MASTER THESIS

WHICH INTERNAL ORGANIZATIONAL FACTORS DETERMINE THE PRO-ENTREPRENEURSHIP ORGANIZATIONAL ARCHITECTURE?

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Abstract

Nowadays, organizations have to continuously run faster to stay ahead of their competitors. Corporate entrepreneurship (CE) may help organizations to win this race and gain a sustainable competitive advantage. However, it is difficult for organizations to create an internal organizational environment which can increase the entrepreneurialness of organizations. Therefore, the aim of this study is to contribute to the corporate entrepreneurship literature by investigating the following research question: *"Which internal organizational factors determine the pro-entrepreneurship organizational architecture (PEOA)?"*. In this study, a literature review was first conducted to find factors which could determine an internal organizational environment which is entrepreneurially intensive, also known as PEOA. After reviewing the literature, a qualitative case-study approach is applied to collect empirical data from four case studies in the Northern Netherlands. The results indicate that seven factors are important for the CE process and thus can determine the pro-entrepreneurship organization architecture. To start, three factors are indicated as sufficient and necessary and are thus crucial and stimulating determinants of the PEOA. Those are (1) long-term orientation, (2) resources, and (3) strategic legitimation. Additionally, four factors are indicated as stimulating determinants of the pro-entrepreneurship organizational architecture including (4) management support, