resources within increasingly competitive markets (Castrogiovanni et al., 2011, p. 37). Thereby, corporate entrepreneurship aims to allow those organizations to overcome the difficulties while the business environment is becoming more and more complex (Kuratko & Morris, 2003, p. 22). This subject seems particularly interesting to us and we concentrated on finding a case in order to analyze corporate entrepreneurship in a company as several articles exemplified (Kuratko et al., 2001; Finkle, 2012). For our case study, we had several criteria. First, we choose to concentrate on a particular variation of corporate entrepreneurship called entrepreneurial or organizational transformation. This type of corporate entrepreneurship deals with the knowledge and routines created by the architecture of the organization, which is increasingly important to respond to nowadays rapidly changing environments in an entrepreneurial way (Burns, 2005, p. 62). Considering the variety of antecedents of CE developed by researchers, we see the organizational architecture as a tool to develop a holistic understanding of the organization in relation to corporate entrepreneurship. However, the organizational architecture includes factors such as leadership, culture, structure and strategy that are broad and therefore need to be put in the context of corporate entrepreneurship. Acting within the extremes of small businesses and large corporations, we focus our study on a single medium-sized company that enables us to reach different levels of the organization and grasp a holistic understanding of this specific organization in relation to its use of CE. To focus on a company categorized as a SME is also of interest due to their growth and innovation potential that will be decisive for the future prosperity of the EU as expressed by the European Commission (2005, p. 8). According to Burns (2005, p. 70) environments where entrepreneurship plays role are competitive, complex, uncertain, technology intensive, emphasizing innovation, constantly changing and with low concentration of firms. Various industries operate within these kinds of environments. Having set up criteria such as the company is medium-sized, operating in a competitive market, accessible on different hierarchical levels and showing entrepreneurial behavior, we were introduced to a company in the automation industry in Germany that showed entrepreneurial behavior being specifically successful in winning projects over large competitors (personal communication 2014).

The automation sector is concerned with the controlled system and processes that exist in organizations. The companies operating in the process automation industry provide
processes and procedures that will be accurate for this specific niche in order to reduce costs, save energy and improve the quality. The industrial automation industry world market is forecasted to reach more than $200 billion by 2015 (Butcher, 2012), while the market in Europe is about $10 billion, with a growth rate of 6.9% (Process IT, 2013, p. 6). Process IT Europe (2013, pp. 6-7) states that the globalization process intensifies the competition and brings new challenges to the industrial process automation industry and its suppliers. The demands on productivity, quality and new product development and enhancement increase, since emerging countries are expanding, creating new competitive conditions. Companies in the European industrial process automation industry constantly need to reinvent themselves, creating knowledge, expertise, innovation and technology. The product life cycle is between one and two years, which implies continuous innovation (Interviews, 2014). The key for competitive advantage is innovation linked with cost effectiveness. The world leader in the process automation industry is ABB (Switzerland). The main challengers are Siemens and Schneider Electric, both located in Germany. In addition to these large corporations, there are many small and medium sized companies operating within the industry, mostly in niche markets.

In this particular context, where resources are needed, SMEs need to change traditional business models and exploit opportunities and innovative potential (Process IT, 2013, p. 8). In consequence, corporate entrepreneurship is specifically vital in the automation sector, and particularly for SMEs since it faces the key challenges of today’s highly competitive market. The company subject to this thesis is the Gefeba Elektro GmbH, which is a German medium-sized company that is located in one the largest industrial and urban areas in Europe with headquarters in Gladbeck, North Rhine Westphalia. As a systems provider for ready-to-use automation technology, Gefeba has 40 years of experience and long-term partnerships with major multinational corporations such as ThyssenKrupp or Siemens (www.gefeba.de).

The use of CE

Some authors have underlined a specific list of organizational antecedents in order to diagnose corporate entrepreneurship. Those organizational antecedents are the obvious signs of the existence of corporate entrepreneurship in a company. To complete this list of organizational antecedents, we added the antecedents of other authors. Moreover, we found interesting not only to know which organizational antecedents are used in the firm but also to consider the organization as a sum of the architectural factors and the fact that the process of organizational transformation implies every architectural factor in it. Thereby, we associated the organizational antecedents with the corresponding architectural factors and we analyzed the implication of each architectural factor in the organizational transformation of our case study.

Knowledge gap

In order to develop corporate entrepreneurship, various researchers have acknowledged the importance of organizational antecedents to promote and support this process (e.g. Burgelman, 1983; Covin and Slevin, 1991; Zahra, 1991; Brazeal, 1993; Kuratko et al., 1993, 2005; Hornsby et al., 1999; Antoncic & Hisrich, 2001; Hornsby et al., 2002, 2009; Ireland et al., 2006). In accordance to this, we will use the benefits of the research on organizational antecedents in order to determine which organizational antecedents are used in this case study of the Gefeba Elektro GmbH. Each context a company is operating in requires to take “the right set of organizational antecedents” to recognize
and exploit entrepreneurial opportunities (Ireland et al., 2009, p. 33). However, the literature has developed a variety of antecedent of corporate entrepreneurship. Aiming to develop the before mentioned right set of organizational antecedents, we argue that the alignment of the organizational architecture in the organizational transformation process helps to gain a holistic understanding of the organization in relation to corporate entrepreneurship. In this sense, this approach enables us to explore the role of architectural factors when looking at organizational antecedents to develop CE. Few researchers have used the term architectural factors (Burns, 2005; Morris et al., 2009) when describing the process of CE and it has rather been associated with studies in large organization (Burns, 2005, p. 12). However, each organization is built through architectural factors, which are internal factors. We decided to classify each organizational antecedent with the architectural factor corresponding in order to have a better understanding on how this organizational transformation was influencing every part and every level of the organization. The company subject to this thesis developed the ability to overcome the presumably competitive weaknesses in size, resources and less economy of scale when winning projects over large corporations through entrepreneurial behavior as documented by client project managers. The architectural factors provide a framework that enables us to reveal the configuration of organizational antecedents that help SMEs to develop corporate entrepreneurship successfully. Apart from that, choosing a medium-sized company in a competitive market contributes to the research stream suggested by Corbett et al. (2013) to further explore “which kinds of firms adopt corporate entrepreneurship initiatives” (2013, p. 816). Therefore, we chose to understand how a medium-sized German company that operates in the increasingly complex and competitive process automation sector in Germany is using corporate entrepreneurship.

**Research Question:** How does Gefeba Elektro GmbH use corporate entrepreneurship in the process automation sector in Germany?

**Purposes**

- Firstly, the purpose of this thesis is to reveal the organizational antecedents used by the Gefeba Elektro GmbH in order to develop CE
- Secondly, we aim to determine the role of the architectural factors in the development of CE at Gefeba Elektro GmbH
- Thirdly, investigating the particular case of an SME aims to determine which specificities of organizational antecedents or architectural factors are linked to SMEs

**Delimitations**

Considering the complexity of our subject, we have to take delimitations into account. The first delimitation is that we are limiting our viewpoint of corporate entrepreneurship to a certain type of corporate entrepreneurship, namely organizational transformation. In fact, there are many definitions about the concept of corporate entrepreneurship. We only took the definition of authors into account who are considered as references in the field of corporate entrepreneurship and who considered several aspects of corporate entrepreneurship. The terms used for mapping architectural factors are based on the terms used by some of the authors. However, the number of factors and their names vary between the different papers. Therefore, we needed to choose the ones that cover the main aspects addressed by researchers concerning the organizational architecture.
Looking between the extremes of small businesses and large corporations, our study is focused on a medium-sized company. The size allows us to get a thorough understanding of the organizational architecture with direct access to different hierarchical levels. The choice of a single company also derives from focusing efforts towards the holistic understanding of this specific company in relation to organizational transformation.

**Disposition**

The following outline provides an overview of the chapters that we will explore in our thesis:

- **2. Methodology**: The methodology chapter will explain our pre-understanding of the subject, together with our ontological and epistemological assumptions.

- **3. Theoretical Framework**: This chapter will go deeper in the understanding of corporate entrepreneurship, the organizational antecedents and the architectural factors.

- **4. Data Collection Method**: We explain in this chapter how we conducted our interviews, which whom, and how we will analyze them.

- **5. Empirical Study**: This chapter allows us to present our results in line with a company description and according to the interviews that we have conducted.

- **6. Analysis**: In this chapter we analyze our results in order to indicate our findings about corporate entrepreneurship and architectural factors.

- **7. Conclusion**: This final part concludes our thesis by answering our research question and proposing managerial implications as well as advices for future research and the limitations of our thesis.

This introduction part allowed us to present the main aspects of our subject and the context in which we view corporate entrepreneurship. After having explained the research gap, the research questions and purpose, we will now describe the methodology used within this thesis.
2. Methodology
Having introduced the subject and problem background of this thesis as well as the research gap, research questions and purpose, this chapter will outline the methodology. We will first present how we chose the subject and then present our pre-conceptions. Subsequently, our ontological and epistemological view will be outlined. Afterwards, our research approach and research strategy will be explained.

2.1 Choice of Subject and Perspective
We strived to find a subject that reflected both our interest and that broadens our knowledge in understanding the corporate business environment. The concept of corporate entrepreneurship was appropriate since we were both interested in deepening our understanding of how entrepreneurship and organizational development issues are connected. However, the choice of the subject in itself was more difficult because this field is wide and we were interested in several aspects of it. We choose to investigate corporate entrepreneurship from the perspective of organizational transformation that aims to align architectural factors to entrepreneurial efforts in a highly competitive market. We found the subject relevant for our knowledge and we decided to have this holistic understanding of a specific company to reveal new insights regarding the use of corporate entrepreneurship in SMEs. Moreover, we found medium-sized enterprises to be specifically interesting due to their size and position within the extremes of managing small and large companies. We found a company in Germany, willing to participate to this case study, which lead to an intensive examination of their case (Bryman & Bell, 2011, p. 62). Looking at corporate entrepreneurship within the context of organizational transformation, an investigation of organizational antecedents linked to architectural factors is complex and sophisticated. However, this motivates us to further explore the subject.

2.2 Pre-understanding of the subject
The pre-understanding of the researchers within qualitative research enhances the credibility of the thesis through the carefulness criteria. Pre-understanding is understood knowledge, insights and experience that accompany the researcher entering the process of research. (Stenbacka, 2001, p. 553) The pre-understanding “also implies a certain attitude and a commitment on the part of researchers” (Gummesson, 2000, p. 60). The personal values of the researchers could also influence the research (Bryman & Bell, 2011, p. 29). That is why the pre-understanding section is essential because it allows understanding which bias could influence the researchers while doing their research.

2.2.1 Pre-understanding in common
Having acquired work experience in SMEs and in larger companies, we both agreed on the fact that organizations face problems regarding resources, size, bureaucracy etc. Our experiences in SMEs, we acknowledged the necessity of these organizations to operate in an entrepreneurial way to compensate the lack of resources in comparison to larger organizations. Moreover, our work experience in larger companies sensibilized us to the problem of operating effectively within organizational boundaries of size and bureaucracy. We were aware of the fact that the complexity of the market leads companies to increase innovation while being cost-effective. Both our experiences lead us to consider how to apply entrepreneurship inside an organization considering that as future managers we will be in charge of the development of such processes. As management students, we have no technical background. However, we have studied
companies operating in various competitive industries such as pharmaceutical, automotive, energy, automation, construction. Therefore, our company selection was not based on technical expertise, but rather on the criteria we set enabling us to use our business and management knowledge.

2.3 Ontological and Epistemological Assumptions

2.3.1 Ontological Assumptions

Whilst ontology is “concerned with nature of reality” (Saunders et al., 2009, p. 110), we had to choose between objectivism and constructionism. The main point of ontology refers to the nature of the social phenomenon that we are studying. As explained clearly in Bryman & Bell (2011): “The central point of orientation here is the question of whether social entities can and should be considered objective entities that have a reality external to social actors, or whether they can and should be considered social constructions built up from the perceptions and actions of social actors” (Bryman & Bell, 2011, p. 20). The objectivism sustains that “social entities exist in reality external to social actors” (Saunders et al., 2009, p. 110), while the constructivism view “is that social phenomena are created from the perceptions and consequent actions of social actors” (Saunders et al., 2009, p. 111).

In our thesis, we are studying several concepts. First, by architectural factors, we mean leadership, structure, culture and strategy. Those factors are built up from the perceptions and the actions of all employees of the company. The ideas behind leadership, culture, strategy and structure are different according to the culture of the country, to the business culture of the firm, and to each employee. The concept of leadership serves as an example to show that those factors are socially constructed. To exemplify our idea, we use the definition of organizational leadership constructed by Hofstede. According to Hofstede’s view, the degree of acceptance of leadership style, in Germany, France or in Sweden is not the same and does not correspond to the same qualities or to the same demand of the employees in those two countries (Hofstede, 2014). The difference for the concepts of culture, strategy and structure are following this analysis. Leadership, culture, strategy and structure are factors that are interpreted by the company’s employees. Every employee may associate a different meaning with these architectural factors and look at them from a different angle. It corresponds to the view of constructionism because “this position challenges the suggestion that categories such as organization and culture are pre-given and therefore confront social actors as external realities that they have no role in fashioning” (Bryman & Bell, 2011, p. 21). Corporate entrepreneurship reflects the spirit of the entrepreneur that can exist in a company. As later on outlined in the literature review, this spirit can “disappear” from a company and be renewed if needed by following a certain idea of corporate entrepreneurship. This does not imply the use of a concrete model, since corporate entrepreneurship is individually shaped within each organization, which means that it is dependent of social actors. Hence, corporate entrepreneurship has different types, which are relevant for different kinds of situations. The numerous types of corporate entrepreneurship and the variable definitions that we found are coherent with the fact that social actors construct corporate entrepreneurship. Following this reflection, we found that constructionism, which “assets that social phenomena and their meanings are continually being accomplished by social actors” (Bryman & Bell, 2011, p. 22) would be coherent with our study. On the contrary, objectivism holds that “social phenomena and their meanings have an existence that is independent of social actors”
(Bryman & Bell, 2011, p. 21). Considering this statement, objectivism did not seem to be accurate to our study.

### 2.3.2 Epistemological assumptions

We had to decide what “constitutes acceptable knowledge” (Saunders et al., 2009, p. 112) in our field of study, which is called epistemology. The issue of epistemology is “the question of whether or not the social world can and should be studied according to the same principles, procedures, and ethos as the natural sciences” (Bryman & Bell, 2011, p. 15). There are different positions in epistemology according to Bryman & Bell (2011, p. 15): positivism, interpretivism, and realism. Positivism “advocates the application of the methods of the natural sciences to the study of social reality and beyond” (Bryman & Bell, 2011, p. 15). The realism relates also to the scientific approach and shares two features with positivism: “a belief that the natural and the social sciences can and should apply the same kinds of approach to the collection of data and to explanation, and a commitment to the view that there is an external reality to which scientists direct their attention” (Bryman & Bell, 2011, p. 17). Finally, interpretivism “respects the differences between people and the objects of the natural sciences and therefore requires the social scientist to grasp the subjective meaning of social action” (Bryman & Bell, 2011, p. 17).

To decide which position was associated with our study, we analyze the subject of our thesis. We study organizational antecedents and architectural factors of a medium-sized process automation company in Germany. Considering this variety of antecedents and the broad concepts of the organizational architecture, these factors are socially constructed and cannot be measured, as could the natural sciences. The employees and the company we are studying perceive these factors in different ways. The scientific approach of positivism and realism does not seem accurate for our study. Corporate entrepreneurship is a vast concept that varies depending on the interpretation of the researchers, the will of the companies and the interpretation of the employees. Specifically, the antecedents of corporate entrepreneurship are resulting from the feelings of the employees and are, in this way measurable, but not as natural sciences expect. Therefore, it seems relevant to consider our subject as incoherent with positivism, because positivism considers as credible data “only phenomena that you can observe” (Saunders et al., 2009, p. 113) and also that the research is undertaken in “a value-free way” (Saunders et al., 2009, p. 114) which means that “there is little that can be done to alter the substance of the data collected” (Saunders et al., 2009, p. 114). Concerning the approach of realism, it does not share the view that we have on our subject of study for the same reasons, because the approach of natural science is not accurate to our study. Finally, the last position of epistemology, which is interpretivism, seems to fit our subject for several reasons. First, it includes a difference between the social actors and the object of the natural sciences. In our study, we are considering corporate entrepreneurship as resulting from social actors and different from the objects of the natural sciences. Apart from that, interpretivism suggest to social scientists “to grasp the subjective meaning of social action” (Bryman & Bell, 2011, p. 17). In our study, we are analyzing how the factors are interpreted by the employees and used in order to create and support corporate entrepreneurship. In other words, we are investigating the subjective meaning of social action. Therefore, it seems coherent with the subject of our study to consider **interpretivism** as our position for epistemology.
2.4 Choice of Scientific Approaches

Regarding the role of theory within this thesis, we had to choose between an inductive, a deductive approach or the abduction approach. Concerning the deductive approach, “the accent is placed on the testing of theories” (Bryman & Bell, 2011, p. 27). However, in our study we do not want to test theories, but to understand a problem. Then, the second approach is an inductive reasoning, which aims to “generate a theory” (Bryman & Bell, 2011, p. 27). None of the previous reasoning seemed adapted to our view of the subject. However, there exists a last approach, which is abduction. Indeed, our choice on the research approach would be to combine the deductive and inductive reasoning, which appears to be possible through the research strategy named abduction. This research strategy combines the previous strategies in two different ways (Bryman & Bell, 2011, p. 14). First, it is the possibility to observe another time the data, based on the theories generated by the previous observation. The second possibility allows investigating the theoretical framework beforehand to apply the inductive approach (Bryman & Bell, 2011, p. 14). Finally, we chose the abduction as our research approach for our topic.

Regarding the research strategy, we had the choice between a qualitative or a quantitative research approach. The quantitative research “can be construed as a research strategy that emphasizes quantification in the collection and analysis of data” (Bryman & Bell, 2011, p. 26). In our study, it does not fit the fact that we do not want to measure but to develop a deeper understanding of the use of corporate entrepreneurship by Gefeba Elektro GmbH considering architectural factors in order to acquire a holistic understanding of the company in relation to corporate entrepreneurship. Qualitative research “emphasizes words rather than quantification” (Bryman & Bell, 2011, p. 27) and our study fits interpretivism (Bryman & Bell, 2011, p. 386), which fits our epistemological assumptions. In reference to this, qualitative research corresponds to the way we are investigating our subject. In order to sum up our view on scientific research methods, we present the research method that we chose for this thesis:

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<th>Our Choices</th>
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<tr>
<td>Research Strategy</td>
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<tr>
<td>Principal orientation to the role of theory in relation to research</td>
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<td>Epistemological orientation</td>
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<td>Ontological orientation</td>
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Table 2: Overview of the research methods (Bryman & Bell, 2011, p. 27)

2.5 Subjectivity and Background of the Researchers

For this study, we used a qualitative research method, which could increase the bias of our subjectivity as researchers. The researcher is described as close from the participants in a qualitative research method so that “he or she can genuinely understand the world through their eyes” (Bryman & Bell, 2011, p. 410). However, we are also aware about the limitations that could appear by this subjectivity. Indeed, we tried to limit the influence of our personal values on the study to the minimum, knowing that it could however have an influence. In order to do so for example, we were careful to ask
the same questions between the respondents and the interviews or to provide the same explanations about one concept.

2.6 Literature selection

In order to carefully select the literature for our thesis, we used several steps. First, in order to find sources, we used keywords as it was indicated in our research methodology manual (Bryman & Bell, 2011, p. 108). During the research for sources, we began by searching for peer-reviewed articles on the website of the library of the university. This website was our main source of research because we had the possibility to have access to peer-reviewed articles, which means credibility for our thesis. However, we also used several books, that we found on the website of the library about corporate entrepreneurship and the subjects related to our thesis. Moreover, in this literature selection, we were aware that we would find primary sources and secondary sources when investigating our research topic. In order for our thesis to have the more suitable information as possible, we decided to avoid, as much as possible, the use of secondary sources.

The methodology part allowed us to show our ontological and epistemological assumptions, as well as our choice of scientific approach. The explanation of the research strategy is essential because it exposes the way we understand the knowledge that we will use in our thesis. We added our pre-understanding of the subject in order to increase the credibility of our findings. In the following sections, we will present our theoretical framework.
3. Theoretical framework

This chapter reviews existing theory on corporate entrepreneurship, architectural factors and the organizational antecedents of corporate entrepreneurship. In order to understand the nature of corporate entrepreneurship and the way entrepreneurial activities are created and developed throughout the entire organization, we need to have a look at the emergence of the topic with the term entrepreneur and entrepreneurship. Then the term corporate entrepreneurship will be explained and linked with the context of our case study. Subsequently the architectural factors will be described and explained. Finally, the measure of the architectural factors will be outlined, following the findings of the literature review and anticipating the analysis.

3.1 Corporate entrepreneurship (CE)

Referring to the purpose, we aim to understand how entrepreneurial activity can be realized at all levels of the organization. This view requires a look at the individual entrepreneur in the first place, who serves as a basis for replicating entrepreneurial activities throughout the entire organization (Burns, 2005, p. 11).

3.1.1 The entrepreneur and the entrepreneurship

The notion of the entrepreneur

Before entrepreneurship, there is the person who is capable of entrepreneurship: the entrepreneur. The term entrepreneur comes from the French verb “entreprendre” which means, “to begin something, to undertake” (Oxford English Dictionary, 2014). It was used during the Middle Age to describe a working person. With the evolution of the world, several attributes were attached to the word entrepreneur. One of the first was the attitude of risk-taking (Gündogdu, 2012, p. 298), which is still the case today (Urbano & Turro, 2013, p. 384; Burgess, 2013, p. 194; Kuratko & Goldsby, 2004, p. 15). The entrepreneur in the usual language is the one capable to see opportunities where others see only risks, and to act despite this uncertainty. In practice, “entrepreneurs compete not only to identify promising opportunities, but also for the resources necessary to exploit those opportunities” (Ferreira, 2010, p. 402). Moreover, the entrepreneur is also associated with the term creator, as the source of new ideas and innovation (Kuratko & Goldsby, 2004, p. 13). For example, in the usual language, the term entrepreneur is associated with the person who created its own company (Larousse, 2014). In this mission, the role of the personality of the entrepreneur seems crucial. Indeed, “If a person wishes to understand the entrepreneurial process, that person has to understand the role of the individual who stimulates the process” (Ferreira, 2010, p. 387). The role of the entrepreneur is also taken seriously as far as it seems crucial for the evolution of the market and then the economy. The known economist Schumpeter was the first who in 1934 “considers entrepreneurship as the process by which the economy as a whole goes forward” (Stevenson & Jarillo, 1990, p. 18). After Schumpeter’s work, the word entrepreneur was associated with innovation and linked with an economic profit (Stevenson & Jarillo, 1990, p. 19; Srivastava & Agrawal, 2010, p.163).

How are entrepreneurs?

The qualities practiced by an entrepreneur are difficult to obtain and to apply in a successful way. That is why, the entrepreneur was soon seen as a different person, able to success where others cannot, and entrepreneurship was presented as a mind-set (Gündogdu, 2012, p. 298). In fact, “Entrepreneurs are both born and made” (Burns,
2005, p. 19), which means that some characteristics of an entrepreneur are inborn but also that those characteristics can be learned or at least developed, which is the mission of the HRM practices (Schmelter et al., 2010). In order to obtain entrepreneurs, the role of the personality but also the leadership and the culture of the company are essential (Ferreira, 2010, p. 402; Schmelter et al., 2010, p. 716; Turro et al., 2013, p. 3).

**Entrepreneurship**

Having focused on the entrepreneur as an actor, the term entrepreneurship needs to be explained in order to comprehend the transformation from the individual to the corporate view on entrepreneurship. The term **entrepreneurship** is the ‘spirit of the act’, which results from an entrepreneur (Srivastava & Agrawal, 2010, p. 163). According to Stevenson & Jarillo (1990), entrepreneurship could be defined as “a process by which individuals - either on their own or inside organizations - pursue opportunities without regard to the resources they currently control” (Stevenson et al., 1989, cited in Stevenson & Jarillo, 1990, p. 23). The term opportunity means here “a future situation which is deemed desirable and feasible” (Stevenson & Jarillo, 1990, p. 23). Another definition, with less weight to the ‘lack of control to the resources’ coming from the entrepreneur and broader, was used in the article of Kuratko et al. (2001): “Entrepreneurship includes acts of creation, renewal, or innovation that occur within or outside an organization” (Kuratko et al., 2001, p. 60). To pursue the opportunities mentioned previously, the personal characteristics needed from an entrepreneur are significant. However, the environment (internal and external) is also an essential influence in order to obtain entrepreneurship (Urbano & Turro, 2013), as we will see later on. Another characteristic of entrepreneurship is that it is a permanent process and effort because it will not last without encouraging and nurturing it (Kuratko et al., 2004, p. 18) Moreover, it is important to point out that the term entrepreneurship “occurs in different degrees and frequencies within companies” (Morris et al., 2009, p. 431).

**The influence of the environment**

As said previously, the environment influences the emergence and the development of entrepreneurship and then of corporate entrepreneurship. The acceleration of the globalization of the market and its high competitiveness in the 21th century (Kuratko et al, 2014, p. 37) leads Kuratko & Morris to describe the current environment as being defined with three powerful forces: change, complexity and chaos (2003, p. 22). The term change reflects the permanent appearance of new challenges coming from the external environment of the companies (2003, p. 22). The term complexity is linked with change and means the “net effect” that derives from the changes, which means that “there is simply much more to manage than in the past” (Kuratko & Morris, 2003, p. 22). Finally, the last force described is chaos, which reflects the “confusion” of the current business landscape (Kuratko & Morris, 2003, p. 22). Those three terms define the current market as being particularly aggressive and complex. In reference to this, it is vital to find new approaches to tackle these environmental pressures through corporate entrepreneurship. The challenges of the change, the complexity and the chaos of the current business world could be seen as a chance for the company because “unexpected changes create opportunities for the firm to improve its performance through creativity and innovation and to generate more value for its stakeholders as a results of so doing” (Kuratko et al., 2004, p. 14). It is also stated in the article of Uzkurt et al. that “technological and market/demand turbulence” lead to a positive impact on the innovativeness of SMEs (2012, p. 1250015-16). Thereby, a complex and hostile environment can lead to the need and the willingness to reach innovation in an
organization. For this development, the internal factors, also called organizational antecedents, are crucial according to several authors (Urbano & Turro, 2013, p. 391; Kuratko et al., 2004, p. 20).

3.1.2 Defining corporate entrepreneurship (CE)

Aiming to reach entrepreneurial activity on all business levels throughout the organization, we need to extend the view on the entrepreneur and entrepreneurship to the term corporate entrepreneurship. The term Corporate Entrepreneurship (CE) results from the idea to implement entrepreneurship within the organization, as said by McFadzean et al.: “corporate entrepreneurship is held to promote entrepreneurial behaviors within an organization” (2005, p. 351). In the article of Antoncic et al. (2004, p. 176) corporate entrepreneurship is approached similarly: “corporate entrepreneurship can be defined as entrepreneurial activities within an existing organization”. That is why the term corporate entrepreneurship is deeply linked to the concept of entrepreneurship. Moreover, it is important to distinguish the entrepreneurial phenomenon in established firms, such as in corporate entrepreneurship, in opposition to the entrepreneurial phenomenon within start-ups companies (Schmelter et al., 2010, p. 718). Although the global meaning of corporate entrepreneurship is clear, scholars have struggled to agree on a common definition due to the complexity of the field. One definition of corporate entrepreneurship, which gathers the several ideas said previously could be “the process whereby an individual or a group of individuals, in association with an existing organization, create a new organization, or instigate renewal or innovation within that organization” (Sharma & Chrisman, 1999, p. 18). In this case study, the individual or group of individuals developing the process of CE is considered as being the employees of Gefeba Elektro GmbH. Those employees, associated with the existing organization of the company instigate renewal and innovation within that organization. This definition is used for CE throughout this thesis due to its accuracy with the several attributes of CE found. Apart from that, the term process suits the organizational transformation as the type of corporate entrepreneurship we focus on. Organizational transformation requires the alignment of the architecture of the organization in a way that fosters employees to act entrepreneurially (Burns, 2005, p.12), which can be seen as a process of constant renewal. Indeed, corporate entrepreneurship is associated with several attributes. The first important attribute is the innovation as stated in another definition of CE for example, coming from the article of McFadzean et al. (2005), which underlines the link between corporate entrepreneurship and innovation: “corporate entrepreneurship can be defined as the effort of promoting innovation from an internal organizational perspective” (McFadzean et al., 2005, p. 352). The same observation is made for the definition of CE in the article of Antoncic et al. (2004, p. 176). Another important aspect regarding the development of CE is the role of the personality of the employee as an entrepreneur (Corbett et al., 2013, p. 816; Hayton & Kelley, 2006, p. 407). Indeed, it is important to highlight the fact that the individual plays a central role in the alignment of the organizational architecture towards CE. Furthermore, various articles highlight three major dimensions that are essential for the creation of CE, including the innovation and some aspect of the personality as seen previously. Indeed, according to Morris et al. (2009), corporate entrepreneurship “is ultimately concerned with fostering innovative, risk-taking and proactive behavior in established organizations” (Morris et al., 2009, p. 429). Those three dimensions are then: innovativeness, proactiveness and risk-taking (Ferreira, 2010, p. 388; Martin-Rojas et al., 2013, p. 418; Kuratko & Audretsch, 2013, p. 325). According to the article of Ferreira (2010), “Innovativeness refers to a firm’s efforts to find new opportunities
and novel solutions” (2010, p. 390), proactiveness “refers to a firm’s efforts to seize new opportunities” (2010, p. 390) and risk taking “refers to a firm’s willingness to seize a venture opportunity even though it does not know whether the venture will be successful” (2010, p. 390). Those three attributes are the main attributes attached to CE according to the literature and underlined the role of the personality of the employees and the goal of innovation in CE.

The consequences of CE
Implementing CE in a company is not a trivial choice. In fact, the consequences of CE are multiple. First, the impacts of CE could be divided between financial and non-financial outcomes. Among the financial outcomes, the financial performance and the growth of the company are shown (Covin & Miles, 1999, p. 47; Martin-Rojas et al., 2013, p. 421; Zahra, 1996, p. 1713). Furthermore, there are also positive non-financial outcomes such as the commitment of employees in their organization and the organizational citizenship behavior (Zehir et al., 2012, p. 927) but also obtaining a sustained competitive advantage (Ferreira, 2010, p. 389), which is the aimed of CE according to Kuratko et al. (2004, p. 18).

The variety of the definitions of corporate entrepreneurship
As we saw previously, there are several definitions of CE. The reason why there are so many type and definition of corporate entrepreneurship derives from the variety of contexts in which corporate entrepreneurship could be applied. This complexity is taken in account by the authors when they say for example that the nature of corporate entrepreneurship is “heterogeneous” (Phan et al., 2009, p. 197), or that corporate entrepreneurship can take various forms (Morris et al., 2009, p. 429). Moreover, corporate entrepreneurship is described as still evolving today: “the scope of CE is also becoming wider as organizations, not previously recognized as entrepreneurial, need to become so in order to survive and succeed in increasingly competitive and financially constrained environments” (Phan et al., 2009, p. 197). However, with the raise of studies about corporate entrepreneurship during the last decade, a more clear view on CE has emerged (Kuratko & Audretsch, 2013, p. 324).

The different names of corporate entrepreneurship
Therefore, the complexity of the field may explain the various understandings of corporate entrepreneurship. Consequently, there are different names related to different branch of corporate entrepreneurship or to corporate entrepreneurship itself. As examples of the different names for corporate entrepreneurship we found: corporate venturing (Parker, 2011, p. 19), Intrapreneurship (Pinchot, 1985, cited in Thornberry, 2001; Parker, 2011, p. 19; Zahra et al., 1999, cited in Castrogiovanni et al., 2001, p. 35), Intrapreneuring (Pinchot, 1985, cited in Özdemirci, 2011, p. 612), and Internal Corporate Entrepreneurship (Jones & Butler, 1992, p. 734). Those examples are not exhaustive but simply aimed to make understandable three things. First, the fact that CE encompasses numbers of shades, which are named differently according to the authors. Second, that the numbers of shades and the different names are also the results of a relative short life and that the concept still need to be studied in order to have a definition that is accepted through the researchers. Finally, this field is complex and there are still several knowledge gaps and points that need to be cleared.
The different types of corporate entrepreneurship

Due to its complexity, the definition of corporate entrepreneurship has been evolving. Indeed, in 1984, Vesper distinguishes three major definitions of corporate entrepreneurship. Those are: a new strategic direction, initiative from below and the autonomous business creation (Vesper, 1984). Later, Covin & Miles (1999) state that there are at least four forms of CE: sustained regeneration, organizational rejuvenation, strategic renewal, and domain redefinition (1999, p. 50). Despite the numerous names of CE resulting from the research conducted before the 2000s, this process of CE is now more clearly understood and is considered having two main branches: the creation of “new business through market developments by undertaking product, process, technological and administrative innovations” (Ferreira, 2010, p. 388) also named as business creation and venturing (Zahra, 1996, p. 1713) and the strategic renewal of activities “that enhance a firm’s ability to compete and take risks” (Ferreira, 2010, p. 388; Zahra, 1996, p. 1713). Those two main branches are summarized between corporate venturing and strategic entrepreneurship (Kuratko & Audretsch, 2013, p. 329). In those two main branches, different shades could be enhanced.

Indeed, in the articles of Birkinshaw (2003) and Thornberry (2001), there are four “meaningful levels of analysis” in CE: Corporate venturing, Intrapreneurship, Bring the market inside and Entrepreneurial Transformation. ‘Corporate venturing’ is concerned with the investment of larger firms in strategically important smaller firms by capitalizing on core competences and established processes (Thornberry, 2001, p. 527), which is not accurate with our case study of an SME. ‘Intrapreneurship’ is defined in the article of Thornberry as being the willingness that some particular managers adopt entrepreneurship as a way to act (2001, p. 528). This definition does not correspond to our case, since we decided to use architectural factors that aim to align the entire organization towards corporate entrepreneurship. This also refers to the holistic understanding of the company as explained earlier. The third shade of CE is ‘bring the market inside’ and focuses on the structural challenges to encourage entrepreneurial behavior. The focus lies on the utilization of market-based techniques such as spin-offs and venture capital operations. This definition also does not concern our case because we are studying the Gefeba Elektro GmbH in the context of organizational antecedents and its internal architectural factors. Finally, the ‘entrepreneurial transformation’ or ‘organizational transformation’ (Gartner, 2004, p. 206) is another variation of corporate entrepreneurship. It is based on the assumption that large firms should adapt to an ever-changing environment by aligning the architecture of the organization in a way that fosters employees to act entrepreneurially (Burns, 2005, p. 12). According to Gartner, “in organizational transformation, the challenge is to set a new direction to identify new resources and develop new means to acquire and allocate these.” (2004, p. 206) While all these types of CE are considered important, the current research will focus on the type of CE employed in the Gefeba Elektro GmbH, which refers to the branch of strategic entrepreneurship and could be called “entrepreneurial transformation” (Birkinshaw, 2003, p. 8; Thornberry, 2001, p. 527; Ferreira, 2010, p. 389) or “organizational transformation” (Gartner, 2004, p. 206). We choose to use the last term of organizational transformation, since we focus on a medium-sized company that enables us to reach different levels of the organization and grasp a holistic understanding of this specific organization in relation to its use of CE.
The difficulties to implement and to manage corporate entrepreneurship

The complexity of the concept of corporate entrepreneurship, and its necessity to be accepted and developed by all links in the chain (every employee) make it more sensible to the difficulties. Indeed, Detienne (2004) describes corporate entrepreneurship has involving change, which is “transformation through technology or product innovation” in the companies (Detienne, 2004, p. 74). Naturally, this change is implying difficulties for people when it must be implemented because change and transformation is always destabilizing and employees show resistance, even when it is for the better (Kelley, 2011, p. 73). However, the organizational transformation is rather an entrepreneurial philosophy than a radical change since it can be seen “as a way to permanently transform rather than to regularly implement some new change ideas” (Detienne, 2004, p. 75).

Apart from the resistance to change, another article from Van de Ven & Engleman (2004) insists on the four central problems when managing corporate entrepreneurship: “(1) a people problem of managing attention; (2) a process problem of pushing new ideas into good currency; (3) a structural problem of managing relationships; and (4) a leadership problem of managing the context for innovation” (Van de Ven & Engleman, 2004, pp. 48-49). The first would be “the human problem of managing attention” (2004, p. 50) because it will be difficult for employees to focus on new ideas and not as much on the routines that they were doing. The second is a process problem and is “managing ideas into good currency” (2004, p. 50), which means that the profitable entrepreneurial ideas will be chosen and implemented. The third problem is structural and is about “building an industry infrastructure for entrepreneurship” (2004, p. 51). It implies that the entire architecture of the organization must be constructed and must progress toward the same goal of entrepreneurship. This difficulty is also underlined in the article of Kelley (2011). Indeed, according to this author, “in many companies, corporate entrepreneurship takes a cyclical path of enthusiastic support and investment, followed by diminished interest and program cuts” (2011, p. 74). The solution is to put in place mechanisms in order to sustain corporate entrepreneurship and “support the initiative as the organization and its environment change” (Kelley, 2011, p. 74). Finally, the last difficulty underlined by Van de Ven & Engleman (2004) is the leadership problem and relates to the “divergent but legitimate views of pluralistic actors who are distributed, partisan, and embedded in the innovation process.” (Van de Ven & Engleman, 2004, p. 51).

According to other researchers, three different difficulties could be added to the implementation and the management of corporate entrepreneurship. The first addresses the handling of project mistakes by employees with a long-term orientation through successful HRM practices. Indeed, employees are often emotionally and personally implicated in the development of new ideas (Shepherd et al., 2013, p. 880). In the same time, the rate of failure of the new projects is particularly high (Shepherd et al., 2013, p. 880). It leads to the following paradox: “the pursuit of multiple new projects is often necessary for entrepreneurial outcomes, but the high failure rate of such projects has complex and enduring implications for the organization’s members” (Shepherd et al., 2013, p. 880). This observation enhances the role of leadership in nurturing CE. The second difficulty is to stay ethical (Kuratko & Goldsby, 2004, p. 13) or at least not to profit from the autonomy left by the organizational transformation, because it could bring the possibility of agency issues (Katsuhiko, 2012, p. 194; Jones & Butler, 1992, p. 736). Finally, the last difficulty is underlined by the findings in the article of Peltola
Those findings suggest “firms need clients and other external partners with equally ambitious business objectives in order to successfully implement their CE strategies” (Peltola, 2012, p. 43). Thereby, CE leads to innovate and to propose new products and processes, but if clients do not accept and participate to the transformation, it will slow down the process or even stop it.

After investigating the literature review on CE, we will now develop the organizational antecedents and their role in corporate entrepreneurship.

3.1.3 The antecedents of corporate entrepreneurship

This section aims to determine what could be the organizational antecedents that allow to measure corporate entrepreneurship. The goal is to apply those measures to our case study for the aim to diagnose the different attributes of the CE used in Gefeba Elektro GmbH. In fact, in order to measure corporate entrepreneurship, some parameters were identified from several authors as being antecedents of individual’s behaviors; a global instrument (the CEAI) was even found by researchers (Hornsby et al., 2002). We will first explain how this instrument emerged and how it is established.

A global instrument to measure the antecedents of CE

The aim of being able to measure CE was soon an objective for researchers of this field. One of the first articles documenting the specific organizational antecedents of individual’s entrepreneurial behavior is the one from Kuratko et al. (1990), by aiming to develop an Intrapreneurial Assessment Instrument (IAI). They identify five elements: use of rewards, management support, resources availability, organizational structure and risk-taking (1990, p. 52). The use of rewards, in order to be effective, “must consider goals, feedback, emphasis on individual responsibility, and rewards based on results” (Kuratko et al., 1990, p. 52). The management support describes the degree to which the management encourages and facilitates entrepreneurial behavior and how the subordinates perceive this (1990, p. 52). The resource availability, including the time, is the knowledge for employees that it is possible to obtain resources and their availability (1990, p. 52). The meaning of the fourth element is transparent. The last element is risk-taking and describes the willingness for employees and management to take a risk and to tolerate the failure (1990, p. 52). In the study of Kuratko et al. (1990), only management support, organizational structure and rewards were found as the most important. Then, Hornsby et al., in 1999, partially replicated and completed this study by comparing Canadian firms and US firms. The findings indicated that five antecedents were important determinants of manager’s entrepreneurial behaviors: top management support, work discretion/autonomy, rewards/reinforcement, time availability and organizational boundaries (1999, p. 16). Using the previous researches, Hornsby et al. (2002) decided to propose the Corporate Entrepreneurship Assessment Instrument (CEAI), which “was a survey instrument designed to measure each of the five aforementioned organizational antecedent to corporate entrepreneurship” (Goodeale et al., 2001, p.119). This instrument was found by analyzing the “key internal organizational factors that influence middle managers to initiate corporate entrepreneurship activities” (Hornsby et al., 2002, p. 253) and aimed at providing instruments for the top management. The CEAI was then refined and its reliability and validity were tested in the study of Hornsby et al. (2008). This instrument was then defined as being utilized “by researchers to assess organizational issues related to implementing a CE strategy” (Hornsby et al., 2013) and the purpose of the article of Hornsby et al. (2013) was to construct “a more psychometrically sound measure of
organizational preparedness for CE based on the established CEAI instrument” (2013, p. 938). The same antecedents were used for this article (Hornsby et al., 2013), top management support, work discretion, rewards/reinforcement, time availability and organizational boundaries, but only the first four survived the analysis (Hornsby et al., 2013, p. 951). However, in the article of Kuratko et al. (2014) named “diagnosing a firm’s internal environment for corporate entrepreneurship”, the five following attributes were used: top management support, work discretion/autonomy, rewards/reinforcement, time availability and organizational boundaries (2014, p. 39).

Nevertheless, the emergence of this CEAI as an instrument was targeting managers and in particular middle managers (Hornsby et al., 2013). Thereby, even if this instrument allows measuring the antecedents of CE for the managers, our aim is to understand which antecedents are used by the employees of Gefeba Elektro GmbH in general. Several authors, other than the previous who created the CEAI, described the organizational antecedents for the development of CE and we will now explain those organizational antecedents.

In order to describe the organizational antecedents, we chose to present them according to their link with the architectural factors. Indeed, if we had chosen to present a list of the organizational antecedents, it could have answered our first purpose. However, we also aimed to determine the importance of each architectural factor in the development of CE. In our study, we found interesting to complete the view on the measurement of CE by detailing according to each architectural factor-leadership, culture, structure and strategy—which traits could be indicative of the development of CE. Based on the literature reviewed, these factors provide a holistic understanding of the company through their alignment in relation to CE within the Gefeba Elektro GmbH. In addition, these factors allow a more fluent analysis of some of the data gathered. However, we are aware that the boundaries between the architectural factors are porous and that they are all interwoven. Before describing each organizational antecedent according to the architectural factor corresponding, we will first analyze the architectural factors and their role in the development of corporate entrepreneurship.

### 3.1.4 The architectural factors and their role in corporate entrepreneurship

An organization is built through architecture and the following section will describe the architectural factors that we found relevant to represent for the architecture of an organization. Moreover, we investigate this concept of architectural factors in order to allow a more coherent analyze with the documents gathered through our data collection in the company, and we will then explain the role of each architectural factors when supporting CE.

**Mapping the architectural factors supporting CE**

Comparing the different environmental factors supporting the organizational transformation process towards corporate entrepreneurship, one can see that they are to some extent interrelated. According to the literature, the factors leading to the transformation and change towards corporate entrepreneurship can be gathered between three and six factors. The factors together are building the architecture of the organization and leading it towards the goals decided by the strategy of the company. In the article of Dess et al. (1999), they divide the architecture between strategy, structure and processes (Dess et al., 1999, p. 85). It is the beginning of the research on the
architecture of the organization and new factors will appear later on. In itself, the term architecture is relatively new before the 2000s and is for example used by Burns (2005) when he argues that the transformation of the entire organization requires the development of an entrepreneurial architecture (Burns, 2005, p. 13). The same notion of architecture is found later in the article of Heavey & Simsek (2013): “the architectural factors- the structures, cultures, resources, and incentives- that shape entrepreneurial processes within organizations” (Heavey & Simsek, 2013, p. 837) and can also be associated with other terms such as: “pro-entrepreneurship organizational architecture” (Peltola, 2012, p. 46). In this sense, architecture describes the factors or mechanisms (Kelley, 2011, p. 74) that will create and nurture the organizational transformation of the organization. This view on corporate entrepreneurship through the architectural factors is important according to Burns (2005) because the development of an entrepreneurial architecture creates within the organization the knowledge and routines to respond to rapidly changing environments in an entrepreneurial way (Burns, 2005, p. 62). Still according to Burns (2005), this architecture or knowledge and routines, as previously mentioned, can be shaped through the following factors: leadership, culture and structure (Burns, 2005, p. 62). Moreover, the architecture can influence and can be influenced by the strategy approach of the organization. Similar to Burns (2005), Morris et al. (2009) identify a number of elements that are necessary to enhance entrepreneurial activity within the work environment. Those elements are strategy, structure, culture, resource controls and human resource management practices (Morris et al., 2009, pp. 430-432).

To sum up, the notion of the architectural factors serve as a starting point to have a better understanding of the mechanisms that are present in the entire organization in order to implement and develop CE. The aim of defining the notion of the architectural factors is then to analyze the behaviors of the employees of the company and the internal documents through the lenses of those architectural factors regarding the process of corporate entrepreneurship. According to the literature review, we found several factors with or without name constants. Indeed, leadership is an essential part of the architectural factors and numerous articles are documenting it (Schmelter et al., 2010; Kuratko & Morris, 2003; Castrogiovanni et al., 2011; Montoro-Sanchez & Soriano, 2011). Furthermore, the culture is also an essential architectural factor when considering CE (Turro et al., 2013). The third architectural factor is then the structure and contains several concepts such as the resource controls of Morris et al. (2009, p. 430) but also the decision-making system that can be aggregated to this concept. Finally, the strategy can be considered the last architectural factor. The strategy is viewed by several authors as essential and as part of the implementation of CE (Ireland et al., 2009, p. 19; Stopford & Baden-Fuller, 1994, p. 528). It is also clear that an organizational transformation is not sustainable without a strategy because it allows concentrating the efforts towards a goal. Moreover, this strategy is already considered as an architectural factor by Morris et al. (2009, p. 430). Therefore, it seems coherent to add strategy as an architectural factor. We then decide to hold the four following factors for the analysis of the organization: leadership, culture, structure, and strategy. In reference to this, the other factor of resource control as previously mentioned found in the article of Morris et al. (2009) will be included in the architectural factor of the structure because the resource controls were associated with the structure in other articles (Burns, 2005, p. 62). Together, these four factors are building the architecture of the organization.
Having mapped architectural factors, we will see their role in the context of enhancing corporate entrepreneurship. Therefore, the next section zooms into the leadership, culture, structure and strategy in the context of corporate entrepreneurship.

### The role of leadership in corporate entrepreneurship

Concerning the implementation of corporate entrepreneurship in a company, managers have an important and complex role to play, considering the role as “the set of behaviors that others expect of individuals in a certain context” (Floyd & Lane, 2000, p. 157). The scope of those behaviors is significant because “managerial behavior affects the degree of success achieved from these efforts” (Kuratko et al., 2004, p. 8). Indeed, concerning the aim of the HRM practices and leadership, according to the article of Hornsby & Kuratko (1999, p. 35) “entrepreneurial leadership is a revitalization of innovation, creativity, and managerial development” within organizations, which is the core of corporate entrepreneurship. Two important aspects seem significant in the role of the HRM practices and leadership in corporate entrepreneurship, first the importance of the team and second of the individual as a manager at a particular level inside the organization. First, concerning the importance of the team in the development of CE, the article of Heavey & Simsek underlines the “role of top management teams in their firm’s pursuit of CE” (2013, p. 837). Moreover, the article of Stopford & Baden-Fuller cited “team orientation” as one of the essential dimension of CE (1994, p. 523). Another article corroborates this argument by highlighting the importance of the collaborative work environment for “a successful corporate entrepreneurship practice” (Srivastava & Agrawal, 2010, p. 168). Apart from the ‘team role’ of the management, there is also a role played by the individual itself as a manager. According to the literature, there are several types of managers considering their level inside this organization. In the article of Kuratko et al., the authors distinguish three types of managers: the top-level, the
middle-level and the operational-level (2004, p. 10). Beside, the same distinction is made in the article of Belousova & Gailly (2013, p. 366), in Kuratko & Audretsch (2013, p. 326) and earlier in a comprehensive way in the article of Floyd & Lane (2000, p. 158). Their actions are essential and diverse for each level, and among the articles about this subject, those of Kuratko et al. (2004) and Kuratko & Audretsch (2013) are being very specific about those actions. Indeed, for the top-management level, the definition of Kuratko et al. (2004) is: the “top-level managers must effectively direct the firm’s resource allocation processes and ratify efforts being taken to facilitate individual’s efforts to act creatively in the pursuit of product, process and administrative innovations” (2004, p. 10). Their role is then not only related to the management of the people under them but also to the need to have a vision of the future actions essential for the strategy of the firm and to guide the employees. It is corroborated by the article of Martin-Rojas et al. (2013) when the context is a technological firm, like Gefeba Elektro GmbH: “In both strategic and funding support, Top Management Support is critical in helping the members of technological organizations to understand and apply the strategy chosen and to increase CE” (Martin-Rojas et al., 2013, p. 419). However, the complexity and the difficulties of the role of the top manager are highlighted in the article of Heavey & Simsek (2013): “Apart from the challenges of sensing opportunities for CE, top managers must overcome a myriad of internal and external impediments to seize these opportunities” (Heavey & Simsek, 2013, p. 840). Their role is definitely not circumscribed to the management but is also related to the other architectural factors and requests from the individual numerous skills, competencies and personal qualities.

Apart from that, the importance of the role of middles managers is underlined in several articles (Burgess, 2013, p. 193; Kuratko & Goldsby, 2004, p. 14). Indeed, “Middle level managers are challenged to understand information flows emanating from top and operating-level managers in ways that permit successful interpretation and integration of these managers’ intentions and concerns” (Kuratko et al., 2004, p. 10). To be clear, middle-managers have to be capable of technical competencies in order to interact effectively with the operational-level but they must also “understand the firm’s strategic intent and goals as well as the political context” (Kuratko & Audretsch, 2013, p. 327) in order to interact effectively with senior-level managers. Their role as a link between the different levels in the organization is underlined in the article of Burgess (2013): “Their key role is to respond to the strategic decisions of senior managers, converting these into operational actions” (Burgess, 2013, p. 193). Therefore, efficient middle managers are a key for the success of CE and the articles previously cited are highlighting their crucial role.

The last level of managers is named ‘operational-level’ by Kuratko et al. (2004, p. 10). The definition is as following: “Operating-level managers must respond to the challenges suggested by the information extended to them by managers within the context of their understanding of changes occurring in the demands of some of the firm’s external stakeholders, particularly customers” (Kuratko et al., 2004, p. 10). However, this definition does not express the complexity of the role of the operational-level managers, which could be resume in three roles according to Floyd & Lane: experimenting, conforming and responding (2000, p. 158). The experimenting role corresponds to the initiating of entrepreneurial projects. The conforming role means the adaptation of the operating policies and procedures to the strategic initiatives implemented by the top-management (Kuratko & Audretsch, 2013, p. 328). Finally, the responding role is the faculty to adapt to unpredictable changes.
By reviewing the different roles inside the organization and their importance, we can underline three essential points. First, the flow of information is a key success for CE when it is correctly managed and used. Indeed, according to Floyd & Lane (2000): “the strategic roles are linked across levels since they all involve the acquisition and exchange of information related to environmental change and the organization’s response to it” (Floyd & Lane, 2000, p. 158). Second, teamwork is also a very important key success underlined by several authors such as Burgess (2013): “CE, however, involves all managers and staff, with those at lower levels identifying opportunities for innovation, and then being able to implement these with the support of senior management. This requires senior management to have the vision, to implement change, and to motivate and support staff throughout the organization” (Burgess, 2013, p. 193). The success of CE depends on every employee, and they represent the key assets of the company for CE: “In summary, organizations are choosing to pursue entrepreneurial strategies. However, it is the entrepreneurial behavior of managers that needs to be focused upon” (Kuratko et al., 2004, p. 37). The last important point for the role of leadership in the aim of CE seems to be the network. Indeed, “top management’s information advantage is not so much rooted in size but rather the diversity and connectedness of management teams” (Heavey & Simsek, 2013, p. 852). The term network is broad and is considered as “the opportunity structures through which entrepreneurs obtain information, resources, and social support to identify and exploit opportunities” (Urbano & Turro, 2013, p. 383). The network could be considered as being internal, which means inside the organization, or the opposite: external.

To conclude about the role of the managers, this citation of the article of Dess et al. (2003, p. 358) resumes the importance of the previous points: “CE leadership depends not only on the skills and abilities of individuals but also on the quality of interactions within the management hierarchy”. In particular, we will argue that it depends on the extent of shared understanding and the level of interpersonal trust in the organization. When the role of the management is to participate to the implementation and the development of CE, the importance of each employee as an individual is underlined but the role of the management is also particularly important. The relation between both and with the external environment is successful through an effective communication, which allows improving the flow of communication and the networks. Another point is that leadership is an crucial architectural factor but does not function alone because for example ‘trust’ can also be build with the culture. Furthermore it is essential to add that the context of an SME such as Gefeba Elektro GmbH brings other points to the role of leadership in nurturing CE. First, in a firm with reduced management and bureaucracy, the role of the management is heightened. As highlighted in the article of Schmelter et al. (2010): “In SMEs, we assume a more direct link between management practices and the level of CE within the company” (Schmelter et al., 2010, p. 716). Second, an SME is facing a reduced access to resources. This aspect is particularly important when a SME is competing with larger companies. Therefore, the article of Schmelter et al. (2010) indicates: “for SMEs, resource constraints may mean that HRM activities are often less formal and may be limited in scope and sophistication” (Schmelter et al., 2010, p. 716).

The role of the culture in corporate entrepreneurship

Since every architectural factor is fostering the development of CE, the role of the culture is pointed out. Turro et al. (2013, p. 3) underlined the role of the culture in CE for the employees by saying that: “It is more likely that individuals will become
corporate entrepreneurs when they are involved in an entrepreneurial culture.” Moreover, in the article of Thornberry (2001, p. 526) it is clearly stated that when corporate entrepreneurship is chosen as a strategy to overcome the lack of innovation, companies want to “create and embrace it in their cultures.” Finally, Hornsby et al. (1999, p. 9) underlines the importance of “creating entrepreneurial cultures within corporations and institutions” because it permits to “enhance the innovative abilities of employees and, at the same time, increases organizational success through the creation of new corporate ventures” (Hornsby et al., 1999, p. 9). Therefore, the first role of the culture in CE is to create an entrepreneurial impulsion toward innovation in order that every employee is drag along in the implementation and the development of CE.

When it comes to understand and to measure a culture in an organization, it is important to refer first to the instrument and the cultural dimensions identified by Hofstede (1997, pp. 13-14). Geert Hofstede studied how values of people working in the subsidiaries of the company IBM are influenced by culture and how these values relate to behavior. In accordance to this, Hofstede developed four cultural dimensions: Power distance, collectivism vs. individualism, femininity vs. masculinity, and uncertainty avoidance. **Power distance** refers to emotional distance between subordinates and their supervisors or the extent to which subordinates expect and accept unequal distribution of power (Hofstede, 1997, p. 28). Low power distance cultures are more egalitarian with flat hierarchies as well as open and informal relationships. High power distance cultures are hierarchical and authoritarian with formal relationships and information flows. **Uncertainty avoidance** refers to the degree to which people feel threatened by uncertain situations (Hofstede, 1997, p. 13). Low uncertainty avoidance cultures imply less structure and more flexibility, rewarding initiative, risk-taking and teamwork. High uncertainty avoidance cultures prefer rules and procedures, attention to detail and loyalty. **Individualism vs. Collectivism** deals with the ties of the individual towards others. In individualistic societies people are expected to look after themselves with loose connections, while in collectivistic societies people are integrated into strong cohesive groups. (Hofstede, 1997, p. 51) **Masculinity vs. Femininity** questions whether social gender roles are distinct or overlap in societies (Hofstede, 1997, pp. 82-83). Countries with a high masculinity index tend to solve problems on an individual basis, where different arguments clash against each other. Countries with a low masculinity index tend to solve problems through compromise and negotiation.

The entrepreneurial culture emerges where there is constant opportunity-seeking, where there is the expectation to think creative and with new ideas, where risk-taking is encouraged, where failure is tolerated, where learning is promoted, where product, process and administrative innovations are valued and where change is viewed as opportunity. (Irleand et al., 2003, p. 970) The second role of the culture in CE could be described as the capacity for the organization and the employees to learn and to retain this learning. There are several reasons to give an importance to organizational learning. Indeed, as stated by Martin-Rojas et al.: “In the business context, Organizational Learning is a prerequisite for the development of entrepreneurial attitudes and skills throughout the firm” (Martin-Rojas et al., 2013, p. 420). This statement is corroborated by Hyvönen & Tuominen (2006) because they are highlighting that «organizational learning enhances creativity and the ability of identifying innovative opportunities» (Hyvönen & Tuominen, 2006, pp. 649-650). So, the first reason is that organizational learning allows employees to identify entrepreneurial opportunities and to exploit them. Second, both articles from Martin-Rojas et al. as well as Hyvönen & Tuominen (2006,
pp. 649-650) are underlining the positive effect of organizational learning on the success of CE of the firm, when “it has been developed in the organization, in successful and unsuccessful situations” (Martin-Rojas et al., 2013, p. 420). Furthermore, this role seems particularly important in the context of technological firms such as the Gefeba Elektro GmbH (Martin-Rojas et al., 2013, p. 418).

To conclude, it is also important to highlight that the architectural factors are interrelated and the role of the culture in CE is highly linked with other architectural factors. It is for example the observation of Ireland et al. (2009) “As top-level managers articulate and act upon an entrepreneurial strategic vision, it will likely affect the organization’s cultural attributes, encouraging the formation of cultural norms in favor of entrepreneurship” (Ireland et al., 2009, p. 31). In another article, to be the facilitator of organizational learning is considered as one of the role of the middle manager in order to enhance corporate entrepreneurship (Burgess, 2013, p. 195). Then, it is clear with those citations that leadership and culture are architectural factors deeply linked for the construction of CE, but they are also linked to the other architectural factors.

The role of the structure in corporate entrepreneurship

Indeed, leadership, and culture in isolation cannot foster organizational transformation. As mentioned earlier, architectural factors are interwoven, and the factor of structure is concerned for the implementation and the development of CE. Concerning the definition of the structure, the article of Jennings & Hindle (2004) used the following words: “Organizational structure refers to how the various parts of an organization are arranged to achieve consistency and coherence” (2004, p. 106). The article of Ireland et al. (2009) adds: “Fundamentally, structure is an organization’s arrangement of authority, communication and workflow relationships” (Ireland et al., 2009, p. 31). Similarly, Morris et al. (2009) states that structure is concerned with formal patterns, the grouping of jobs and people as well as the interconnectivity of functions and activities (Morris et al., 2009, p. 435). While the first definition refers to the mechanisms that are structuring the organization, the second definition underlines the role of the relationships between the different parts of an organization. Finally, the last definition highlights the importance of the administration, the relationships between the employees and their jobs, and the fluidity and flexibility inside the mechanisms of the organization. Those definitions are then referring to different characteristics of a structure according to the different authors, which underlines the complexity of defining the structure of the organization.

However, in order to define more precisely the characteristics of the structure, the work of Burns & Stalker (1994) is comprehensive and essential. Indeed, as cited by Jennings & Hindle (2004, p. 106): “Burns & Stalker discovered a relationship between the external environment and an organization’s internal management structure”. Burns & Stalker (1994, p. 120) describe two types of structure, one mechanistic and the other, organic. According to them a mechanistic management system is appropriate to stable condition (1994, p. 120), and they have several characteristics such as the differentiation of each tasks with precise methods for each, a hierarchic structure of control, authority and communication, with autonomy only for the top-management level in order to centralized the decision-making process, and a vertical communication with an insistence on the obedience to superiors (1994, p. 120). This mechanistic structure is, according to Dess et al. (1999), not appropriate for today’s world: “Traditional
organizational models, built around rigid hierarchies and clearly defined boundaries, are thought to be poorly suited for today’s entrepreneurial corporations. Such models with their inherent bureaucracies have been criticized for their tendency to limit flexibility and stifle communications” (Dess et al., 1999, p. 91).

The second structure found by Burns & Stalker (1994) is called organic structure and is “appropriate to changing conditions” (1994, p. 121). The characteristics of such structure were an adaptive internal organization, with a network structure of control, authority and communication, a decentralized decision-making process, a lateral communication with information rather than instructions, and an importance given to affiliations and expertise (Burns & Stalker, 1994, p. 121). Considering the context for the development of CE, the organic structure is definitely more appropriate than the mechanistic structure, according to the definition of Burns & Stalker (1994, pp. 120-121). The organic structure seems also the one used for the start-ups, at the beginning of an organization, and the evolution of the organization, with the growth and bureaucracy, tends more and more to lead toward the mechanistic structure. However, it is important to underline that Burns & Stalker (1994) consider that “The two form of system represent a polarity, not a dichotomy. Also the relation of one form to the other is elastic, so that a concern oscillating between relative stability and relative change may also oscillate between the two forms.” (1994, p. 122). The boundaries between the two types of structure are not strict and moreover, those boundaries are defined by the organizations themselves: “the most appropriate structure depends on the nature of the organization, the strategies it employs, the tasks it undertakes, the environment it operates in and the size (Burns, 2005, p. 140). However, the strategy and the structure have to match in order to obtain performance (Jennings & Hindle, 2004, p. 130).

**The role of the strategy in corporate entrepreneurship**

Apart from leadership, culture and structure, strategy is a crucial architectural factor to enhance CE at all business levels. According to a broad definition, the role of the strategy is « the long-term direction of an organization » (Johnson et al., 2011, p. 3).The strategic choices that a company has to make “involve the options for strategy in terms of both the directions in which strategy might move and the methods by which strategy might be pursued” (Johnson et al., 2011, p. 17). Another definition in the article of Jennings & Hindle, highlighting the role of the environment, is: “a strategy is a plan for interacting with the competitive environment to achieve organizational goals” (2004, p. 104). In the case of CE, the strategy “is a set of commitments and actions that is framed around entrepreneurial behavior and innovation in order to develop current and future competitive advantages that are intended to lead to competitive success” (Kuratko et al., 2004, p. 17). This definition seems particularly relevant for the context of the Gefeba Elektro GmbH because it is a highly competitive market, where innovation is the key and the company needs to foster innovation and entrepreneurship in order to have a competitive advantage and then to be able to compete in the automation industry. Concerning the CE’s strategy, it seems to be divided between two main branches: exploitation and exploration (Rhonda & Engleman, 2004, p. 53; Morris et al., 2009, p. 434). The exploitation consists to exploit “already established resources and capabilities” (Frederiksen & Davies, 2008, p. 488). While it is also possible to “explore new ways to develop competitiveness by venturing into new markets and aiming for the frontier of technology to search for, discover and test new opportunities” (Frederiksen & Davies, 2008, p. 488). Morris et al., referring to the particular context of CE, propose a more precise definition of exploration and exploration (2009). Indeed, exploration
refers to finding « resources devoted to search, discovery, experimentation and innovation » while « exploitation involves an emphasis on refinement, adaptation, selection, implementation, and efficiency » (Morris et al. 2009, p. 434). Those different behaviors when referring to an entrepreneurship linked with exploration or to an entrepreneurship linked with exploitation leads to search for a balance between them. In fact, exploration and exploitation are complementary behaviors (Morris et al., 2011, p. 434). However, a choice has, most of the time, to be made between the exploration and the exploitation of the new ideas, even if some companies succeed to do both exploration and exploitation, and are then called « ambidextrous » (Morris et al., 2009, p. 434). This success of balancing between exploration and exploitation is the result of the strategy. Indeed, this seeming dichotomy can be solved thanks to the strategy of the company because it is the strategy that gives a framework in order to balance between exploration and exploitation and each company form its own balance, according to the needs.

Furthermore, in either case exploration or exploitation, the role of the other architectural factors is highlighted. Indeed, the exploration or exploration strategy needs the other architectural factors in order to implement successfully CE. The necessity of the HRM practices and leadership factor for example is underlined in the article of Frederiksen & Davies (2008) because the exploitation branch of the strategy “entails administrative management of projects that is adaptive and responsive to the environment” (2008, p. 488) while the exploration branch “implies entrepreneurial management of projects that are pioneering and leading.” (Frederiksen & Davies, 2008, p. 488). The role of the strategy in the development of CE seems essential because “by pursuing entrepreneurial strategies, firms place themselves in positions to regularly and systematically recognize and exploit entrepreneurial opportunities” (Ireland et al., 2009, p. 19). The characteristics of such strategy are described in the article of Ireland et al.: “as a vision-directed, organization-wide reliance on entrepreneurial behavior that purposefully and continuously rejuvenates the organization and shapes the scope of its operations through the recognition and exploitation of entrepreneurial opportunity” (Ireland et al., 2009, p. 21). However, it is recalled that CE strategy implies some difficulties as highlighted by Hornsby et al., “the pursuit of corporate entrepreneurship as a strategy (…) creates a newer and potentially more complex set of challenges on both a practical and a theoretical level” (1999, p. 9). Practically, the consequences are that “organizations need guidelines to direct or redirect resources towards establishing effective entrepreneurial strategies” (Hornsby et al., 1999, p. 9), which implies once more the role of the other architectural factors by participating also to the implementation of CE.

To conclude, through this part we highlighted the role of each architectural factor in order to implement and develop CE and the fact that each one is interwoven. Three points seems important to underline as key points for every architectural factors. First, the role of the individual as a key asset for CE and that each initiative towards CE is essential. Without the willingness of employees to participate to the implementation and the development of CE, it does not seem possible or appropriate (Morris et al., 2009, p. 430). The second point is that each architectural factor is linked to the other, and that transforming one without transforming the others does not permit to obtain CE. Finally, the last point is about the sustainability of CE and the fact that, considering the permanently changing environment that organizations are facing, CE is a permanent process. Indeed, as described by Kuratko et al.: “From the perspective of long-term firm growth through CE, creative and innovative behavior must be displayed and
consistently reinforced” (2004, p. 8). Apart from that, we will consider the four architectural factors and attached to each of this architectural factor some organizational antecedents of CE. The aim is to allow a division of the attributes considering the literature previously investigated in order to match with our choice of describing corporate entrepreneurship from the perspective of the architectural factors but also to facilitate the analyze later on the data gathered with more fluency and fluidity. Thereby, we will introduce the different organizational antecedents according to the architectural factors. In order to be as clear as possible, we detailed our classification of the architectural factors and of their organizational antecedents in the appendix 2. However, we added the following figure in order to help to situate the organizational antecedents (OA) and the architectural factors.

Figure 2: The architectural factors and the organizational antecedents

Concerning the organizational antecedents for CE, in order to measure them, the same terms for the organizational antecedents are usually used. One of the reasons is that there are few authors that are considered as ‘guru’ in the field and who published several articles about how to measure the environmental factors of CE (Hornsby et al. 2002; Hornsby et al., 2008; Kuratko et al., 2014). However, others authors are added in order to complete the view on the architectural factors and their antecedents. We will now develop the organizational antecedents for CE according to each architectural factor.
Measuring the organizational antecedents for HRM practices and leadership

According to the antecedents of CE detailed in the article of Kuratko et al. (2014), three factors could be the characteristic of entrepreneurial leadership: top management support, work discretion/autonomy and rewards/reinforcement (2014, p. 39). Top management support is “the extent to which one perceives that top managers support, facilitate and promote entrepreneurial behavior” (Kuratko et al., 2014, p. 39). This includes supporting employees with innovative ideas and providing employees with the required resource to act entrepreneurial. The second factor is work discretion, which is the degree to which the organization provides autonomy by providing space for experimentation, the tolerance of failure and the delegation of authority and responsibilities to lower-level managers. At the same time, the company is required to provide a framework for implementing ideas through work discretion. The third factor is rewards and reinforcement, which implies that the company uses rewards systems encouraging entrepreneurial behavior. The perception of the employees regarding reward and resource availability determines their entrepreneurial and innovative behavior. These systems should encourage risk-taking and innovation. Concerning the role of the management, another article distinguishes organizational antecedents according to the level of the managers (Kuratko et al., 2004), but was not found relevant for our case study since we had not enough information about each level of management. The article of Burgess explains that: “teamwork, collaboration and communication are all traits that are demonstrated by successful leaders” (2013, p. 196). Those are the antecedents of CE for managers according to this author. Moreover “middle managers must also have the security of knowing that mistakes will be tolerated, and a less supportive approach may cause them to ‘play safe’ and reduce the risk of failure” (Burgess, 2013, p. 196). This last antecedent of CE is similar to the “rewards/reinforcement” suggested by Kuratko et al. (2014). In the article of Schmelter et al., some HRM practices are tested in order to know their importance in connection with the development of CE in a company. The results are that three practices were tested positively linked with CE: staff selection, staff development and training, and staff rewards (Schmelter et al., 2010, p. 733). For Morris et al. (2009), it is essential for the HRM to balance on one hand between performance incentives and professional security, and on the other hand between administrative skills and entrepreneurial skills (2009, p. 436).

Those managerial antecedents are the sign of CE and allow diagnosing it in a company. We will see later in the analysis which one of these antecedents are present in our case study of Gefeba Elektro GmbH. Interwoven with entrepreneurial leadership is the creation of an entrepreneurial culture, which will be the focus of the next section.

Measuring the organizational antecedents for culture

According to Morris et al. (2009), an entrepreneurial culture is a balance between individualistic and collectivistic orientation. Individualism refers to self-orientation pursuing individual goals that may or may not be consistent with those of one’s colleagues, when collectivism refers to subordinating one’s own personal interest and goals to the group ones (pp. 432-434). According to Burns (2005, pp. 122-123) an entrepreneurial culture has low power distance, meaning an egalitarian organization with flat hierarchies, open and informal relationships and information flows. In addition, an entrepreneurial culture has low uncertainty avoidance. In reference to this, flexibility is given, risk-taking is tolerated and initiative is rewarded. Apart from that, an
entrepreneurial culture involves a move from individualism to collectivism. In accordance to this, cooperation and the development of relationships and networks are valued and a strong cohesive group is formed that has a strong identity in relation to the out-group or competition. Finally, entrepreneurial cultures evolve where there is a balance between masculinity and femininity. There needs to be a combination of masculinity aspects of achievement and individual problem solving against out-groups and cooperation, networks and relationships within the in-group. One of the important aspects of an entrepreneurial culture, which was underlined by several authors (Martin-Rojas et al., 2013; Hyvönen & Tuominen, 2006), is the organizational learning. Thereby, in order to diagnose organizational learning, **Hyvönen & Tuominen** explain that “as a cultural dimension, learning orientation includes the fundamental values: a commitment to learn, open-mindedness and a shared vision of learning » (2006, p. 649-650). However, the article of **Schmelter et al.** underlines that SMEs are facing a lack of capacity for culture building and are then using « a more direct relationship between managers and employees » (2010, p. 719). This observation could affect our findings when searching for the culture building thereby it has to be taken in account in the empirical part by paying a particular attention to the sort of relationship between managers and employees.

*Measuring the entrepreneurial culture seems particularly complex as it refers also to other architectural factors, which highlight the fact that they are interwoven. Having focused on leadership and culture, the next section will zoom into structural elements related to the organizational transformation.*

**Measuring the organizational antecedents for structure**

Considering the five factors found by **Hornsby et al. (2008)** for the CEAI, time availability could be considered as being part of the entrepreneurial structure. Time availability refers to “a perception that the workload schedules ensure extra time for individuals and groups to pursue innovations” (Kuratko et al., 2014, p. 39). Moreover, to develop an effective entrepreneurial structure, **Hornsby et al. (2011, p. 119)** mentions the role of organizational boundaries, which are the development of mechanisms that explain organization goals and that are tracked and evaluated precisely. Flexible organizational boundaries can enhance entrepreneurial activity because the flow of information within the organization and with the external environment is facilitated. However, organizational boundaries are useful in directing the entrepreneurial and innovative efforts towards a productive use. The balance and coexistence of tight and lose control systems enables entrepreneurial activity to be replicated within the entire organization. For **Morris et al. (2009)**, structure is concerned with formal patterns, the grouping of jobs and people as well as the interconnectivity of functions and activities. In reference to this, structure is a balance between being autonomous or restrained. According to Morris et al. only this balance and co-existence of extremes provides a basis for enhancing the entrepreneurial potential of the company (2009, pp. 436-437). Concerning autonomous structures, they generally possess broader spans of control enabling flexibility and supporting entrepreneurial activity within the organization. However, unrestrained structure can lead to exploration of unrealistic concepts that cannot be put into praxis or that are not in alignment with the company’s strategy. In consequence, companies need to find a balance and enable coexistence of autonomy and control. This implies that autonomy is coupled with a clear vision, a well-communicated direction towards an implicit goal. Moreover, Morris et al. (2009, p. 436) argues that there also needs to be a balance
regarding incentives and the security of failure. Otherwise, the fear of failure holds back employees to pursue incentives towards entrepreneurial activity. In addition, a balance needs to be established between entrepreneurial skills related to opportunity recognition and evaluation, problem-solving and planning and administrative skills including aspects such as organizing, coordinating, staffing, controlling and motivating. Furthermore, the organic structure from Burns & Stalker (1994, p. 121) is concerned with limited hierarchies, flexibility and decentralization (Burns, 2005, p. 130). To develop an entrepreneurial structure, the collaboration between groups of specialist from different work areas needs to be established in order to perform complex tasks in fast-changing environments. Further attributes devoted to organic structures are: extensive personal interaction, informal communication channels and procedures, authority based on expertise rather than role and team work is likely to be the norm. (Burns, 2005, pp. 140-141). Moreover, there are structures in place that facilitate communication between different units and hierarchies.

Having focused on leadership, culture and structure, the next section will zoom into the characteristics in order to measure an entrepreneurial strategy.

**Measuring the organizational antecedents for strategy**

According to Morris et al., « as firms strive to be more entrepreneurial, a fundamental question concerns the relative emphasis on exploration versus exploitation » (2009, p. 434). The goal of this framework is certainly not of “trying to limit the amount of entrepreneurship in companies, as there is always room for more imagination, improvement, creativity, and initiative in any facet of company operations” (Morris et al, 2009, p. 434). But the issue is rather “of ensuring there is strategic direction to entrepreneurial behaviors-such as with the balanced portfolio (…) - and that exploration is balanced with exploitation, and ethical boundaries are imposed around how entrepreneurial initiatives are pursued” (Morris et al., 2009, p. 434). Then, according to Burns (2005) there are some important attributes of an entrepreneurial strategy developed in his “strategic planning process” (2005, p. 170). To resume this process, first there is the vision, then it leads to a strategic analysis, afterwards a strategy formulation and finally a strategy implementation are performed. Firstly, Burns underlines the fact that a vision must be realistic and credible as well as «developing creative tension by contrasting the vision to the reality of the current situation » (Burns, 2005, p. 170). Secondly, the strategic analysis refers to an analysis of the environment of the company. The goal of this part is to find a competitive advantage for the company. However, this competitive advantage will not be a sustainable competitive because it may be easy to copy, or may change over time. In order to obtain a sustainable competitive advantage, a good strategy is to rely on organizational transformation factors because “it increases complexity by encouraging the process to go on at many levels within the firm” (Burns, 2005, p. 171). The condition for the competitive advantage to be sustainable is that competitors cannot and will not “take the action required to close the gap” (Coyne, 1986, p. 58). In other words, “sustainable competitive advantage determines the ability of an organization to reconfigure and to constantly renew its supply of valuable and idiosyncratic resources and capabilities to foster innovation” (Camison & Villar-Lopez, 2014, p. 2892). Concerning the strategy formulation of Burns, there are three steps that are composing it: identify strategic options, evaluate options, and select strategy (2005, p. 170). While the last step of the strategic planning process is strategy implementation, which refers to: leading and
managing change, organization’s culture and structure and planning and allocating resources (Burns, 2005, p. 170).

The literature review allowed us to have a better understanding of our subject. We will now present our data collection method that we choose for our subject.
4. Data Collection Method

In the following section, the method used to collect our data for the thesis will be explained. After designing the sort of sampling method that we wanted to use for our thesis, we considered the ethical points essential to respect the respondents. Moreover, we explain in details our methodology that we choose to analyze our data.

4.1 Strategy of research

For this thesis, the authors considered several research strategies. As explained in Saunders et al., there are seven types of research strategies: experiment, survey, case study, action research, grounded theory, ethnography and archival research (2009, p. 108). Every type of research strategies was not adequate for our study because we had precise expectations concerning the way we wanted to conduct our analysis. In fact, we focused on one company in Germany to investigate the phenomenon of corporate entrepreneurship within an SME that allows us to reach different levels and thereby grasp a holistic understanding of this company in relation to CE. Therefore for example, the experiment does not seem to be accurate because it focuses on studying the “causal links” (Saunders et al., 2009, p. 142) and the authors want to understand the possible links between organizational antecedents and architectural factors and corporate entrepreneurship in the case of an SME that operates in a highly competitive industry. The survey strategy was not coherent either with our purpose because it does not allow to answer the question how, according to Saunders et al. (2009, p. 144), which was the center of our topic. Concerning the action research strategy, it was also not compatible with our study because it “combines both data gathering and facilitation of change” (Saunders et al. 2009, p. 148) by using several steps: diagnosing, planning, taking action and evaluating. This action research strategy is more likely compare as being “a consultant” (Saunders et al., 2009, p. 148), which was not the aim of the authors in this study. Another strategy was the grounded theory. According to Saunders et al., the grounded theory strategy implies to start the data collection “without the formation of an initial theoretical framework” (2009, p. 149). The aim of this strategy is to develop hypothesis by collecting the data and then test those hypothesis. The theories are then developing from those data’s observation (Saunders et al. 2009, p. 149). This strategy does not seem to be compatible with our study because the purpose of this study was to understand a phenomenon with an inductive approach and not to develop and test hypothesis. Then, another choice for the research strategy could have been ethnography. This technique comes from anthropology and is describe as time consuming and in the need of an extended amount of time (Saunders et al. 2009, p. 149), which was not available to us for this thesis. That is why, the ethnography was not chosen by the authors as a research strategy. Concerning the archival research strategy, it “makes use of administrative records and documents as the principal source of data”. Where as in our study, we decided to consider the interviews of the employees as our principal source of data, which was not coherent with the archival research strategy. The last research strategy is the case study strategy. This strategy enables “to gain a rich understanding of the context of the research and of the processes being enacted” (Saunders et al., 2009, p. 146). According to Saunders et al., a study of a single case “may be selected because it is typical or because it provides you with an opportunity to observe and analyze a phenomenon” (2009, p. 146) and this “case study strategy can be a very worthwhile way of exploring existing theory” (Saunders et al., 2009, 147). It fits to our will to study the case of Gefeba Elektro GmbH by allowing to answer the question how and to study a particular phenomenon (corporate entrepreneurship) in a
real context (a highly competitive market). Moreover, the case study implies a triangulation, which is the use of “different data collection techniques within one study” in order to corroborate the findings (Saunders et al. 2009, p. 146). That is why; we will use interviews as well as internal documents and brochures given by the company in order to fulfill this criterion of triangulation. To resume, the case study strategy was coherent with our vision of our subject and with the way we wanted to conduct our study.

4.2 A single case study

Yin (2003, p. 2) argues that the distinctive need for a case study arises out of the desire to understand complex social phenomena. The research design chosen within this thesis is a single case study, since it makes it possible to uncover the complexity and particular nature of our specific case, the Gefeba Elektro GmbH (Bryman & Bell, 2011, p.59). A case study is the preferred research strategy “when “how” and “why” questions are being posed, when the investigator has little control over events and when the focus is on contemporary phenomenon within some real-life context” (Yin, 2003, p.1). In reference to this, we consider our research question: “How does Gefeba use corporate entrepreneurship in the process automation sector in Germany?” to be an appropriate choice of conducting a case study. Moreover, the complexity and specificity of the case and its context allows us to investigate the phenomenon of a medium-sized company (Gefeba) that is able to win projects through corporate entrepreneurship, even though being in a presumably weaker situation regarding size, resources, and less economy of scale than its larger competitors (ABB, Schneider Electrics, Siemens). The company’s ability to win projects over larger competitors through entrepreneurial efforts is further described by project managers of one of their largest clients in section 5.3.2. The way the company manages this success is of major interest within its context. In accordance to this, this choice of research design is reflecting the complexity of the concept of corporate entrepreneurship and is therefore in line with our constructionist view on reality claiming that “social phenomena and their meanings are continually being accomplished by social actors” (Bryman & Bell, 2011, p. 22). The single case of Gefeba provides us with an understanding how a medium-sized company manages to gain competitive advantage within its competitive environment and what role architectural factors play in the assessment of the organization antecedents used by Gefeba. The advantage of this focused approach on a single case is the close collaboration between us and the company that enables participants to tell their stories and describe their views on reality to better understand the individuals’ actions (Baxter & Jack, 2008, p. 545).

Next we need to outline what kind of case study will be conducted. According to Yin (2003, p.3) there are 3 types of case studies: explanatory, descriptive or exploratory. Within the case of Gefeba, we aim to explain the presumed casual links and real-life interventions in order to find out how Gefeba as a medium-sized company uses corporate entrepreneurship in the process automation sector in Germany. These links and interventions are too complex for the survey or experimental strategies (Baxter & Jack, 2008, p. 547). Therefore, the case study type is chosen to be explanatory. In reference to this, Yin (2003, p. 6) argues that “how” and “why” questions are more explanatory, since they deal with operational links, which fits our research question.

4.3 Company selection

The company selection was made after having set up criteria fitting into the use of corporate entrepreneurship in highly competitive markets. Initially, our interest in
medium-sized companies acting within the extremes of managing small and large companies and the concept of corporate entrepreneurship, lead us to the following criteria: The company is medium-sized, operating in a competitive market, accessible on different hierarchical levels and showing entrepreneurial behavior. After having contacted companies in Sweden and Germany, we were introduced by a project manager of a German large engineering and steel company to a few companies that are suppliers or partners fitting the above-mentioned criteria. After having discussed several companies and their differences, we came to the assumption that one specific company is not only fitting the criteria but also showing deviant behavior that is entrepreneurial and being specifically successful in winning projects. Indeed, Gefeba Elektro GmbH is using the concept of organizational transformation, which is a shade of corporate entrepreneurship, without aiming at it as we saw in others cases (Finkle, 2012; Kuratko et al., 2001). We chose to focus on this company to get an in-depth understanding of how this medium-sized company acts, how they work and how they manage to overcome the presumably competitive weaknesses in size, resources and less economy of scale through corporate entrepreneurship. Furthermore, we found the context to be relevant because the automation sector industry is a niche market, where there is high competition and where innovation is the key. To resume, it is an appropriate context for the development of CE. Such a single case study of a company within a distinct contextual situation with access to different hierarchical levels enables us to investigate the use of corporate entrepreneurship in a medium-sized company. Moreover, it allows us to find out whether broad concepts of leadership, culture, structure, and strategy have specific elements that are distinct and salient for the investigation of corporate entrepreneurship within medium-sized companies in highly competitive markets. In reference to this, there are various case selection techniques outlined by Gerring & Seawright (2008, p. 296) that are typical, diverse, extreme, deviant, influential, most similar and most different. They further describe that the selection of the case needs to take into account the representativeness of the sample and the useful variation on the dimensions of theoretical interest. In this study, we are dealing with corporate entrepreneurship that needs to be understood in its real context – a highly competitive market. Other than a typical case, which is fully explained by an existing model, the present case needs to be investigated within its context (Gerring & Seawright, 2008, p. 299). The case of Gefeba “probes for new – but as yet unspecified – explanations” and aims to reveal casual processes that presents some causal factor that is applicable to other cases, which refers to the purpose of a deviant case (Gerring & Seawright, 2008, pp. 300-301).

4.4 Sampling design

In order to increase the credibility of our study, we choose carefully our sampling method. The article of Onwuegbuzie & Leech (2007, p. 239) “provides a framework for developing sampling designs in qualitative research.” Three sampling strategies are proposed: parallel sampling designs, nested sampling designs, and multilevel sampling designs (2007, p. 239). The parallel sampling designs represents “a body of sampling strategies that facilitate credible comparisons of two or more different subgroups (...) that are extracted from the same levels of study” (Onwuegbuzie& Leech, 2007, p. 239). The nested sampling design facilitates “credible comparison of two or more members on the same subgroup, wherein one or more members of the subgroup represent a subsample” (Onwuegbuzie& Leech, 2007, p. 239). Those two first sampling designs are not corresponding to our study because they are comparing individuals of the same subgroup or between different subgroups. Whereas the last sampling strategy is multi
level sampling designs and facilitates “credible comparisons of two or more subgroups that are extracted from different levels of study” (Onwuegbuzie & Leech, 2007, p. 240). This type of sampling designs corresponds to our study because it will allow us to compare the data between the employees, which are at different level in the hierarchy of Gefeba.

4.4.1 Sampling process

For our sampling, we considered the convenient sampling to best fit our lack of time and the need for the company to be as efficient as possible without losing time for the employees. That is why we had to interview employees who were available at the time of the interviews and who accepted to participate. We also asked to company to do as possible in order that we could have an interview of different hierarchical levels of the company in order to compare the answers between the hierarchical levels. We required this because we considered that the resources needed could be seen differently considering the place in the hierarchy. There are different hierarchical levels interviewed in this thesis, the first one is the top management, the second are the managers of the medium level, the third is the operational level. An agreement was found with the company to have interviews between 45 and 60 minutes in order to have enough time to obtain information about our subject. The interview were recorded and later transcribed.

4.4.2 Semi-structured interview

We considered the interview to be the best way to obtain valuable data for our study and answering our criteria of flexibility. Considering the lack of time that we were facing, we could not afford the choice of an ethnography research because it implies “an extended period of participant observation” (Bryman & Bell, 2011, p. 465). There are different types of interviewing in qualitative research. For example, focus groups and group interviewing are both interview with groups in order to allow “participant’s perspectives (...) to be revealed in ways that are different from individual interviews” (Bryman & Bell, 2011, p. 515). However, considering our research question, we wanted to focus on the personal point of view of some employees and not on a group reaction. Another factor to take into account was the lack of time that we were facing. Face to face interviews between an employee and the researchers are easier to plan and to execute, for us as well as for the company. Moreover, the other types of interviews, such as unstructured and semi-structured interviews were more linked with our goal to interview employees in face to face and to ask them their point of view about our research question. In the unstructured interview, the researcher asks only a few questions and “the interviewee is then allowed to respond freely” (Bryman & Bell, 2011, p. 467). However, this type of interview does not fit with our research question because we want to have answers about a certain subject (corporate entrepreneurship), which could bring some questions if the interviewee does not know exactly what we are looking for. In fact, we decided to guide the interview in order to obtain answers about our subjects without digression. That is why the process of a semi-structured interview seems to best fit our research. The semi-structured interview allows the interviewee to have flexibility and a “great deal of leeway in how to reply” (Bryman & Bell, 2011, p. 467). In the same time, “the researcher has a list of questions on fairly specific topics to be covered, often referred to as an interview guide” (Bryman & Bell, 2011, p. 467).

In order to be clear in our data collection method, the following table will resume our choices of sampling method and process:
4.4.3 Collection of documents

In order to fulfill the criterion of the case study strategy, we had to use several source of data for our study. Yin (2003, p. 85) identifies six sources of evidence that are most commonly used in case studies: documentation, archival records, interviews, direct observations, participant observation and physical artifacts. However, not all sources of evidence are relevant for each case study (Yin, 2003, p. 96). A limitation to our study may be the fact that we do not thoroughly use multiple sources of evidence, but rather focus on semi-structured interviews. The access to relevant documents and reports as well as personal communication was limited, but we try to include it in our study as much as possible. In accordance to this, participant observation requires a significant amount of time to get the participants in a natural state of behavior. In order to avoid reactive effects, we decided to exclude participant observation (Bryman & Bell, 2011, p. 496).

Explanation of documents: Since every document is written for a specific purpose and specific audience, we will describe which document is written from whom, for which audience and with which purpose. This way we aim increase correctness of being critical in interpreting the contents of such evidence. (Yin, 2003, p. 88)

**The Gefeba – Brochure:** The Gefeba-Brochure is a document issued by the company Gefeba Elektro GmbH to the most recent version in 2014. The document outlines a company description, the services it offers, its technical capabilities, sector references as well as quality information. The brochure is a document intending to provide external parties and stakeholders with information on the company and its profile.

**The Gefeba Quality Management Handbook:** The Gefeba Quality Management Handbook is an internal document that is property of Gefeba. The document is highly confidential and is issued by the top management of the company. It provides insights on the company, its strategy and goals, business ethics and values, quality assurance, human resource practices and outline of communication policies. The document is updated on a yearly basis and is directed towards-, and binding for all employees. The handbook intends to provide a common ground of reference regarding the aspects outlined above for all employees.

**The project examples:** The project examples are documents issued externally by magazines that are focused on the automation industry in Germany. The magazines inform the public about the industry and occasionally illustrate projects that have

<table>
<thead>
<tr>
<th>Data collection method</th>
<th>Choice for our thesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy of research</td>
<td>Case study</td>
</tr>
<tr>
<td>Sampling design</td>
<td>Multi-level sampling design</td>
</tr>
<tr>
<td>Sampling process</td>
<td>Convenient</td>
</tr>
<tr>
<td>Type of interview</td>
<td>Semi-structured interview</td>
</tr>
</tbody>
</table>

Table 3: Choices for our data collection method
significant value within the industry. Some projects Gefeba accomplished are being presented and provide an external view on the quality of the project execution.

**The Gefeba webpage (www.gefeba.de):** The company’s webpage is accessible in German and English. Similar to the Brochure is provides a general overview of the company and its profile, which is accessible to the public. Sections are including: Company profile, deliverables, references, quality issues and cooperation.

**Direct Observation:** Whilst visiting the company for conducting interviews, we had the possibility to get a tour around the company and make direct observations. The authors, as researchers, made those observations in order to obtain more information about the company. However, the additional information it provides for the case study topic is considered as limited by Yin (2003, p. 93).

### 4.5 The interview guide

The interview guide could be a “brief list of memory prompts of areas to be covered that is often employed in unstructured interviewing or (...) the somewhat more structured list of issues to be addressed or questions to be asked in semi-structured interviewing” (Bryman& Bell, 2011, p. 473). We considered our interview guide as being a guide in our interviews. We defined our set of questions by using our literature review and by looking at the thematic network analysis that we wanted to use. Our set of questions is in the Appendix 1 of this thesis.

### 4.6 Ethical considerations

As expressed in Bryman& Bell, there are four ethical principles that have to be respected: “harm to participants, lack of informed consent, invasion of privacy and deception” (Bryman& Bell, 2011, p. 128). First, the **harm to participants** could be understood as “physical harm; harm to participants’ development or self-esteem; stress; harm to career prospects or future employment; and inducing subjects to perform reprehensible acts” (Bryman& Bell, 2011, p. 128). We respected this ethical principle with the anonymity of the data collection and by being sure that every participant was freely willing to participate. Concerning the **lack of informed consent**, “the principle means that prospective research participants should be given as much information as necessary to make an informed decision about whether or not they wish to participate in a study” (Bryman& Bell, 2011, p. 133). We informed the employees of our goal with our study and how we would proceed. Any information they asked was answered. The third ethical principle is the **invasion of privacy** “relates to the issue of the degree to which invasions of privacy can be condoned” (Bryman& Bell, 2011, p. 136). The information asked were given with the consent of any participant and all of the participants were able to choose to not answer to the questions asked if they wanted to. Moreover, the purpose of our study was not touching the space of privacy of the participants. The last ethical principle is **deception**, which “occurs when researchers represent their research as something other than what it is” (Bryman& Bell, 2011, p. 136). In order to avoid deception, we provided information about our study before and after the interviews. We informed the respondents about the goal of our research and how we would proceed few weeks before the interviews. Then, the day of the interviews, we repeated the information that they had in order to be sure that that they were well informed and willing to participate. After the interviews, they also had the possibility to contact us if they wanted any information. Finally, they will have access to our thesis in the company.
4.7 Transcribing and analyzing interviews

Concerning the transcription of the interviews in order to analyze them, we first recorded the interviews because it allows a “more thorough examination of what people say” (Bryman & Bell, 2011, p. 481) without counting on our memory. Four interviews were in German and one conducted in English, because we proposed respondents to answer in their preferred language between English, French and German since we understand all of them. After transcribing the interviews, we used the transcripts to obtain results. We resumed the interviews that we conducted in the following table:

<table>
<thead>
<tr>
<th>Participants</th>
<th>Hierarchy level</th>
<th>Time</th>
<th>Language</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO</td>
<td>Top management</td>
<td>1hr 02 min</td>
<td>German</td>
<td>Gefeba</td>
</tr>
<tr>
<td>Technical leader</td>
<td>Middle management</td>
<td>37 min</td>
<td>German</td>
<td>Gefeba</td>
</tr>
<tr>
<td>Commercial director</td>
<td>Middle management</td>
<td>1hr 12min</td>
<td>German</td>
<td>Gefeba</td>
</tr>
<tr>
<td>Project Leader A</td>
<td>Lower management</td>
<td>45min</td>
<td>English</td>
<td>Gefeba</td>
</tr>
<tr>
<td>Project Leader B</td>
<td>Lower management</td>
<td>43 min</td>
<td>German</td>
<td>Gefeba</td>
</tr>
</tbody>
</table>

Table 4: Details about the interviews conducted.

Concerning the analysis, according to Saunders et al (2009, p. 492), there are several types of qualitative analysis processes. The first one presented is the summarizing type, which is a condensation of meanings and is highly formalized. This type does not match our research because we do not aim to a condensation of meanings but more an explanation of the meanings and a structure according to this explanation. The second type is the categorization or grouping of meanings. This type is also not consistent with our study because we do not want to group the meanings but more to explore each sub-group. Finally, the last type is structuring, or ordering, the meanings using narrative. This final type is less formalized and would allow us to structure our analysis without alter the meanings of the sub-groups of the architectural factors. Moreover, for the categorization of data, there are two main steps. First, it is important to develop categories and to attach “these categories to meaningful chunk of data” (Saunders et al., 2009, p. 492). Those categories derive from three main sources: the data, the words of the participants or the existing theory and the literature review (Saunders et al., 2009, p. 492).

4.8 Thematic network analysis on qualitative data

As explained earlier in the literature review, we consider the concept of the architecture in an organization and the architectural factors as a way to analyze CE in the company. There are several reasons for it. First, the comprehension of the implementation and the development of CE as a process, which is the term underlined in the literature review, seems more coherent when we take a holistic understanding on the organization, such as with the architectural factors. Another reason is considering the data that we gathered thanks to the company. In fact, those data were diverse and it seems more understandable to gather them in several ‘compartments’ in order to smooth the analyze
and to allow the structuring type of qualitative analysis process that we presented previously. Those compartments are the architectural factors. Third, the analyze and the comparison of the different documents gathered in order to do a triangulation of the information we gathered seems more understandable with the architectural factors. Considering then the previous arguments, we choose to analyze our data with the thematic network analysis detailed in the article of Attride-Stirling (2001) and explained in Bryman & Bell (2011, p. 572). In this article, the thematic network is defined as a network “that summarizes the main themes constituting a piece” (2001, p. 386). In fact, it is a procedure of thematic network, which “provides a technique for breaking up text, and finding within it explicit rationalizations and their implicit signification” (Attride-Stirling, 2001, p. 388). Thereby, one of the aims of the thematic network analysis is to understand a problem (Attride-Stirling, 2001, p. 387). For this reason, this method seems particularly appropriate for our thesis because we want to analyze the architectural factors and then the organizational antecedents of CE in order to understand how this organization uses CE. Moreover, the structure of the thematic network analysis is constructed through themes, which corresponds to our willingness to use the structuring type of qualitative analysis process. This particularity corresponds to our willingness to analyze our research question through the themes of the architectural factors. To resume the method that we choose to use: the thematic analysis serves to underline the salient themes, while the thematic networks “aim to facilitate the structuring and depiction of these themes” (Attride-Stirling, 2001, p. 387). The extraction follows the three kinds of themes available: basic themes, organizing themes, and global themes (Attride-Stirling, 2001, p. 388) and is organized as follow:

Figure 3: Structure of a thematic network (Attride-Stirling, 2001, p. 388)

To find the structure of our thematic network, we used the method described in the article of Attride-Stirling (2001) with the following steps: coding the material, identity the themes, construct thematic networks, describe and explore thematic networks, summarize thematic networks and finally interpret patterns (Attride-Stirling, 2001, p. 391). Then, beginning with the center of this structure, we will define our global
themes. A **global theme** is “a super-ordinate theme that encompasses the principal metaphor in the data as a whole” (Attride-Stirling, 2001, p. 389). In our thesis, according to the literature review and to our choice of understanding the concept of CE, the global theme is corporate entrepreneurship. Then, attached to the global themes are organizing themes. The **organizing theme** “is a middle-order theme that organizes the basic themes into clusters of similar issues” (Attride-Stirling, 2001, p. 389). The organizing themes are the architectural factors defined in the literature review: strategy, culture, structure, and leadership. Finally, to each organizing themes is one or more basic themes attached, according to the literature review. The **basic theme** “is the most basic or lowest-order theme that is derived from the textual data” (Attride-Stirling, 2001, p. 388). We attached basic themes to each of our organizing themes, and they are also resumed in a table in the Appendix 2. The majority of those basic themes derived from the literature review. However, some were added after a first look at our data thanks to the abduction method. Indeed, as explained previously, one source of terms for the categories are the terms that emerge from the data. In our empirical study, we found some terms that were not underlined in the literature review but were present in the results. Thereby, in the table presented in the Appendix 2, the basic theme coming from the literature review are in black, and the one coming from the data are in blue.

*This data collection part allowed us to present the designs of the interviews and to explain how we decided to conduct the interviews. The following part will present the empirical result.*
5. Empirical Study

After explaining our data collection method, we will now expose the results of the interviews we conducted at the Gefeba Elektro GmbH. We divided the results in three different blocks, which are representing one theme each. We decided to divide them because it appears with the literature review and after conducting the interviews that the different themes are deeply linked. The boundaries between the themes are sometimes thinner than expected and we choose to present them in themes’ blocks in order to be more coherent with the literature review and the way the interviews were conducted. The themes’ blocks are: strategy, leadership, culture, and structure.

5.1 Presentation of the company and industry

The Gefeba Elektro GmbH is a German medium-sized company with more than 100 employees that is located in one the largest industrial and urban areas in Europe (“Ruhrgebiet”) with headquarters in Gladbeck, North Rhine Westphalia. As a systems provider for ready-to-use automation technology, Gefeba has more than 40 years of experience and long-term partnerships with major multinational corporations such as ThyssenKrupp or Siemens. Depending on the client’s needs, which may be the planning of a new process or looking to restructure and modernize the automation of a process already in operation, Gefeba (www.gefeba.de):

- Analyzes the process
- Designs a solution using CAD/CAE (25 work stations)
- Develops user software up to level 2 applications
- Simulates the entire automation process in its own EDP center
- Manufactures the components in its own CNC supported workshops
- Installs electronic components and supervises start-up operations

Moreover, Gefeba specifies an electrical system as the planning of hard- and software, the manufacturing of electrical equipment as well as the installation and launching of operation (QMH, 2013).

5.1.1 Automation technology as core business

The Association of German engineers (VDI) states that automation technology includes soft-and hardware technical concepts, methods, tools, products, solutions for the control and feedback control as well as the automatic or partly automatic operations of a process. This includes the planning, drafting and implementation. The goal of automation technology is to optimize processes according to criteria such as increasing product quality, improving environmental impact or protecting people involved in dangerous or inaccessible processes. (2009, p. 8) As outlined in the introduction, the globalization process intensifies the competition and brings new challenges to the industrial process automation industry and its suppliers (Process IT Europe, 2013, pp. 6-7). The fact that the market is highly competitive and that competition is increasing according to several indicators of specialized publications is proving the fierce environment of the process automation industry. In reference to this, the automation industry is highly embedded with various industries requiring innovative automation solutions to continuously improve their operations. (Process IT Europe, 2013, pp. 6-7)

Indeed, in today’s knowledge-based economy, automation technology is specifically important to face the global market requests for availability, quality, reasonable prices and services as well as increased productivity level (VDI, 2009, p. 15). Gefeba has specialized to deliver electric systems with strengths in DV Software for level 2,
automation and control, drive technology, switch/- and control gears as well as installation and service (Brochure, 2014). In reference to this, the main fields of application are metallurgical plants in the industrial area “Ruhrgebiet” with its suppliers as well as client in steel, machine & plant manufacturing, water management and environmental protection. Through long lasting strategic alliances with machine building companies, Gefeba’s electrical systems are used world-wide. (Gefeba Handbook, 2013, p. 5). The last specificity is the type of competition that Gefeba Elektro GmbH is facing. Indeed, in the automation process industry, the three main challengers are ABB, Siemens and Schneider Electrics, which are large worldwide companies with diversified activities. In order to compare Gefeba Elektro GmbH with those companies, it is important to present some data of those.

<table>
<thead>
<tr>
<th>Name of the company</th>
<th>Location</th>
<th>Where it is present</th>
<th>Age of the company</th>
<th>Numbers of employees</th>
<th>Revenues 2013 (billion Euros)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABB</td>
<td>Switzerland</td>
<td>Worldwide</td>
<td>120 years</td>
<td>150.000</td>
<td>41,848</td>
</tr>
<tr>
<td>Siemens</td>
<td>Germany</td>
<td>Worldwide</td>
<td>165 years</td>
<td>362.000</td>
<td>75,882</td>
</tr>
<tr>
<td>Schneider Electrics</td>
<td>Germany</td>
<td>Worldwide</td>
<td>178 years</td>
<td>153.000</td>
<td>23,551</td>
</tr>
<tr>
<td>Gefeba Elektro GmbH</td>
<td>Germany</td>
<td>Germany</td>
<td>45 years</td>
<td>90</td>
<td>Confidential</td>
</tr>
</tbody>
</table>

Table 5: Data about ABB, Siemens, Schneider Electrics and Gefeba Elektro GmbH

The previous table underlined the fact that the Gefeba Elektro GmbH possesses different capacities and resources compared to the main challengers in the automation industry. In order to compete with these industry giants, entrepreneurial efforts as described by project managers of one of Gefeba’s largest clients (section: 5.3.2) have enabled the company to win projects despite the size and resource constraints.

5.1.2 Balancing values and innovative drive

Gefeba is not only trying to be innovative in order to stay competitive, but the company is trying to balance the high dynamics of technological developments with traditional values incorporated in the management and leadership. This way the company wants to make sure that technical excellence is combined with reliability and sustainable growth (Brochure, 2014, p. 2). In reference to this, Gefeba defined strategic goals related to innovative and entrepreneurial behavior and simultaneously tries to align them to company values. The following aspects related to strategic goals are extracted from the Quality Management Handbook (2013, p. 14).

First, the continuous increase in client satisfaction through intensified client satisfaction and cooperation. This serves as the basis for product and service improvements. In accordance with an entrepreneurial culture, the company tolerates mistakes within daily operations as long as they are not replicated. Second, the continuous motivation and qualification of employees based on highest standards and developed through constant and planned education. This also involves a positive company structure. And finally, the continuous extension of efficient processes for
**sustainable success** through internal processes directed towards client needs. The company strives for cost reduction and an increase in profitability. These goals are combined with traditional company values outlined in the Quality Management Handbook (2013, pp. 10-12): Business ethics, Taking responsibility for the reputation of the company, mutual respect, honesty and integrity, leadership and duty of responsibility for actions, recognition of competitive laws and antitrust laws, appropriate offer and supply of advantages, fair and objective placing of orders, appropriate use of office equipment, confidentiality and data protection.

5.2. Corporate entrepreneurship and the relevance of the context of Gefeba Elektro GmbH.

*We choose our case study because it was corresponding to our willingness to investigate CE in an SME facing a highly competitive market. In order to explain this choice, the following section will detail the link between corporate entrepreneurship and Gefeba Elektro GmbH in order to underline the relevance of the context of this case study for our research.*

5.2.1. Gefeba Elektro GmbH as a SME

Since it has consequences on the strategy, a classification of Gefeba according to its size is made. The criteria for the classification of the company are from the European Commission and are considering the numbers of employees, and the annual turnover or the annual balance sheet in total (2005, p. 5). Following those criteria, Gefeba Elektro GmbH appears to be an SME. The role of an SME is central for the European economy according to the European Commission (2005, p. 5). Indeed, the SMEs are particularly interesting because they are playing a significant role as an economic action in terms of employment, innovation and growth (Turner et al., 2012, p. 942; Gunasekaran et al. 2011, p. 5489; Ahmad et al., 2010, p. 194) and even “other aspects of social development, in general, and in industrial expansion, in particular” (Ahmad et al., 2010, p. 178). SMEs are also in the center of attention from the European Commission because they are numerously represented in European countries, building the ground of the economy. According to the SME’s Act written by the European Commission, SMEs account for 99.8 per cent of companies in the European Union (European Commission, 2008, p. 7). SMEs also generate 60 per cent of GDP and employ 70 per cent of private sector workers (European Commission, 2008, pp. 7-8). Moreover, the geographic situation of Gefeba Elektro GmbH is not trivial because it is in situated in Germany and then participates to the famous German Mittelstand, envied by several countries because of its strength, growth and financial performance (Gharpure, 2011, p. 14). However, SMEs are facing some difficulties in comparison to larger companies. Indeed, the resources of SMEs are limited comparing larger organizations (Gunasekaran et al., 2011, p. 5489) as well as the economy of scale (Aragon-Sanchez & Sanchez-Martín, 2005, p. 287). Moreover, considering the rapid changes of the market, the SME are more sensitive to “fluctuations in the industry and the market” (Ahmad et al., 2010, p. 178; Aragon-Sanchez & Sanchez-Martín, 2005, p. 287) and one factor permanently present for SMEs is the one of ‘uncertainty’ (Ahmad et al., 2010, p. 179). Nonetheless, despite those potential weaknesses, the size of Gefeba Elektro GmbH, as an SME, allows more flexibility and reactivity in general (Ahmad et al., 2010, p. 178; Gunasekaran et al., 2011, p. 5489; Aragon-Sanchez & Sanchez-Martín, 2005, p. 287). Moreover, founded in 1969 by an entrepreneur, the entrepreneurship is embedded in Gefeba Elektro GmbH, which is in coherence with our subject of studying the use of corporate entrepreneurship.
5.2.2. Corporate entrepreneurship and the SMEs

Concerning the link between an SME and corporate entrepreneurship in general, an SME seems particularly adapted for the development of CE for several reasons. First, SMEs and the innovation are deeply linked as explained by Schmelter et al. “SMEs are a key source of innovation and economic growth” (2010, p. 716). Another reason is because SMEs “require changes, innovations and improvements in the marketplace for surviving” (Zehir et al., 2012, p. 925) and is then naturally driven towards the use of CE. Then concerning the environment as described previously, the structure of Gefeba Elektro GmbH, an SME seems especially suitable to this highly competitive environment. Indeed, “in today’s international economic climate small and medium organization (SME) can adapt more easily to change” (Zehir et al, 2012, p. 924). In comparison to larger companies, SME have the capacity to adapt rapidly and constantly to the external environment. This is due to several factors. One of them is the informal and flexible structure that exists in SME (Zehir et al., 2012, p. 925) and not anymore in larger companies because “an organization grows from a simple and informal structure to a more formal, complex and differentiated one” (Ferreira, 2010, p. 392). However, it is important to add that the implementation of CE in SME is not known and there is no indication for this process by now.

5.2.3. The environment of Gefeba Elektro GmbH

The environment of Gefeba Elektro GmbH could be described with several attributes. First, Gefeba Elektro GmbH is situated in a mature industry, which has an impact on the competitiveness of the market, the weight of innovation and the importance of finding a sustainable competitive advantage. The mature industry is a step of the industry life cycle, just before the decline (Johnson et al., 2011, p. 65). This step of the industry life cycle is characterized by several difficulties to overcome for a firm, especially a SMEs because of the weaknesses that we said previously. Indeed, according to Parish & Oxenham: “Mature industries are characterized by increased competition and price deflation due to overcapacity, in addition to a reduction in the number of firms” (2006, p. 694). Moreover, the R&D investment is significant because innovation is definitely one of the keys of this business. The second attribute is the fact that Gefeba’s focus and specialization on automation technology, makes the company evolve in a niche market. A niche market strategy could be defined as « an emphasis on a particular need, or geographic, demographic or product segment” (Teplensky et al, 1993, cited in Parrish et al., 2006, p. 696). In the case of Gefeba GmbH, the company is focusing on the niche of the automation industry. Moreover, Gefeba Elektro GmbH is differentiating with two main points: the relation with the clients, which is aimed to be long-term and allows flexibility, and the innovative products. Those two main points are characteristics that are adapted to niche activity as defined in the article of Toften & Hammervoll (2009, p. 1381). Furthermore, considering the niche market in a mature industry, Parrish et al. highlights that the relationship, and the continuous innovation are some of the success factors (2006, p. 698). The last attribute of the environment of Gefeba Elektro GmbH is the fact that it is situated in a highly competitive market, where there is “constant disequilibrium and change” (Johnson et al., 2011, p. 60). The characteristics of this market are a high numbers of competitors, which are more than 450 000 individual, in majority in the EU (Process IT, 2013, p. 6). The main competitors are ABB, world leader based in Switzerland, then Siemens and Schneider Electric, both based in Germany. Then, the costs to leave or to enter the market are high because the market is based on expertise. Moreover, there is a price competition in this market. Thereby, we can qualify this market as being highly competitive.
To resume, the environment of Gefeba is particularly difficult. However, difficulties could be a driving change for innovation and then turned into an advantage (Kuratko et al., 2004, p. 14).

5.2.4. Gefeba Elektro GmbH, innovation and high competitiveness

Facing an increasingly complex and rapid changing market, Gefeba Elektro GmbH is in a highly competitive market where one of the main competitive factors is the innovation (Aragon-Sanchez & Sanchez-Martin, 2005, p. 288, p. 291; Miles et al., 1978, p. 551; Bigliardi et al. 2011, p. 84). It is important to underline that in those cases, where the market is particularly rough and changing, the innovation can be technological as well as managerial (Hyvönen & Tuominen, 2006, p. 647). Damanpour (1991) explained this distinction clearly. The technological innovation pertains « to products, services, and production process technology » (1991, p. 560). While managerial innovation involves new organizational structure as well as new strategies, which are “indirectly related to the basic work activities of an organization” (Damanpour, 1991, p. 560). Moreover, the innovation is not “ a simple linear process” (Carmona et al., 2012, p. 2465) and implies to hire employees who are not “risk averse” (Carmona et al., 2012, p. 2465). Then, to lead to this innovation and to remain competitive, Gefeba Elektro GmbH has to permanently stay flexible. This flexibility is considered as “one of the most remarkable features that distinguish SMEs from large firms and the source of many of their principal advantages, such as speed of response, ability to innovate, and capacity to adapt” (Aragon-Sanchez & Sanchez-Martin, 2005, p. 291). This flexibility derives from the highly competitive market and the concentration on innovation (Aragon-Sanchez & Sanchez-Martin, 2005, p. 291) but has also an impact on the organizational design “in that it forces SMEs to modify their organizational structure” (Aragon-Sanchez & Sanchez-Martin, 2005, p. 291). Both, flexibility and innovation, are a vector of change, and not a response to it (Damanpour, 1991, p. 556). In the case of Gefeba Elektro GmbH, innovation is a response to a changing and competitive environment, but it implies also changes inside the organization. Moreover, the flexibility is also a way to survive in this complicated environment, and is also deeply linked with innovation, as well as changes in the organization.

5.2.5. Corporate entrepreneurship, innovation and high competitiveness

Through the years of researches, corporate entrepreneurship seems to have a meaning particularly related to the concept of innovation. The following sentence, used in the article of Detienne is clear: “without innovation, corporate entrepreneurship would be analogous to a beautiful automobile without a driver – attractive, appealing, and useless to move in the desired direction” (2004, p. 76). Innovation is seen as being one of the three major dimensions of CE as said previously (Ferreira, 2010, p. 388; Martin-Rojas et al., 2013, p. 418; Kuratko & Audretsch, 2013, p. 325) but it could also be describe as one of the goal of CE in order to“reinforce the company’s position in existing markets while allowing it to enter new and perhaps more lucrative growth fields” (Zahra et al., 2009, p. 248). The term innovation could be defined as “a new idea that may be a recombination of old ideas, a scheme that challenges the present order, a formula, or a unique approach which is perceived as new by the individuals involved” (Van de Ven & Engleman, 2004, p. 48).

In our case study, the development of corporate entrepreneurship, and in particular organizational transformation, is highly related to the aim of obtaining innovation as a key for a sustainable competitive advantage. The reason for that is because Gefeba Elektro GmbH is located in an area and in a market niche where the competition is high
and numerous. Besides, competitors are usually larger companies with access to a greater number of resources. Then, several authors underlined the deep link between organizational transformation, innovation and a competitive advantage (Martin-Rojas et al., 2013, p. 417; Detienne, 2004, p. 76). To resume this link, Kuratko & Morris explained: “entrepreneurial actions are an important path firms travel to innovate; in turn, the firm’s innovations are a common source of its competitive advantage” (2003, p. 25). Moreover, studying German SMEs, the article of Schmelter et al. underlines that organization “must nurture entrepreneurial activity throughout their operations to continue to compete successfully” (2010, p. 715). This sentence highlights the difficulty to keep the entrepreneurial activity as a process on the long term, particularly for SME, because they must show “a continuous commitment to learning” (Rhee et al., 2010, p. 66). Moreover, it also underlines the role of the individual in the process, particularly the role in the organizational learning (Martin-Rojas, 2013). The individual is the key to implement the organizational transformation (Hayton & Kelley, 2006, p. 408) but also one of the sources of the challenges (Schmelter et al., 2010, p. 715). To resume, as a result to this strong competitiveness, and the situation of the SMEs, organizational transformation seems a solution in order to enhance innovation and to gain a competitive advantage. However, there is currently no ‘recipe’ in order to implement it in those conditions, which is why we think our study participating to fill a gap.

*After the description of the relevance of the context of Gefeba Elektro GmbH for corporate entrepreneurship, we will present the different results.*

### 5.3 Presentation of the results

#### 5.3.1 Presentation of the interviews

Before we went to the company where interviews were planned, we decided to send some information in advance to the participants. The aim of this preparation was that both parties were prepared and to make sure that the goal of the discussion and context is clear. We first included a presentation of ourselves, the thesis writers with an explanation of our ambitions and goals for this interview in the context of this thesis. Moreover, we introduced the participants to our subject by giving them a general overview of the main topic “corporate entrepreneurship” and the main theme blocks for the discussion. The aim was again that both parties are prepared and that the goal of the discussion is clear for all participants. Finally, they had the choice to participate in the study, knowing the subject of it, and to choose the language of the interviews between either English, German of French. Then, all interviews took place on the 7th of May 2014 at the Gefeba Elektro GmbH in Gladbeck, Germany. With a brief introduction, all participants were once more introduced to the topic and asked if they have any pre-knowledge regarding corporate entrepreneurship or any questions related to the thesis background beforehand. In conformity with the theme blocks strategy, leadership, culture and structure the interviews will be presented in the following sections, according to each participant.

**Interview with the CEO**

The first participant is the technical CEO of Gefeba. He is responsible for setting the technical strategies and positioning of Gefeba in technical areas. Apart from that, he keeps the client contacts and is responsible for the realization of projects.
In the strategy block, the CEO starts out explaining how the company works and how corporate entrepreneurship is a key concept for the company’s success. Firstly, he underlines that the company is interwoven with clients. He explains the company’s nature of work as project-based and that every Project Leader needs and that while “project teams are getting together and are asked to realize the project”, the Project Leader needs to “take into account responsibility for project, cost, budget and enforce this project in cooperation with the client”. Further, he argues repeat client are won based on trust and that entrepreneurial thinking is not only realized from the top, but rather “every employee needs to live this and realize this in order to convince the client”. (CEO, 2014)

The CEO further points out the importance of innovation when it comes to corporate entrepreneurship and its necessity to stay competitive on the market. Companies do business with Gefeba because it offers the “most modern, fast, innovative technique”. He further emphasizes the importance of being at the forefront of innovation in order to stay competitive: “50% of our revenue is made with products that have not been on the market 5 years ago. Within 5 years you can throw away 50% of your know-how and add 50% in order to stay competitive”. In reference to this, he further outlines that Gefeba is cooperating with major product developers to be up-to-date regarding technology with “education, advanced training and strategic alliances”. Regarding the implementation of innovation, he argues that it is rather a problem of the market than company-internal. The clients often prefer established-, instead of new technology since they “have older systems that they want to keep and do not want to modernize at the speed that is actually possible”. Even though the company is pushing innovation through “establishing new business opportunities, innovative idea generation, and foster employees in different working groups, strategy groups to think innovative and entrepreneurial” larger clients are not as flexible and adaptive as Gefeba is (CEO, 2014). This may be due to their “bureaucracy and increasing cost in large organizations.” Apart from that, he emphasizes the importance of an industrial basis in Germany. He argues that “the existence of the market is vital” since Europe (including Germany) relies an innovation and technology leadership. The US and Europe started to realize this and start to go back to re-industrialization: “Germany went through the crisis quite well, but when energy prices are rising companies move to 3rd countries”. The CEO points out that this is reasons they lose clients and that moving with them is rather “unpromising” since there are local company’s capable of taking Gefeba’s role. The CEO summarizes the strategic importance of a “longstanding costumer relationship” as well as the role of innovation and technology as the “industrial basis. (CEO, 2014)

Regarding the vision, the CEO refers to the American origin of the word and the differences in business cultures. He talks about “two different approaches of thinking” and outlines that “in the US you build a company to make money and in Germany you build a company because you have a product that you would like to sell”. He states the vision is rather not relevant in the company’s context, since “we do not think in terms of establishing mega-cities”. The CEO prefers to not use the word vision, but states that the company wants “to offer automation technology in 10 years, that we are able to enter new areas (such as local water treatment) with new business opportunities and to continue to do business”. (CEO, 2014).
In culture and leadership block, the CEO emphasizes the proximity between employees and the top management, which is also possible due to the size of the company. The direct contact with employees is described as follows: “I am walking around every day and see what people are doing. I can see what they are doing, what are their problems”. My bureau is open, the hierarchies are flat and everyone is more or less reachable. You know each other, this personal contact is vital. You know what your colleagues are doing, what projects they are working on. Moreover, he stresses that this business culture is significantly different from larger companies where everything is formal: “Here, everything is more informal”, “there is no formal open-door policy”, “the exchange of information is informal and easier”. To keep this culture alive is very important to Gefeba and the employees value this, since it is “part of the philosophy”. Apart from that, cultural problems are minimized since “people know each other: face-to-face”. (CEO, 2014)

Nonetheless, the CEO stresses that nothing is working without a certain degree of control. He outlines that coordination is necessary and that “hoping that people develop themselves by talking to each other does not work either. There need to be procedures and formalities, but here those are much more informal than in larger organizations”. The CEO outlines once more “the business culture is lived by the top management and fostered”. In reference to this, he explains that there are tools as the intranet to facilitate information sharing, but here people are “not sitting behind the desks trying to research the intranet to get their information instead of talking to your neighbor who might have the answer immediately”. (CEO, 2014)

When it comes to analyzing how the company deals with failure, the CEO points out that there is no organization where there are no mistakes and that you rather “need to accept that mistakes happen”. He emphasizes that mistakes need to be seen from a positive perspective, which contributes to get more “experienced” instead of “searching for the guilt one, put him in the corner and shoot him down”. He refers to the origin of this in the US, where someone fails and gets a second chance, since due to his experience you can be confident that he will not do the mistake again: “This is how we treat our employees. The employee learned something; he is more valuable due to his experiences.” However, he explains, that if mistakes repeatedly happen you should “analyze the mistake, do the analysis, think if this has really been a one-time mistake or if this is likely to happen over and over again”. (CEO, 2014)

In the structure block, the CEO outlines that the company has no linear organization or matrix structure, but a “project centered structure, where different levels and departments work together based on experience and expertise accurate to the project”. When it comes to failure, the CEO mentions that a mistake does not justify questioning the entire company and its structure that has been established over centuries. He mentions that some companies “start establishing rapport and new procedures to avoid this mistake in the future. However, this one mistake means extra bureaucracy and is not in relation to the amount of projects that work well.” (CEO, 2014)

The project-based structure also becomes obvious when he compares the Project Leader to the “entrepreneur” and the project itself as “a company within a company”. He outlines that many things are “broken down and allocated to the project level” including training and development. In reference to this, he states that “clients require certain skills that need to be trained within a certain project”, which needs specific
skills relevant to the project. The Project Leader is responsible for the project. Moreover, he stresses that the top management does not “overrule” and that there is “trust and support” towards the Project Leader. Nonetheless, he points out that parallel to the “flexibility” given to Project Leaders, such as their status of being authorized representatives who can sign agreements, there are “certain frameworks and procedures” for control. From a time perspective, he regards this as an advantage because in “bigger companies, the signature often needs to come from someone higher up in the hierarchy, which takes time”. He continues stating that creativity and freedom are relatively large, but he argues, “We need to see what makes sense”. (CEO, 2014)

Regarding rewards and reinforcement systems, the CEO states that 30% of profits are distributed. However, there are no specific criteria regarding compensation and benefits to foster entrepreneurial activity: “We rather see this as a company-wide success, but we aim to develop a pilot project with more criteria on an individual basis in 2016” (CEO, 2014).

Interview with the technical director

The send participant is the technical director at Gefeba. New in this position, he has previously been working as senior Project Leader with responsibilities for large projects. Regarding the topic corporate entrepreneurship, he has some pre-knowledge and makes the direct to the company at the start of the interview in the strategy block.

In the strategy block, the technical director outlines, “entrepreneurial thinking is not only expected by the top management, but is lived throughout the entire organization up-to the lowest hierarchical level”. The structure of the company is based on client relationship that are not only acquired and maintained by top management, but actually by every employee: “employee is expected to establish client contacts that eventually can lead to business opportunities.” He further outlines the importance of innovation since clients want the latest technology, but do not know how to implement and realize it. In reference to this, the company needs to be at “the forefront of technology” and “when the client heard about some new technology, then we should be able to be experts and provide recommendations”.

Regarding the vision, the technical director mentions that the company plans for the short and long-term. Although he is not that involved in shaping the strategy, he states that “the structure will rather remain and clients will change depending on the economy. But the challenges will come with the technological development within the automation sector.”

In the culture and leadership block, the technical director stresses the importance of the “very close and personal contact between employees that even reaches to the top management”. He argues that this is important for the company since it facilitates knowledge sharing and awareness of the other employees skills and expertise. Accordingly, when it comes to project collaboration, teams are put teams together based on experience and expertise: “The one who is the technology leader in the field, needs to provide expertise to others so that there is some kind of know-how transfer”. Apart from that, the technical director points out that project success highly depends on the preliminarily stage: “We try to control and discuss the path of the project with the people who are experienced. Projects are won and lost at the beginning.” He further emphasizes that within this project-based exchange “many things are communicated on a face-to-face basis” and “the door is open for everyone”. The personal relationships

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are also held with clients and maintained over time. Regarding failure, the technical
director states that mistakes are tolerated and made in every project. It is more important
to identify mistakes and the reasons and accordingly adapt processes: “We do not try to
get to the point that colleagues try to hide mistakes. We are dealing rather transparent
and open with this issue. There will be discussion internally, but mistakes should not be
repeated.”

In the **structure block**, the technical director outlines that there are things defined by
the top management to give direction regarding use of the newest technology.
However, there is a certain degree of flexibility given, which becomes obvious when
looking at the project execution: “You can see who did a project. You will see there is
certain flexibility since everyone is encouraged to bring in new ideas or things acquired
from fairs etc. If there is something new, there will be a discussion about it”. When it
comes to the implementation of innovation and creativity, the technical director states
the clients play a crucial role: “The client has a certain imagination of what he would
like to have. There are certain technologies. If the client says he wants this technology,
we are bound by this”. However, he also mentions that apart from clients requirements,
Gefeba needs to take into account the cost of creativity: “Creativity is encouraged at
Gefeba, but it needs to take into account the costs. We need to see what is required and
what makes sense”. He further explains that Gefeba needs to innovate due to the
competitive environment: “We are not alone on the market. The others are also not
stupid and go to the Hannover fair and see what the newest technology is”. Regarding,
rewards and reinforcement systems, the technical director points out that he personally
thinks the 30% profit sharing as a common reward is positive. Referring to personalized
incentives; he argues “sometimes you cannot choose your project, so this has
consequences on the amount of innovation and creativity”. A personalized evaluation
based on this is not easy, since project have different potential, scope and starting
points. Finally, he stresses the company’s expectation that “you are taking initiative and
stay up-to-date regarding technological and market developments”.

**Interview with Project Leader A**

The third participant is a Project Leader at Gefeba and has been working for the
company for 11 years. He studied electrical engineering, and power engineering. The
first years, he developed engineering software. Then he moved over to the simulation of
facilities and electrical drive technologies. The Project Leader A stated that he does not
have any specific pre-knowledge regarding the main topic corporate entrepreneurship:
“to be honest, I did not hear about that before”. (Project Leader A, 2014).

We first began the interview with a set of questions concerning **the strategy block**. The
Project Leader A starts outlining that innovation is very important for Gefeba.
According to this participant, “we don’t have much chance on the market without it”.
Innovation is as much important because the competition is really hard. This market is
highly competitive because the competitors are numerous and so the “prices are getting
lower”. Furthermore, Project Leader A recognizes that the budget of the buyers in this
industry are cut down while the offers of competitors of Gefeba are numerous: “here in
this region with a lot of industries, it’s like 20 companies sitting there and waiting for
projects to come”. In order to stay competitive, they have to “look forward, in terms of
strategy”. They also have to stay aware of the competition by supervising the evolution
of the market. One person in the company is looking at the development of the market.
According to Project Leader A, it is the director of the company, who “looks at other
companies in the same field and (...) gets an overview of the market”. The information about the change in the market is also coming from their suppliers, which are informing Gefeba of the last innovation. (Project Leader A, 2014).

Project Leader A continues pointing out that “understanding that this market needs high innovative products, Gefeba chooses to concentrate on quality products”. Gefeba Company is “an old style business” where there is no use of a ‘vision’ for the company. However, this company has a clear goal when reaching the market, which is “quality products” because “we want to satisfy the customer so that that they will chose us again”. In fact, one particularity of this market is that the life cycle of the products is quiet long: about 10-15 years, depending exactly on the type of products. According to this, Project Leader A showed his knowledge of the value of producing good quality products: “when we gave our quality products 15 years ago, (now) they still remember us and don’t let the chance to others”. However, the difficulty is to keep proposing quality products but also being more cost-effective in order to “lower the costs (...) and to stay competitive”. That is why the concept of entrepreneurial thinking could be used in the company in order to stay competitive. (Project Leader A, 2014).

Indeed, the entrepreneurial thinking could exist in companies with less employees but the numbers of employees is an obstacle for our interviewee. For a company like Gefeba, which is a mid-sized company, “it’s a bit hard to have this thinking still in on the level of the company”. However, project managers should have this idea in mind when working for the company. For the Project Leader A, the direction is aware of the importance of entrepreneurial thinking because “they are trying to implement this feeling” thanks to meetings for example. (Project Leader A, 2014).

After the first set of questions, we choose to concentrate on the business culture and leadership block. First, the Project Leader A describes it as being an “open door policy”. In fact, the size of the company and the business culture allow employees to know and to work between each other, even to the top management. The Project Leader A explained that: “You know everyone, we are not working on our own, so we really communicate. It also goes up to the management level”. The communication is using personalized channels because if employee needs to communicate, they go to each other at the first place or they give a call to the person, before sending emails. There are no barriers to communicate between employees, which implies that the sharing of ideas is also affected positively. This sort of communication is clearly an advantage for Project Leader A because it allows “short channels for communication and it’s make things easier”. Even with the top management level, the communication is described as a “good communication”. However, the communication is easier with people having the same background, like the CEO for this Project Leader comparing to the others top managers because they have less knowledge of his field. (Project Leader A, 2014). Concerning the management, there are many occasion of communication with top levels. In fact, according to the Project Leader A, “mainly the management communicates through emails to the employees” but there is a meeting once a month with managers in face to face. Those meeting are the occasion to say if “everything is fine”. For the Project Leader A, the type of management depends on each manager: “everyone has kind of it’s own way”. Some advices to managers are given but each manager has a large flexibility to manage the projects. (Project Leader A, 2014). In order to develop the sharing of ideas between employees, some workshops are organized by the director of Gefeba. The reason of those meeting is that the idea sharing
is central for innovation and “we find out that if you don’t use the workshop, (...), people don’t communicate between teams”. The meetings are organized every two weeks and the presence of the employees is mandatory. The director of Gefeba is leading those meetings in a non-strict manner by asking if someone would like to share ideas. Those meetings are the solution found in order to “spread the good ideas within the company, within the people”. (Project Leader A, 2014).

One important point regarding leadership is how the mistakes are handled. In the case of the Gefeba, the method chosen is “like a child: you did something bad and then, not again”. After a mistake, the employee sits with the CEO and the goal of this meeting is to understand the miscalculations and the causes of the fail. After this time of communication, Project Leader A underlines that “you have to pay attention” for the following project. (Project Leader A, 2014). This method of handling the errors keeps sometimes employees away from trying other things. However, clients themselves also sometimes restrain the innovation. In fact, “sometimes, some customers are very conservative”. The reason could be that “they are used to other systems, (and) they don’t want to change”. This leads to a customer dilemma, “where the innovation doesn’t spread as we wanted” because of the company and of the customers in the same time. The reason for the company is because employees don’t want to take a risk. While for the customers it is because they don’t want to change too much. (Project Leader A, 2014).

The last set of questions was about the structure block. Concerning the decision-making process, Project Leader A explained that it is spread between each level of the company with flexibility. According to the project manager, they are “free” in their decision-making process but the communication is permanent with upper level of the firm: “before we make decisions, we talk about it, with the CEO also”. Moreover, the “budget comes at the center of (the) project” because “it is defined and recalculate by every project manager every month”. This attention to the costs is asked to project manager by the top management level. Concerning the reward system, Project Leader A points out that it is rewarding equally each employee according to his level in the hierarchy. However, Project Leader A also underlines that a reward system according to the criteria of innovation: “could be better, in some cases”. (Project Leader A, 2014).

**Interview with the Commercial Director**

The fourth participant is the Commercial Director of Gefeba. He is the Head of Finance and Accounting and Human Resources, he is responsible for development of the annual report and involved in the cost calculation. In general, all commercial activities are within his responsibilities. Regarding corporate entrepreneurship, the commercial director has some pre-knowledge and relates the company’s current project controlling efforts to it and emphasizes the difficulty to replicate entrepreneurial activity throughout the organization.

**In the strategy block**, the commercial director outlines that the operational business is executed by technical workers who need to develop an entrepreneurial instinct when an opportunity is about to turn into real business: “He needs to capture client needs and then think of turning problems into solutions and moreover turn this problems into offers that fit client needs and that are able to be financed by the client”. The reason for this necessity is the factor innovation, which is “central to the business”. In reference to this, he emphasizes the nature of the business, which requires individual problem
solving rather than the replication of a standardized product. The commercial director uses the term “art” to show that each project is unique but requires the development of “standards applicable to the individual projects”. The challenge is to coordinate customization and standardization. (Commercial Director, 2014) The commercial director explains that due to their technical focus not all employees have incorporated an entrepreneurial attitude. In accordance to this, he stresses the importance of making these employees realize that there is an art to create and sell a product that is providing economic benefits for the company, that satisfies client needs and simultaneously leads the client in a certain direction towards innovative products: “It is a challenge to develop instruments that address these issues, that foster employees in thinking and acting entrepreneurially, to encourage them and make them realize the economic benefits of acting entrepreneurially. Since “the market is not getting easier”, there is a constant process of showing employees to look at the bigger picture and think entrepreneurially. In addition, the commercial director mentions that the company tries to find a common ground for technical and commercial issues by “implementing instruments that are understandable for commercial and technical employees and that are accepted by both parties.” With the help of control system the company aims to determine indicators directing entrepreneurial efforts in a “transparent and sustainable matter.” (Commercial Director, 2014)

In the business culture and leadership block, the commercial director sees the company in a transition phase from being focused on the founder as the dominant father figure to a more managerial business model with 3 divisional CEO’s (acquisition, technical and commercial. In reference to this, he mentions “new communication channels and mechanisms” determine “how to work with each other.” In this sense, he argues “through these instruments the entrepreneurial leader needs to be compensated.” Regarding the business culture, he emphasizes the “flexibility” within the company, but points out “this can lead to chaos. This chaos must be channeled and through information mechanisms and hierarchical levels.” (Commercial Director, 2014)

Apart from that, the commercial director argues that the growth process also has an influence on the relationship between top management and other hierarchical levels: “It is not as intensive at it is in small companies, since this does not work anymore with our size.” To compensate the bridge and keep relationships between top and management on other levels as intensive as possible, we introduced a “technical leader who controls but also helps employees with their worries and guide them in the right direction.” In conformity with this, the technical director compensates the father figure as well as the entrepreneurial attitudes deriving from him and bridges the gap between Project Leaders and top management: “Here we need to have the right person in charge to replicate entrepreneurial attitudes and to coordinate in a way that allows acting entrepreneurially.” (Commercial Director, 2014)

In addition, the commercial director outlines that employees are expected and need to take risks: “The employee needs to try things and needs to think entrepreneurially and be innovative and take risks. Otherwise you do not have profitable projects.” There is a certain amount of uncertainty deriving from the market and “the philosophy in bigger companies, that are our clients.” The commercial director argues that clients are not as flexible as Gefeba due to their large size and bureaucratic structures. In reference to this, he states “they are trying to secure themselves, describing their functional
requirements with many juridical elements. This way they want us to deliver and through this description it makes it hard for us to estimate the actual cost. Very global structures make it hard to overview.” Due to this uncertain environment, the employee needs to develop a certain kind of tactfulness and the company tries to lead employees towards handling this relationship with the clients by “training our employees regarding negotiation skills and the development of defense strategies in the contract formulation” (Commercial Director, 2014)

In the structure block, the commercial director points out that the decision-making power is transferred from the top to the executing departments. In reference to this, “all information that are necessary for the cost calculation etc. need to be transferred to the Project Leader in charge of the project. At this point, the design of the project is in his hands.” The employees’ entrepreneurial thinking becomes significantly important when negotiating with the client and drafting the contract: “if the Project Leader is capable of providing innovative solutions that can be realized cost effective and that satisfy client needs, then there are profitable projects. If our employee is not able to think entrepreneurially and the client is not flexible in drafting the agreement, problems will occur.” Regarding the flexibility of the Project Leader, the client relationship plays an important role. To flexibility is enhanced when the Project Leader and the person on the client’s side “think functional with innovative and meaningful approaches that are goal oriented” (Commercial Director, 2014) Regarding a reward and reinforcement system, the commercial director states that the employees should benefit from the company’s success. Therefore, “30% of annual surplus is distributed to the employees”. He further mentions that there are criteria that have influence on the rewards, such as “the simple presence as well as the salary level.” The next step is the implementation of an employee evaluation system, where each supervisor evaluates his subordinate based on: “technical know-how, team ability, project success, assertiveness, representation ability, acquisition ability.” Apart from that, the commercial director mentions that this evaluation system has further non-monetary reasons: “It brings supervisor and subordinate together so that there is continuity and a real communication, so that there are no misunderstandings between the two regarding expectations” In conformity with this, he mentions that the company wants to provide a platform for employees for goal definition and to see how goals are realized in a transparent way: “We realized that there is a need to foster our employees and these are things that supervisors rather avoid without such a system.” (Commercial Director, 2014).

Interview with Project Leader B

In the strategy block, Project Leader B started out providing some information about the high competitive market and some reasons of the market conditions. Indeed, one of the main clients in the automation industry made wrong investment and they now need to cut the costs where they find an opportunity. That is why the innovation is a constant need and is in fact “central to have a chance on the market”. Gefeba seems a step ahead in innovation as described by this employee: “throughout the last years, we have lived on the basis that we are more innovative than others”. However, being innovative with the product is not sufficient in this industry. The aim of Gefeba is “to be innovative in the processes to create the product: hardware planning, software creation, others processes in the workflow”. Employees themselves are being the origin of the innovation and it begins with “the shop floor and their supervisors”. From the lower level to the upper level the tasks are being more and more complex, but also more interesting and that is also why more initiative is asked at the workplace in order to
foster innovation. (Project Leader B, 2014). Another aspect is that “the amount of time allocated to innovation is huge” in Gefeba. According to Project Leader B: “innovation and entrepreneurial thinking is central to the company’s success”. That is why they organize “workshop, where employees meet once a month to discuss and share knowledge”. The goal of those workshops is to spread the ideas inside the company. The process is clear for every employee and in every workshop: “employees present new approaches, things they faced in their projects that are worth sharing to learn from each other”. The process of sharing what others learned aims to avoid a loss of time and may be some difficulties for others employees. Surprisingly, the ideas in those workshops are coming from the company itself but not only. In fact, “we also invite some companies who present new approaches, ideas, knowledge”. It is surprising because it is not every company, which accepts to learn from other company or, which accepts to show to others companies the business culture of the company. (Project Leader B, 2014).

Confronted to this high competitiveness in this industry, this employee knows that one strategy needs to be diversification in order “to diffuse the risks”. There are currently “new business opportunities specialized in steel but other areas need to be addressed”. (Project Leader B, 2014).

In the business culture and leadership block, Project Leader B describes the communication within the company, which seems very effective and very easy. In fact: “the door is open and the management is taking time to listen to the employees concerns”. Nonetheless, the difficulties generated by the growth of the company are salient: “it is getting more difficult due to the growth”. Despite those difficulties, the Project Leader B underlines the importance of the employees and of this communication process because employees are considered as “assets” and it is clear for this employee that “we need to listen to them and to foster them”. (Project Leader B, 2014).

According to Project Leader B, another difficulty due to the growth of the company lies in the integration of the new employee. Indeed, he points out the difficulties with the new comers in the communication and in the integration in the company. The integration process was not always like it is: “15 years ago, the introduction time was more intense”. Before now, the learning was made through the observation: “people were taking the new ones with them so that they can learn by observing”. Nevertheless, due to a lack of time and to an important amount of projects, the integration process was neglected and it had consequences. This change helps the company realized that they “have to change that again because the transition time is vital to enable ongoing operations”. Indeed, this integration’s process is essential for several reasons. As explained by the Project Leader B: “Integrating and developing new employees is important because employees are assets with their know-how”. The risk with neglecting integration is that employees could be interested to go to the competition. That is why, in terms of business culture, it is important for Gefeba to “provide a good work atmosphere and to train employees to develop themselves within the company”. (Project Leader B, 2014).

A sign that Gefeba is aiming to develop employee within the company is the way failures are handle. For the Project Leader B, “it depends on the employees”. However, “as a Project Leader, I should be honest and transparent about the project
A difficulty with a project is not always associated with a failure thanks to this communication culture. As described by Project Leader B, “when there is a problem, I go to the management and tell them if we continue like this, the project will fail. Then we search for a solution together”. The management trusts the employee to have autonomy and take initiatives, if it is necessary. The policy with failure is clearly that “as long as you are transparent and show mistakes or problems, the management will give you full support”. However, this process of communicating and taking initiatives “needs to be done early enough”. Since every employee is trusted to handle his/her flexibility with success, adding to that an open door policy with the management, when “you know the project will fail and go to the management at a late stage of the project, then the discussions are becoming a bit more serious”. In this case, the seriousness is also because the management is not able anymore “to change anything”, in others words, to fix the problem. (Project Leader B, 2014).

Another aspect of the business culture of Gefeba is the reward system. Each employee gets a 30% bonus and then others criteria are evaluated as “how good we did a project, how good did we generate new ideas, or implement innovative solutions, etc.”. However, as explained by the Project Leader B, this system is obsolete because it causes several difficulties. The first obstacles of this reward system concerned the communication between employees because “so far the criteria are only coming from top management (...) and there is no discussion”. Another difficulty raised by this reward system is the transparency. Globally, “there are different expectations and we would like to see how are expectations matching and how can we be more transparent” with a new reward system. This new system would consist of an employee evaluation, which aims “to get supervisor and employee together”. (Project Leader B, 2014).

**In the structure block,** Project Leader B emphasizes the flexibility within the company, which is necessary for innovation. In fact, this flexibility exists at every level of the company and is supported by the top management. “Employees get space and are flexible in their work execution” which concretely means that there are no supervision concerning the working hours because “every employee is responsible to set his own schedule and work independently”. The structure also “enables people to go to the management at any time”. (Project Leader B, 2014). The same principle of flexibility is applicable to the decision-making process. Indeed, a “Project Leader has a goal and he decides what resources do I need in terms of time, personnel, etc., to reach this goal”. For every employee it is the rule: “we are very free in executing our projects and also to come up with innovative ideas as long as they are in the framework of the project”. Nevertheless, the obstacles to new ideas and new processes are often coming from the client side. According to the Project Leader B, Gefeba is “often more innovative as the clients desire”. The reason is that clients do not want too much changes because it could be hardly accepted in their company or because they do not want to do something wrong. Surprisingly, conservative clients are more common in the case of new employee of the client’s company, just graduating from the university. As the Project Leader B also surprised explained: “the clients decision-makers who retire were often more innovative than the new ones coming from the university. You think they should be more innovative, but often they are even more conservative”. For this employee, the reason for the conservativeness of young employee is that “a certain amount of resources is allocated to this project and these young new comers focus on delivering what they were asked to, which does not enable them to look at the bigger picture”.

(Project Leader B, 2014).
5.3.2 Presentation of the other documents

As outlined above, the environment the company is working in is specific and further material will be presented in order to further elaborate the case including: Brochures, internal and external documents and publications, personal communication with clients in charge of procurement as well as personal observations made at the GefebaElektro GmbH facilities. Throughout our visit to the Gefeba headquarters in Gladbeck (Germany), we include our observations and personal communication with relevant stakeholders. Most importantly, the personal communication with 2 project managers of one of the biggest clients provides insights on their view on the case company Gefeba. This enables us to better understand the context in which Gefeba uses corporate entrepreneurship. For privacy reasons, the project managers are called client- project manager 1 and client project manager 2.

Client project manager 1 (summarized personal communication 2014)

Client project manager 1 mentions that the specific environment Gefeba is operating is characterized by the close proximity to the client. Gefeba works on a project basis, however the collaboration with the clients has been established over centuries. To work as efficiently as possible, Gefeba is highly integrated into client facilities. There are several bases at the client facilities in order to react to automatisation work as quickly as possible. He further outlines that “the facility the company is working has a surface of approximately 9km², which equals the size of a small city. Throughout long-term cooperation, Gefeba has acquired knowledge about client facilities that are unique and take time to develop. This is a competitive advantage Gefeba naturally acquired throughout years of close cooperation. Apart from that, “Gefeba is due to its size able to respond faster and less bureaucratic to client needs.” Referring to the company’s market niche, Gefeba has developed expertise in steel business and knows the manufacturing plants and client facilities and processes due to their direct presence and daily interactions on the clients’ premises.

Client project manager 2 (summarized personal communication, 2014)

Client project manager 2 mentioned that this business environment requires high levels of flexibility. The tender of projects does not always depend on the established long-term cooperation with Gefeba. Sometimes projects do not fit the specific niche within automatisation that Gefeba is specialized in. However, one central aspect to choose Gefeba over large competitors is the entrepreneurial environment that Gefeba is specifically good at creating. According to project manager 2, flexibility is a major aspect to choose Gefeba. The company is able to perform basic work from little to large mechanical works. At the same time, the company is able to be at the forefront of innovation through local adaptation to the requirement of the client. Moreover, Gefeba has developed more decentralization of responsibilities with staff being employed in offices on the client premises that are authorized to sign contracts for more cost efficient and accelerated business operations. This includes the ability to bow to client wishes with more client focus. In addition, client project manager 2 points out that Gefeba uses entrepreneurial ways of handling problem solving. Small projects are directly set up “while talking in the corridor”. In reference to this, Gefeba established high trust and works reliably. The quality of operations is very high and fits the requirements of the clients who ask for specific requirements for industrial work and safety management.
Brochure

The Brochure outlines the company profile and describes the close relationships that have been developed (2014, p.3), where highly qualified and motivated employees search for the ideal and individual solution customized to client expectations (Brochure, 2014, p.3). In reference to this, motivation and attitude on top of all routine and planned quality procedures is specifically mentioned, “in order to ensure precision and quality of products”. This way of thinking is integrated right from the beginning of the careers of the employees. This is further outlined stating that “every employee knows that he is significant to the success of the company” and creates “pride” within the company. Further, the emphasis on sustainability of quality standards for Gefeba’s products is presented (Brochure, 2014, p. 7). Further aspects that get specific attention in the brochure are “the technical expertise and excellence” of the company as well as the “fast and flexible reaction to client needs” as well as the execution of projects with “the highest reliability and optimal quality” (Brochure, 2014, p. 2). Regarding Gefeba’s philosophy and the balance of values and innovative drive the brochure states: “The high dynamic of technical developments is perfectly combined with traditional values of business management”. This is further explained by “the combination of technical top performance with consistency and reliability” (Brochure, 2014, p. 2). Apart from that, the brochure emphasizes the company’s training and development program that ensures the “technical generation change in know-how” (Brochure, 2014, p.2). Overall, the layout puts the highest emphasis on: Company profile and values, intelligent solutions through expertise, steel and iron as major branch or client references, quality certification and motivation and training and development of employees.

Quality Management Handbook (QMH)

The Quality Management Handbook provides as an internal document the code of conduct, strategy, values and practices at Gefeba. A central aspect is the client focus as the center of the company’s operations” (QMH, 2013, p.7). The handbook emphasizes that product innovation is an important aspect for ensuring client satisfaction, which enables Gefeba to “improve processes sustainably and with highest safety standards” (QMH, 2014, p. 9). Another aspect central to the Quality Management Handbook is the company’s values that cover business ethics, the responsibility for keeping the company’s reputation, respect, honesty and integrity when interacting with business partners through “open and honest” communication internally and externally. In reference to this, employees should “only promise what they are capable of delivering” (QMH, 2013, p. 10). This is further outlined when it comes to setting up “clear, challenging and realistic goals” where managers should provide “enough freedom and delegate responsibility to lower levels as much as possible on “the basis of trust”. Moreover, the importance of acting within legal and moral boundaries is mentioned, such as the non-acceptance of presents from business partners (QMH, 2014, p. 10).

When it comes to trust, traditional values in “business ethics, honesty and integrity, confidentiality and data protection” are internally communicated and refer to trustful and reliable behavior externally (QMH, 2013, pp.10-12). Success is defined through satisfied clients, satisfied employees and innovation deriving from motivated employees that act through “open communication” (QMH, 2013, p. 13). The handbook presents the importance of quality outlining the company’s “Quality certification for ISO 9001:2008 and SCC” and that “employees are required to integrate quality as a major competence in the daily activities in order to meet client satisfaction” (QMH, 2013, p.13). Regarding business relations, the handbook outlines the intensive collaboration with clients and the
“continuous improvement and adaption of internal processes to client needs” (QMH, 2013, p. 14). Strengths are pointed out as “keeping dialogue with employees, values, the use of high technical equipment and training and development of employees” (QMH, p. 15). Apart from that, the handbook outlines how employees are working with each other by “treating other with respect, accepting criticism without taking it personally, listening to client and colleagues without interrupting whilst questions are encouraged and should be answered goal oriented”. In reference to this, the explicit use of “knowledge sharing” is emphasized (QMH, 2013, p. 16). Regarding innovation and the use of processes, employees should “try to think out of the box” with explicitly stating that “mistakes can be made, but should not be repeated” (QMH, 2013, p. 17).

**Project examples (external documents)**

**Magazine “Stahl und Eisen” (2010)**
Gefeba accomplished “the modernization of a process control system within running operations for Germany’s largest steel mill” where Gefeba closely cooperated with the client to enable an “efficient project execution and long lasting effect on the optimization production processes in the steel mill” (Stahl und Eisen, 2010, p. 72).

**Magazine - Elektro Automation (2007)**
Gefeba has managed to implement renew the automatisation of an electrolytical coating plant for automobile plate with “high quality” and “record time” of only 9 months (Elektro Automation, 2007, p. 51). Through strong cooperation with Gefeba Elektro GmbH, a sustainable solution has been found for the automatisation of this plant with Gefeba bringing in the “specific expertise in the automation technology” (Elektro Automation, 2007, pp. 50 -51).

**Webpage (www.gefeba.de)**
Quality and reliability are mentioned as central topics: “intercompany cooperation and reliability in business partners to be flexible to tight time schedules and ensuring high quality standards” In reference to this, intensive quality controls are undertaken proven through certification published on the website. The company is presented through the main sections: company, services and references. Inter-company partnerships and “reliable partnerships” are emphasized. The major branch and client references are steel and iron and deliverables are outlined under “services”. The website is accessible in German and English. (www.gefeba.de)

**Direct Observation**
According Yin (2003, p. 92) direct observations serve as a source of evidence in case studies. In reference to this, the condition of buildings or workspaces may indicate something about the climate of the organization or the location of furnishings of the offices may be one indicator of the status of the status of the respondents within the organization (Yin, 2003, p. 92). In between the interviews we were able to get an impression of the work environment. In general, a respectful communication climate could be observed, given the fact that employees always greeted each other when meeting in the corridor. Employees approached the CEO with respect and the CEO mostly greeted and shook hands with employees on all hierarchical levels. The facility was very closely connected and the top management was situated in the middle of the building. There was a lack of direct communication and doors to top management and other hierarchical levels were open. It was quite remarkable to see other managers walking around the shop floor and collaborating with lower levels in a very intense and concentrated manner. The offices were very spacious and mostly 2-3 people were sitting
together in 1 room. The dress was rather business casual. Another aspect one could observe is the flexibility of scheduling meetings, which seemed to be a come in – come out availability basis. The values and communication policies outlined in the quality management handbook (2013, pp. 13-17) seemed to be put into praxis such as: respect, open-communication, being friendly and helpful etc. (direct observations, 07.05.2013)

The interviews conducted in the Gefeba Company gave a certain amount of results, as well as the other documents and observations gathered. Those results will now be analyzed in the following part.
6. Analysis

After the results, we will analyze the data gathered in Gefeba Elektro GmbH in order to have a better understanding of which organizational antecedents are used in Gefeba Elektro GmbH and also how the architectural factors are used in our case study.

6.1 Analysis of the organizational antecedents

6.1.1 Organizational antecedents of the architectural factors: strategy

As outlined in the thematic analysis, our next organizing theme is entrepreneurial strategy. According to the literature review, the following antecedents of corporate entrepreneurship were highlighted in the literature review and in the data gathered: innovation, entrepreneurial activity, and balance between exploration and exploitation.

Innovation

Firstly, we looked into innovation. In this high competitive market, all employees agree on the fact that innovation is the key of their success and that «they are nothing without it» (Project Leader B, 2014). The strategy of the firm is clearly to be the most innovative as possible, and not only in products that they propose but also in the processes inside the company in order to have innovative ideas (CEO, 2014). This theme of innovation is present in several sources. Indeed, the client managers emphasize on the fact that the company is at the forefront of innovation (summarize personal communication, 2014). Then, the Quality Management Handbook (2014), which is an internal document also underlines on the product innovation as a way to obtain client satisfaction. Both sources of information are corresponding to the elements that were found in the interviews that we conducted. Nonetheless, some obstacles are on the road of innovation. Every employee underlines the fact that the projects or the processes proposed to the clients are not always as innovative as possible, mostly because of the clients, as underlined in the literature review by Peltola (2012, p. 43). Indeed, the reasons are that clients and sometimes even employees of Gefeba are either conservative or afraid to change and do something wrong. The entrepreneurial thinking is then encouraged in several ways and supported by the top management but “every employee needs to live this” (CEO, 2014) and it is sometimes difficult for some employees (Commercial Director, 2014). The employees underline the fact that every level of the hierarchy is implicated in this entrepreneurial thinking; it “is lived throughout the entire organization up-to the lowest hierarchical level” (Technical Director, 2014). In fact, entrepreneurial thinking is developed through the business culture, the leadership style and the structure of the company. It leads to an entrepreneurial thinking, which is underlined by the client project manager (summarized personal communication, 2014). In fact, he is highlighting the reason to choose Gefeba over other competitors as this entrepreneurial environment that Gefeba is specifically good at creating. Moreover, concerning the innovation, it is crucial that ideas are shared through the company. Indeed, meetings are organized for employee and the top level of the hierarchy is leading them, according to the interviews (2014). Furthermore, Gefeba is open to ideas coming from external sources because others companies are invited to those meetings and they are also listening to the information of their suppliers on the market. To conclude, innovation is playing a central role in the use corporate entrepreneurship made by Gefeba by enhancing the creativity and the development of new products and processes.
Entrepreneurial activity

In the theoretical framework part, Burns underlines important attributes of a strategy, which lead to the development of the strategic planning process (2005, p. 169). The first step of this process is to have a vision for Burns. However, all participants agreed on the fact that there is no vision in this company, according to the American definition. The reason is that it is an "old style business" (Project Leader A, 2014) and that there is no vision in the American business sense but there is clearly a strategy, which gives a direction and is known by all across the organization. This direction is to concentrate on producing good quality products while being cost effective and our several sources are underlining this focus on quality and client satisfaction (CEO, 2014; Client Project Manager 2, summarized personal communication, 2014; Brochure, 2014, p. 7; QMH, 2013, p. 7; Webpage, 2014). This vision seems adequate for the context of a niche market with high competitiveness. Then, the second step for Burns is the strategic analysis, which aims to develop a sustainable competitive advantage for the company (2005, p. 169). According to the interviews, Gefeba Company is reaching to have a sustainable competitive advantage with several steps. First, they are “a step ahead” (Project Leader B, 2014) thanks to their innovation but not only. The second step of their competitive advantage is made by their focus on having good quality products and operations. The term “good quality products” is recurrent in all the interviews as well as in the internal documents (QMH, 2013, p. 7) and in the opinion of the clients (Client Project Manager 2, summarized personal communication, 2014). It means that the vision aimed by Gefeba is implemented inside the company but is also a reality for the clients. Moreover, another important point is the significance of the good and lasting relationship between employees and customers. Indeed, according to the interviews, the employees who are in direct contact with customers are aware of the significance of the good relationship with customers. The goal is of course to establish client contacts “that eventually can lead to business opportunities” (Technical Director, 2014) because the product life cycle is particularly high and relations with customers are playing an essential role in keeping the clients. Even, if those customers are sometimes feeling conservative about innovation, employees of Gefeba pay high attention at being force proposal and flexible for the clients. Then, the same elements are present in the other sources. The Client Project Manager 1 underlined the close relationship and trust, which was build with Gefeba throughout the years (summarized personal communication 1, 2014). This point is also emphasized in the Brochure (2014, p. 3) as well as in the QMH (2013, p. 7). Thereby, several sources are highlighting the importance for Gefeba of the quality of the relationship between employees and customers in a long-term perspective, which is coherent with the context of Gefeba Elektro GmbH. The third step of Burns theory is the strategy formulation (2005, p. 169). In order to formulate a strategy, according to the concept of Burns, Gefeba is collecting information from several channels, including their suppliers. The top management level is looking at the development of the market but even the Project Leader B is aware that they need to “diffuse the risks” by addressing others areas, such as steel for example, because of the context explained earlier. The last step of Burns is the implementation of the strategy, which is possible through the architectural factors of leadership, culture and structure that we identified. Indeed, the feeling of the interviews is that every level in the company is well aware of all those architectural factors of the company. The reason is not only because they are working in Gefeba since many years but more because employees are considered as “assets” (Project Leader B, 2014) and treated as such in
order that they develop themselves within the company. The study of the entrepreneurial strategy help us to understand that the market’s context leads to apply a entrepreneurial strategy in order to take initiative, to innovate, and to be force of proposal for the clients and for the company.

**Balance between exploration and exploitation**

Finally, according to Morris et al. the strategy is a balance between exploration and exploitation (2009, p. 434). About the exploitation, ideas are shared and applied as often as possible. Indeed, every employee underlines the fact that the exploration of innovation and its exploitation are encouraged. However, some of them points out in the interviews (2014) the fact that if the reward system is not encouraging enough innovation, as it seems to be the case, then employees are prevented to innovate in order not to do something wrong. Another obstacle is the fact that clients are sometimes conservative. Concerning the exploration, every employee is encouraged to find new products but also new processes to work more efficiently together. In conclusion, several sources underlined the role of exploration and exploitation in Gefeba Elektro GmbH, and the fact that a balance exists between both. Indeed, every level of the hierarchy and employees are aware that they have to be innovative while being cost-effective and efficient with the clients in the same time. This is confirmed by the documents provided by the firm such as the Brochure (2014, p. 2) but also the internal documents (QMH, 2013, p. 7) and the appreciation from the clients (Client Project Manager 2, summarized personal communication, 2014).

*To conclude, Gefeba Elektro GmbH uses the organizational antecedents of the architectural factor of strategy in several ways in order to implement its own corporate entrepreneurship considering the requirements of the market. Those particular aspects are innovation, client satisfaction and quality focus, as well as building the relationship in a long-term perspective. We found a match about those aspects between the several sources of data that we had, inside or outside the organization.*

6.1.2 Organizational antecedents of the architectural factor of HRM practices and leadership

As outlined in the thematic analysis, our next organizing theme is entrepreneurial leadership. Several organizational antecedents concerning this factor were discussed in the literature review and a complete list of the antecedents is presented in the Appendix 2. Considering the amount of antecedents and sometimes the fact that they are repetitive between the authors, we chose to present the analysis with the different themes of entrepreneurial leadership. However, the thematic network analysis was made with each antecedents presented in the table of the thematic network analysis, and this thematic presentation is just a matter of comprehensiveness for the reader.

**The relations between employees and their managers**

The literature review underlines several aspects when it comes to the construction of the relationships between employees and their managers in order to diagnose corporate entrepreneurship. Several authors wrote about this broad subject and the antecedents found were presented in the literature review, while now, we will analyze the antecedents existing in the Gefeba Elektro GmbH according to the data gathered. One of the first antecedents of entrepreneurial leadership was the proper communication between the different hierarchical levels, underlined by Burgess (2013, p. 196). In reference to this, the views of all participants are quite coherent. The CEO emphasized
the proximity between employees and the top management and the direct contact, which is perceived similarly on other business levels and was also perceived by the direct observation with the open-door policy and the communication between employees (2014). The technical director talks about *very close and personal contact between employees that even reaches to the top management*” (2014). This Remarque is also coherent with the QMH when the values of the firm are indicated and when the quality of the communication between employees is underlined (2014, p. 13).

Related to the communication is the type of relationship asked between the employees themselves, and between the employees and the management. This point was added to our analysis after gathering the data, thanks to our abduction strategy. When it comes to the relation between the employees, there are several essential values that have to be respected and followed according to several data. Indeed, in the QMH, it is stated that employees have to work with each other by “treating other with respect, accepting criticism without taking it personally, listening to client and colleagues without interrupting whilst questions are encouraged and should be answered goal oriented” (2013, p. 16). Those values are coherent with the direct observation that was made during the visit of the company (07.05.2014). The same observation can be made about the relations between the employees and their managers. Indeed, this is also reflected when it comes to leading, where management “*does not overrule*” and there is “*trust and support*’” as stated by the CEO evidenced by the fact that everyone mentioned the proximity to management. This term ‘trust’ is coherent between several documents and is underlined in the QMH, when managers have to let autonomy to the lower levels on “the basis on trust” (QMH, 2013, p. 10). This term seems also significant to the climate inside Gefeba Elektro GmbH, reflecting the cohesion of the organization against the highly competitive market.

**Autonomy, collaboration and teamwork.**

Related to this trust is then the aspect of autonomy, also underlined under the antecedents named work discretion. Regarding the delegation of authority, authority is broken down and allocated, which is evidenced by the integration of a technical director as a bridge between top management and Project Leaders. The autonomy seems very important for this company as stated in the internal documents such as the Quality Management Handbook. Managers are encouraged to provide enough freedom and delegate responsibility to lower levels as much as possible (QMH, 2013, p. 10). The time availability for projects seems to be flexible and autonomous, since “*every one has kind of it’s own way*” of realizing projects(Project Leader A, 2014). The clients themselves and the Brochure also underline this aspect of flexibility. Indeed, in the Brochure (2014) and in the summarized personal communication of the clients (2014), the flexibility is considered as a major aspect to choose Gefeba Elektro GmbH.

Linked with the previous values underlined for the relationship in the company, there are also the notion of teamwork and collaboration. Concerning the teamwork, this aspect was particularly underlined by the interviews. Indeed, it is project teams, which develop projects inside the company (Commercial Director, Interviews, 2014). The Direct Observation allows corroborating those arguments by highlighting the intense links between every level of the company, and moreover when managers are walking around the shop floor and collaborating with lower levels (07.05.2014). Added to this notion of teamwork, the notion of collaboration seems also important. The collaboration exists inside the company itself. Regarding venture teams for example, “*that are*
focused on specifically enhancing innovation and entrepreneurial behavior, such as creativity” the company cooperates with project developers and top management supports education, advanced training and strategic alliances (CEO, 2014). The Project Leaders also value this: “if you don’t use the workshop, (…), people don’t communicate between teams” (Project Leader A, 2014). Apart from that, an entrepreneurial climate is also created by the fact that discussions are cross-functional and employees help each other on a face-to-face basis in a project-based exchange of knowledge (Technical director, 2014). The collaboration is also considered as intensive with the clients according to the QMH (2013, p. 14). This is corroborated by the personal communication with Client Project Manager 1 and 2 by enhancing the daily interactions and the high reliability of their relationship (2014). This aspect could also be related to the intensity of the context of Gefeba and the fact that the relationship with the clients is a way to differentiate the company (Toften & Hammervoll, 2009, p. 1381).

**The support of the management**

Then, another antecedent, which is underlined in the literature review, is the support of the hierarchical levels and in particular the top management level. The support from top management is becoming obvious when Project Leader B describes that the management is taking time to listen to the employees concerns and that those employees are fostered, which is also one of the requirement of the QMH (2014, p. 13). However, the commercial director also emphasizes the difficulty of maintaining this intense relationship, due to the growth of the company (2014). The aim of this management support is linked with the notion of work discretion by fostering the risk-taking attitude and the tolerance for failure as well as the delegation of authority said previously. When referring to those aspects, it is clear that each company is looking for its own balance between freedom and control. This fits to Morris et al. (2009, p. 436) view that leaders need to balance control and freedom and provide a framework that allows opportunistic flexibility with policies and procedures that serve as boundaries. The CEO (2014) repeatedly emphasizes the importance of encouraging employees within control mechanisms or “certain frameworks and procedures”. Since the company is growing control mechanisms are becoming more and more important, which highly stressed by the commercial director (2014), who also justifies this view the implementation of the technical director as a bridge between Project Leaders and top management.

Regarding failure, there seems to be a coherency of how mistakes are handled. All participants show that mistakes can happen, but they also state that they should not happen again. This is coherent with the QMH saying, “mistakes can be made, but should not be repeated” (2013, p. 17). A second chance philosophy is showing management support towards failure tolerance, but with a certain amount of control. Where the Project Leaders rather focus on the control part: “you have to pay attention”, the top management (CEO) and middle-management (technical director) rather explain the advantages: “The employee learned something, he is more valuable due to this experience” and “we are dealing rather transparent and open with this issue”. The aspect of staff training is essential and underlined in the interviews, however, there are boundaries and one can argue that Project Leaders rather pay attention, which hinders risk-taking behavior devoted to entrepreneurial activity.

Regarding risk-taking, on the one hand there is a strong expectation to take risks, to show initiative, to think entrepreneurial and to be innovative (Commercial Director, 2014; QMH, 2013, p. 17). On the other hand, the Project Leaders A & B (2014) stress
the need for transparency and honesty with the top management in order to be supported. It is underlined by the term ‘trust’ and ‘open-communication in the several documents (QMH, 2013, p. 12; Direct Observation, 2014; Client Project Manager 2, Summarized Personal Communication, 2014). In accordance to this, there seems to be the initiative of top management to foster entrepreneurial behavior, but within boundaries, such as to communicate early enough when problems occur (Project Leader B, 2014), but also the legal and moral boundaries (QMH, 2013, p. 10). However, the top management support towards developing innovation is by some participants argued to be influenced by the company’s growth (Commercial director, 2014).

Related to this aspect of management support and work discretion is the notion of staff selection and rewards and reinforcements highlighted in the literature review. Indeed, in the interviews it is clear that the staff selection is essential because employees will become part of a team and then they have to possess an adequate personality, which will fit the values and the way to work of the company (Project Leader B, 2014). However, this integration’s process is more and more difficult because employees are facing a lack of time to form the new employees (Project Leader B, 2014). Concerning the staff rewards and reinforcements, the financial rewards are currently calculated on the basis of the projects won by a project team (Project Leader B, 2014) However, the Human Resource Management of Gefeba Elektro GmbH is considering to add a variable, which should measure and emphasize innovation in order to foster it (Project Leader B, 2014).

**Common values and beliefs**

After focusing on different aspects of the leadership in CE, it seems essential to underline the role of the common values and beliefs in Gefeba Elektro GmbH. The term values are recurrent in the different documents gathered from the company, and between the architectural factors. This last point highlights the fact that architectural factors are interwoven and dependent, and that corporate entrepreneurship is embedded in the entire organization. In the Brochure, the traditional values of the business management are cited as being applied with Gefeba Elektro GmbH (2014, p. 2). Moreover, the weight of those values is preponderant in the internal documents. In the QMH, the company’s values that cover business ethics, like the company’s reputation are highlighted as being the center of the relation with the clients. Furthermore, the values of respect, honesty and integrity are required to the core of the client’s relationship because the basis of those relationships is the trust (2013, p. 10). Moreover, the values between the employees are also an essential point such as respect, accepting criticism, listening without interrupting or answering the questions (QMH, 2013, p. 16). We can see that this code of conduct is identifying more company’s values than just the moral and legal boundaries, which are also cited (QMH, 2013, p. 10). This point was also observed during the direct observation (07.05.2014) because employees were showing respect, open-communication, friendliness, and helpfulness and the others values described in the QHM (2013). To conclude it appears that those common values and beliefs are the glue between the employees and also for the relationships with the clients.

Moreover, to conserve those values the selection and training of the employees is considered as one of the key success factor of the company. Especially since they do not have time as previously to trained the employees (Project Leader B, 2014). However, the selection of the employees reflects the necessity for the firm to concentrate on the common values as a key success factor. Indeed, they are looking for a ‘personality’ and
not an anonymous employee. The employee is considered as an asset, is part of the company and participates to the growth and the success (Commercial Director, 2014). Another interesting point in Gefeba Elektro GmbH is the fact that the job position of the HRM director is not its only function. The article of Schmelter et al. underlines the fact that SMEs are facing a lack of resources and that it has consequences on the HRM practices (2010, p. 719). In Gefeba Elektro GmbH, the HRM practices are split between the commercial director and the Project Leaders. It is a choice of the company concerning its structure in order to facilitate the autonomy and the flexibility of the employees (Commercial Director, 2014). However, we can also suppose that it allows the company to compensate the lack of resources for HRM practices. Thereby, in order to succeed when facing this lack of resources, it clearly appears that the common values of the company are strong and shared by every employee. Moreover, the role of the personality of each employee as a way to implement and develop CE is crucial.

6.1.3 Organizational antecedents of the architectural factor of the culture

As outlined in the thematic analysis, our next organizing theme is entrepreneurial culture. According to the literature review, 5 basic themes can be used for corporate entrepreneurship: common values and beliefs, power distance, uncertainty avoidance, collectivism vs. individualism, femininity vs. masculinity.

Common values and beliefs

As said previously, the common values and beliefs are the glue between the employees and as part of the culture; it participates to a sign of identity and a way to differentiate and overcome the difficulties of the highly competitive market. It is adequate to highlight the fact that the common values and beliefs are an intensive subject in the documents and are also part of the culture as an architectural factor. Indeed, the QMH underlines the “company’s values” that have to be respected and fostered (2013, p. 10). It concerns the relationships between the employees but also with the clients. For example: employees should “only promise what they are capable of delivering (QMH, 2013, p. 10). The term “traditional values” exists also in the Brochure (2014, p. 2). Moreover, concerning the entrepreneurial and innovative behavior, it is fostered by top management in several ways and expected from every employee. This becomes obvious when referring to the implementation of workshops in order to promote idea and knowledge sharing. The close and personal contact is also a factor playing a role when it comes to idea sharing, since it “facilitates knowledge sharing and awareness of the other employees skills and expertise” (Technical director, 2014). This aspect of knowledge sharing is also directly underlined in the QMH (2013, p. 16). There are also commonalities when it comes to failure management, since all participants state that mistakes are tolerated as long as they are communicated transparently and not done twice (Interviews, 2014; QMH, 2013, p. 17). The risk taking is encouraged and also expected (Commercial Director, 2014), but control systems might hinder employees to act as desired. Apart from that, the introduction of the new evaluation systems helps to strengthen the expectations of employees, since it brings supervisor and subordinate together (Project Leader B, 2014). To resume, regarding Gefeba, there is a coherency when looking at common values and beliefs within the company because it forms a global coherence between the different architectural factors.

The Hofstede’s concepts by Burns for CE

Low Power distance: As outlined by Burns, an entrepreneurial culture is characterized by low power distance, meaning an egalitarian organization with flat hierarchies, open
and informal relationships and information flows (2005, pp. 122-123). We can see that there is a low power distance. Top management keeps open and informal ways of communication; the distance between hierarchical levels is very low. This aspect was corroborated during the interviews (Project Leader B, 2014; CEO, 2014) but also by our Direct Observation (2014). Those documents underline the fact that the management’s bureau is accessible without even having a formal open-door policy. Moreover, “management is taking time to listen to the employees concerns” (Project Leader B, 2014), which builds trust and increases cooperation. It is also a requirement of the QMH concerning the behavior of employees (2013, p. 13). However, as stated by the commercial director (2014), Gefeba’s growth is making it difficult to maintain this personal contact without “new information mechanisms and hierarchical levels”. This aspect is particularly important in the context of Gefeba, when any information is a potential help for innovation, in order to differentiate in the highly competitive market.

**Low uncertainty avoidance:** For Burns, in an entrepreneurial culture, flexibility is given and risk-taking is tolerated whilst initiative is rewarded. Gefeba neither has a low, nor high uncertainty avoidance (2005, pp. 122-123). On the one hand, flexibility is given since “each manager has a large flexibility to manage the projects” (Project Leader A, 2014) and it is also presented in the Brochure as a requirement (2014, p. 2). The flexibility is an important point for Gefeba Elektro GmbH because it is a way to work, which is considered as a competitive advantage for the clients (Client Project Manager 1 and 2, Summarized Personal Communication, 2014). Furthermore, risk-taking is desired as pointed out by the Commercial director (2014): The employee needs to try things and needs to think entrepreneurially and be innovative and take risks. Otherwise you do not have profitable projects”. It is also underlined in the QMH when employees should “try to think out of the box” (2013, p. 17). On the other hand, expectations regarding risk-taking need to be reflected in high tolerance for failure. The second chance rule is kind of a mid-way between control and flexibility. Some employees might pay too much attention after having done a mistake (Project Leader A, 2014), even if they are encourage to not taking criticism personally (QMH, 2013, p. 17). The aim of this aspect is to foster innovation, which is significant in this type of market for Gefeba Elektro GmbH.

**From individualism to collectivism:** As outlined by Burns in entrepreneurial culture the cooperation and the development of relationships and networks is valued and a strong cohesive group is formed that has a strong identity in relation to the out-group or competition(2005, pp. 122-123). Gefeba is matching this view, since there are cooperation and development networks to share knowledge and ideas, enhancing creativity, such as the knowledge-transfer meetings. This notion of network is emphasized in the literature review and exists in the data gathered under the term knowledge sharing and collaboration. Those two terms exist either in the interviews (Project Leader B, 2014) or in the internal documents (QMH, 2013, p. 16). It is exemplified by the strong identity within the company has been build through close relationships and this may also explain the very cohesive view on integrating and developing new employees and regarding employees as assets with their know-how” (Commercial Director, 2014). This fosters the in-group and facilitates cooperation and knowledge sharing. Moreover, this concept of network is also presented about the relation with the clients. Indeed, Project Manager 1 underlines the competitive advantage Gefeba acquired throughout years of close cooperation (Summarized personal communication, 2014), which is an important aspect in the highly competitive
market. This intensive close cooperation is also presented as a requirement in the QMH (2013, p. 14)

**Balancing femininity and masculinity:** For Burns, an entrepreneurial culture needs to be a combination of masculinity aspects of achievement and individual problem solving against out-groups and cooperation, networks and relationships within the in-group (2005, pp. 122-123). Regarding masculine aspects of individual initiative and opportunity seeking, the management wants to lead employees towards handling this relationship with the clients by “training our employees regarding negotiation skills and the development of defense strategies in the contract formulation” (Commercial Director, 2014). However, constraints regarding this behavior derive either from the clients who often do not want to switch to new technologies or the employees themselves who prefer to avoid risk-taking (Project Leader A). In accordance to this, the top management is aware of the need to encourage risk-taking, but is simultaneously aware of the importance of keeping feminine aspects of keeping client-relationships and encouraging cooperation. Feminine aspects fostering the in-group can also be seen by the change to improve integration and development of new employees as well as the increasing collaboration between supervisor and subordinate regarding the evaluation system.

**Organizational Learning**

An essential aspect of the culture, highlighted by the literature review as well as the data is the organizational learning. In the literature review, the organizational learning includes “a commitment to learn, open-mindedness and a shared vision of learning” (Hyvönen & Tuominen, 2006, p. 649-650). Then, it concerns the training of the employees, which is a requirement in the Brochure through the motivation, training and development of the employees (2014, p. 2). This staff training is an important aspect about knowledge sharing because it allows the company to acquire knowledge throughout years of experience with the company, which is highly appreciated by the clients (Project Manager 1, Summarized Personal Communication, 2014) and then corresponds to the need of the market. Moreover, it allows the company itself to improve the process and to foster innovation by sharing this knowledge inside the company and acquiring an expertise (Magazine Elektro Automation, 2007, p. 50). The knowledge sharing was already approached in the entrepreneurial leadership part, which shows the porous frontiers between architectural factors but also its significance in the context of Gefeba Elektro GmbH.

6.1.4 **Organizational antecedents of the architectural factor: structure**

As outlined in the thematic analysis, our next organizing theme is entrepreneurial structure. We will investigate the following three basic themes in order to know how Gefeba uses the antecedents of corporate entrepreneurship concerning the entrepreneurial structure: organic structure, balance between autonomy and restriction, and organizational boundaries.

**Organic Structure**

First, we concentrate on the theory of Burns& Stalker (1994, p. 121). According to those authors, to address the issues faced in a highly competitive environment, it is important to have an organic structure. The attributes of an organic structure are a limited hierarchy, flexibility and decentralization. In the case of the Gefeba Company, we first observe a limited hierarchy with several aspects. Every employee is in fact
saying that the communication with all level of the hierarchy is encouraged, thanks to an “open door policy” (Project Leader A, 2014). The antecedent of time availability coming from the literature review also exists through this policy. Moreover, the size of the company and the buildings allows employees to know each other and to be able to see each other regularly in the buildings (Projects Leader A, 2014). Project Manager 2 also underlines this aspect because they can set up a project “while talking in the corridor” (Summarized Personal Communication, 2014). In addition to that, employees are flexible in terms of working hours and decision-making process. A framework is salient, as said by Project Leader A: “we discuss before making a decision” (2014). However, the decision-making is allocated to employees, in particular those who are in contact with the clients (Commercial Director, 2014). The clients are corroborating this aspect because they appreciate the high flexibility of the employees and the decentralization of responsibilities (Client Project Manager 1 and 2, Summarized Personal Communication, 2014). This way of doing allows each team to adapt to every client or to every change rapidly with efficiency, which leads to the high quality of operations (Client Project Manager 2, Summarized Personal Communication, 2014) aimed by Gefeba (QMH, 2013, p. 7; Brochure, 2014, p. 3). Moreover, the budget of each project is also let to the responsibility of each project manager (Project Leader A, 2014). The goal is to enhance employee to have autonomy, cost-effective, innovative and goal-oriented (Commercial Director, 2014). It leads to the conclusion that the decision-making process is decentralized. Burns & Stalker add further attributes such as extensive personal interaction, informal communication channels and procedures, authority based on expertise rather than role and teamwork as being the norm. Concerning the interaction between employees, the easy and direct communication facilitates the relations between each other and between the different units of the company (QMH, 2013, p. 13; Direct Observation, 2014). As said earlier, relations are more informal than formal, with staying respectful (Direct Observation, 2014). The place in the hierarchy comes from the level of expertise of the field of the work but also of the company. The CEO for example has a background of technical engineering, which illustrates the fact that authority is given by expertise and years of experience into the company. Moreover, teamwork is the rule inside Gefeba; it is a “project-based structure” according to the CEO (2014). Each project is even seen as “a company within the company” (CEO, 2014), which underlines the autonomy of Project Leaders. This project-based structure comes from the fact that Gefeba is addressing projects and not directly products, which is a solution underlined by Toften & Hammervoll as being effective in this type of market (2009, p. 1381). However, other reasons explained the reality of teamwork inside Gefeba. As said by Project Leader A, teams are formed according to the relation between employees but also with the clients (2014). There is certain flexibility in forming the team inside the employees themselves. The goal is to have willing employees, efficient and having good relationship with the clients when they are in a team. In conclusion, Gefeba is using some of the antecedents of an entrepreneurial structure by enhancing flexibility, efficiency and having a decentralized decision-making process.

Balance between autonomy and restriction

Morris et al added another theory about entrepreneurial structure (2009, p. 439). Those authors are underlying the importance of a balance between autonomy and restriction. There are several keys for this balance. One of them is a well-communicated strategy, which is the case as said in the strategy analysis. Another key is that there is globally a balance between incentives and the security of failure. Failure is handled with
discussion and comprehensiveness from the direction, and a mistake does not justify questioning the entire company as underlined by the CEO (2014). Moreover, it is explained in the QMH that mistakes can be made but not repeated (2013, p. 17). Concerning the reward system, some employees are underlining the fact that this system is maybe not enough appropriate in order to foster innovation. But the direction is conscious of this weakness and they are willing to undertake this (CEO, 2014). In addition to that, a certain amount of flexibility is left to employee in order that they are responsible of projects but also of training and development of their team, and even of the “signature” (CEO, 2014). This aspect is highly appreciated from the client’s perspective (Client Project Manager 2, Summarized Personal Communication, 2014). However, it does not mean that there are not “certain framework and procedures” (CEO, 2014) in order to frame this flexibility. In conclusion, we can say that there is a clear balance between autonomy and restriction in Gefeba, which creates and supports corporate entrepreneurship and is adapted to the context. Some weaknesses were underlined but the direction of the company is conscious of them and is trying to address them.

Organizational Boundaries

Hornsby et al. mentioned another aspect about structure in order to have an entrepreneurial structure, which can create and support corporate entrepreneurship (2011, p. 119) in this particular context. In fact, the role of organizational boundaries seems essential for those authors. As explained earlier, the relations between the different levels of the company are informal and not really strict. It means that information is circulating easily between the different level of the hierarchy with efficiency and rapidity. However, organizational boundaries are always present in order to guide the action and the goals of the employees (Technical Director, 2014). The hierarchy is also there to control and decide for all the company and in a more long-term perspective. As seen in the interviews, for example with Project Leader B, the employees are concerned and informed about the decisions of the company taken by the direction (2014). Moreover, the direction is considering the employees as “assets” (Project Leader B), which allows modeling the structure according to the employees and not only the market. In conclusion, the organizational boundaries are creating and supporting corporate entrepreneurship inside Gefeba Elektro GmbH by developing flexibility and organizing the flow of information within the company.

This part about the structure as an architectural factor underlined the role of the employee in the building of the structure of each organization. Nonetheless, it is essential to add that the structure is only one element, which is creating and supporting corporate entrepreneurship. As already explained, the architectural factors are interwoven and interdependent of each other.

To conclude, Gefeba Elektro GmbH is using several antecedents of corporate entrepreneurship in order to implement this concept inside the company. Moreover, the analysis through the architectural factors allows understanding how each aspect of the company is collaborating in order to implement those different antecedents. Beside, some antecedents were added from the data such as the common values and beliefs in the leadership part. The reason is because we used a structuring type of qualitative analysis, which allows us to gather the terms of the categories from several sources. One of the sources is the terms employed in the empirical results. In this case, the interviews but also the internal documents clearly underlined the role of the common
values and beliefs in the cultural factor of the company but also in the leadership factor of the company.

Furthermore, several points need to be highlighted after the analysis part. First, according to the interviews and the several documents, employees of the different levels of the company are accepting and participating at the construction and the development of the structure of the company. It allows us to emphasize on the role of the personality of each employee and the role of each employee in implementing and developing CE. Second, the common values of Gefeba Elektro GmbH are influencing each architectural factor and the behaviors of the employees towards the goal of the company. Third, the term flexibility is essential and seems to be the goal of the company, when it stays inside the given framework.
7. Conclusion and Recommendation

Considering the research question and purpose of this study, this chapter will draw conclusions and provide recommendations. The chapter will finish with limitations and tracks for future researches.

7.1 Conclusion

We examined the subject in the context of a medium-sized enterprise in a specific environment where corporate entrepreneurship is vital in order to answer our main research question:

How does Gefeba Elektro GmbH use corporate entrepreneurship in the process automation industry?

We developed three different purposes linked to our research question, and we will now develop our conclusions according to each purpose.

7.1.1 Reveal the organizational antecedents used by Gefeba Elektro GmbH

The first purpose of this thesis was to reveal which organizational antecedents are used by Gefeba Elektro GmbH in order to develop CE. As explained earlier, we will draw conclusions through the lenses of the architectural factors by focusing on strategy, leadership, culture and structure in order to facilitate the comprehensiveness of our subject and to follow our findings in the literature review.

The organizational antecedents for the architectural factor of strategy

We found that the Gefeba Elektro GmbH is using an entrepreneurial strategy in order to gain a competitive advantage. Indeed, according to our findings, Gefeba Elektro GmbH is using the antecedents of an entrepreneurial strategy, which is one of the four architectural factors of corporate entrepreneurship. We described in the analysis the several antecedents of corporate entrepreneurship that existed in Gefeba Elektro GmbH, such as the strategic process of Burns (2005, p. 170) as well as the balance between exploration and exploitation described by Morris et al. (2009, p. 434). Moreover, we added the antecedents of innovation, as it seems essential with the collection of the data. Every organizational antecedent that was described exists in Gefeba Elektro GmbH and was found by the several documents that we gathered.

The organizational antecedents for the architectural factor of leadership

Concerning the entrepreneurial leadership, the antecedents were numerous. The antecedents from several authors explained in the literature review were used in Gefeba Elektro GmbH. The findings indicate that the employee is the center of the attention for Gefeba Elektro GmbH, as it is considered as an asset. Furthermore, an essential point is that what seems to be really important in Gefeba Elektro GmbH and, which was not so present in the literature review, is the importance of the company’s values and beliefs. It is naturally linked with the culture, but it is important to underline this aspect in the entrepreneurial leadership part because the presence of those elements was doubtless in our findings and was highlighted in our empirical results. We used the possibility to structure the categories of our analysis by using the terms of the empirical results in order to underline this aspect.
The organizational antecedents for the architectural factor of culture

The entrepreneurial culture possesses several antecedents of corporate entrepreneurship. Our findings allow us to diagnose the balance between individualistic and collectivistic orientation (Morris et al., 2009, p. 432), as well as the four elements of Burns (2005, pp. 122-123). Moreover, the organizational learning was an important antecedent in the data gathered. The analyze of entrepreneurial culture allows us to emphasize the use by Gefeba Elektro GmbH of the entrepreneurial culture as a link between the employee and as a possibility to keep and share the knowledge, which is used as a competitive advantage. In this part also, the common values and beliefs were a significant aspect, while the flexibility and quality for the clients were also underlined as essential.

The organizational antecedents for the architectural factor of structure

Concerning the entrepreneurial structure, it showed several antecedents for corporate entrepreneurship. In fact, Morris et al. (2009, p. 436) describe the fact to have a balance between being autonomous or restrained. Then, Burns & Stalker considered the attributes of the organic structure as fitting the entrepreneurial structure. Moreover, the time availability from Hornsby et al. (2008) as well as the organizational boundaries from Hornsby et al. (2011, p. 19) was analyzed in the context of Gefeba Elektro GmbH. The main aspect of the structure concerning Gefeba Elektro GmbH and according to our findings is the term flexibility. This antecedent seems to be the main aspect to be used by Gefeba Elektro GmbH and appreciated by the clients. It exists in the company’s values and beliefs and is reflected in the behavior and in the entrepreneurial structure.

To conclude about our first purpose, the organizational antecedents that we described in the literature review were found in the empirical results. However, there are some organizational antecedents that were added in the analysis because they were present in the data that we collected. The organizational antecedent of innovation was added in the architectural factor of the strategy. The organizational antecedent of the common values and beliefs, which was already present in the culture’s architectural factor, was added in the leadership factor. Furthermore, some organizational antecedents are present numerous times in the findings and in several architectural factors. Indeed, the organizational antecedents of flexibility and common values and beliefs are emerging from the analysis of the first purpose as essential organizational factors in Gefeba Elektro GmbH.

7.1.2 Determine the role of the architectural factors

The second main purpose of our thesis was to determine the role of the architectural factors in the development of CE in Gefeba Elektro GmbH. Our findings indicate that every architectural factors composed of the antecedents of corporate entrepreneurship is used by Gefeba. However, some organizational antecedents, and then some architectural factors seem more important than other. There are two aspects in particular that emerged from our analysis.

The first aspect, which was not presented as much in the literature review is the common values and beliefs of the company, which are present in the leadership’s and culture’s architectural factors. Those values and beliefs seem to guide the architectural factors towards the same goal. Moreover, those common values and beliefs are leading the actions and the decisions of the employees and of the company as itself. The common values and beliefs are acting as a framework and despite the lack of resources;
the architectural factors seemed coherent between each other’s because those common values act as glue between employees and also with the relationship with the clients.

The second aspect that we can underline is the key term of flexibility, which is present in the structure’s, culture’s and leadership’s architectural factors. This antecedent is present either for the employees or for the clients and is clearly a competitive advantage for the last one according to the empirical results. The flexibility exists in the common values of Gefeba Elektro GmbH and is also possible because this glue is strong inside the company.

The same architectural factors of leadership and culture are present with flexibility as they were with the common values and beliefs. Thereby, it seems that those two architectural factors in particular are essential for the development of CE in the company. Moreover, every architectural factor plays a role in building an organization. In our case study, each architectural factor seemed to be oriented towards the main goals of Gefeba Elektro GmbH: focus on innovation, client satisfaction, quality, reliability, flexibility and common values and beliefs.

7.1.3 Determine the specificities of our case study as an SME

Third, our last purpose was to investigate the particular case of an SME and determine which specificities of organizational antecedents or architectural factors are linked to SMEs.

What we inferred from the previous findings about the organizational antecedents and the architectural factors is that the common values and beliefs from one side and the flexibility from the other side are two parts of the same balance. Indeed, the common values are acting as a framework, so as a control mechanism, while flexibility aimed the entrepreneurial spirit linked with innovation. The balance of Gefeba Elektro GmbH is certainly unique and underlined one aspect in particular that we did not found in the literature review: the importance of the company’s values and beliefs as a framework and the role of the flexibility in order to complete the balance of those two notions.

We found this balance to be very significant of the case study of Gefeba Elektro GmbH and a source of inspiration for others SMEs facing the same context of a highly competitive niche market. Indeed, those findings are coherent with the specificities of an SME for several reasons. We underlined in the literature review the fact that SMEs are companies that are flexible. In terms of bureaucracy as in terms of structure, their size and their development allow SMEs to be more flexible than larger companies. This is particularly important in the process automation industry due to the specificities of the demand of each client and the high competitiveness of the market as explained previously in this study. Furthermore, facing a lack of resources and less economies of scale, it seems coherent that SMEs reply on their values and beliefs. In reference to this, these efforts do not require large investments to develop and is further facilitated due to the proximity of employees within the office building. As previously said, the main competitors in this industry are large multinational companies. Thus, by developing an aspect which takes advantage of the structure of an SME, Gefeba exploits the structure as an advantage. This aspect could be replicated by other SMEs facing the same context.
Another important aspect to highlight is the role of the employee in the organization as being the center of those organizational antecedents in relation to architectural factors. Indeed, the employee is crucial if not fundamental for the implementation and development of CE. The employee, when considered as an asset is a driving change for the company. In a highly competitive market conditions change so rapidly that companies need sustainable solutions that are unique. Thereby, the employee seems to be the center of that unique solution. This aspect is coherent with the fact that companies are more and more considering employees as valuable assets. In fact, the personal development of the employees in their job has an increasing interest in the research and on the job market. This aspect is not particular to the automation process industry. However, this industry in requires highly qualified employees with strong expertise. That is why, the value of employees increases and is crucial for this industry.

7.2 Quality criteria

There are important criteria to establish and assess the quality of research in a qualitative research. Those criteria are considered as different from the quantitative research by several authors (Bryman & Bell, 2011, p. 394). According to Stenbacka, there are four generally accepted quality concepts: validity, reliability, generalizability and carefulness (2001, p. 551). The first criterion, the validity is “achieved when using the method of non-forcing interviews with strategically well-chosen informants” (Stenbacka, 2001, p. 552). This is the case in our thesis because first we asked participants if they wanted to participate. They were informed about the goal of our thesis and the question that we will ask few weeks before the interviews. Then, we repeat again that information the day of the interviews in order to be sure that they know precisely what they are participating in. Moreover, we chose the respondents carefully for our study because we wanted to have an overview of the implementation of corporate entrepreneurship in the entire company. That is why we asked the company to be in contact with employees from different levels in the hierarchy in order to have different sources of information for our thesis. The second criterion is reliability but according to Stenbacka: “If a qualitative study is discussed with reliability as a criterion, the consequence is rather that the study is no good” (2001, p. 552). Rather than using reliability as in quantitative research, “a thorough description of the whole process, enabling conditional intersubjectivity, is what indicates good quality when using a qualitative method” (Stenbacka, 2001, p. 552). To fulfill this criterion, we described in details our methodology and data collection method chapter in order that other researchers could compare and approve them. By doing so, we lead to this aim of intersubjectivity.Concerning the generalizability, “the results in a qualitative study are intended to be general in respect to theory, not to population” (Stenbacka, 2001, p. 552). That is why the term analytical generalization is relevant in qualitative research (Stenbacka, 2001, p. 552). It means “analytical understanding is made possible as a result of the study by lifting the empirical material to a general level, where analysis of people’s behavior is made possible with the purpose of understanding their motivations” (Stenbacka, 2001, p. 552). We aim to fulfill this criterion thanks to a careful analysis of the interviews and the other documents, which leads to results where we try actually to understand the behavior of the respondents. Finally, the criterion of carefulness is “always relevant, no matter the type of research” (Stenbacka, 2001, p. 553). It is made possible for qualitative researcher by being the most careful and systematic in “making the process conscious for him-/herself in order to describe it in the presentation of the study” (Stenbacka, 2001, p. 553). Our pre-understanding parts
fulfilled this criterion by explaining the pre-understanding that we had about our subject and by making the reader and us aware about the bias that we could have in the research.

7.3 Managerial Implications

With this study, we are expecting to analyze the possibility for companies to use certain aspects of corporate entrepreneurship. Our case study was taking place in a particular context and the company was also interesting because the aim was not to use corporate entrepreneurship as a corporate strategy. However, this company was successful by utilizing some aspects of corporate entrepreneurship in order to gain a competitive advantage. The findings of our case study have managerial implications in several ways. First, we clearly underlined the importance of a balance between the common values and beliefs as a framework, and the flexibility as the entrepreneurial spirit. This balance is used in a particular context, where innovation is aimed in a highly competitive market, and in a SME, where there are a lack of resources and lesser economy of scale. Moreover, our findings indicate to managers and organizations the importance of developing each architectural factor when it comes to organizational transformation because the architectural factors are interwoven and dependent. The development of the architectural factors is an important aspect when supporting corporate entrepreneurship. Indeed, we advice managers to regularly supervise and evaluate the factors in order that they would still be accurate with the evolution of the market. Moreover, we underlined the importance for organization to consider employees as assets and to make them part of the strategy in order to participate to the development of the organization. Those assets are particularly valuable in the case of SMEs and their difficulties.

7.4 Recommendation for Future Researches

There are several reasons for corporate entrepreneurship to be further investigated. Corporate entrepreneurship seems particularly relevant in a high competitive market that exists in several industries and all over the world. Other studies could be done about the type of corporate entrepreneurship that fit best the size of the company, or the culture. For example, how to develop corporate entrepreneurship in an international company? Empirical evidence are lacking about this subject. Finally, future research could focus on the relationship between the different architectural factors in order to have more details of their influences on each other.

7.5 Limitations

There are few limitations that we have to consider in our study. First, one limitation linked with our choice of qualitative study it the influences of the respondents on the answers and also the influences of the researchers on the study. Indeed, during the interviews, some respondents could have “soften” the answers they give because they feel that their answers do not give a good image of the company. However, the principle of anonymity and the fact that Gefeba Elektro GmbH itself encourages this case study could limit the consequences. Another influence coming from the interviewees is their pre-understanding of the architectural factors or other associations they made with terms we have used and that it could influence their answers. We tried to limit this aspect by redefining the main concepts and their meanings in our study before the interviews. Another limitation linked with our choice of qualitative study is the influence of researchers on the study. We explained our pre-understanding in our thesis and during the interviews; we intervened as less as possible and with the same words between
interviewees. Another important limitation in our case study is the number of respondents. Indeed, we had access to five employees for the interviews thereby it can limit the scope of our findings. Moreover, our choice of case study possesses some weaknesses considering the lack of documents provided for the company.
Reference list


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Appendices

Appendix 1: Questionnaire of the interviews

Interview
Gefeba Elektro GmbH

Master Thesis
Corporate entrepreneurship within the context of organizational transformation:
The case of a German medium-sized process automation company

Umeå University
School of Business and Economics, Sweden
Tarik Alami and Cécile Montier

Name: 
Position: 

Introduction
1. What are the main responsibilities and tasks in your position?
2. Do you have any pre-knowledge regarding corporate entrepreneurship? (expectations – culture)

Block 1 – Strategy
3. In how far is Gefeba an innovative company and how important is it to be innovative? (Strategy and innovation)
4. What is Gefeba’s strategy in the short and long-term perspective and what role does sustainability play? (strategy/sustainable competitive advantage)
5. To what extent does Gefeba foster entrepreneurial thinking and how do you exploit entrepreneurial activities (identifying business opportunities, innovative idea generation, problem-solving etc.)? (strategy/ exploration – exploitation)
6. What is the company’s vision? (strategy)
7. What are the challenges the company will face within the automation industry in the future? (strategy)
Block 2 – Leadership and culture

8. How would you describe the business culture in terms of the relationships between employees and departments, the accessibility and degree of communication? (culture)

9. How intense is the connection between top management and employees? (Culture and management)

10. To what extent is entrepreneurial behaviour expected within the company? (culture/management)

11. How does the flow of information and idea sharing work within the company? (culture)

12. How does Gefeba handle failure as a whole and on an individual basis? (management/culture)

Block 3 – Structure

13. Are there any structural procedures in place to guide entrepreneurial behaviour? (structure)

14. How is decision-making allocated and how autonomous and flexible are employees to structure and execute their job the way they want? (structure/management)

15. What organizational boundaries exist regarding the implementation of innovation and creativity within the company? (structure)

16. Is there any kind of reward and reinforcement system that supports entrepreneurial activities? What are the criteria for rewarding employees? (structure/management)
## Appendix 2: Table of the organizing and basic themes for the thematic network analysis

<table>
<thead>
<tr>
<th>Global Theme</th>
<th>Corporate Entrepreneurship</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organizing Themes</strong></td>
<td>Leadership</td>
</tr>
<tr>
<td><strong>Basic Themes</strong></td>
<td>Relation between employees and management. Antecedents of autonomy. collaboration and network. Support from the management.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Global Theme</th>
<th>Corporate Entrepreneurship</th>
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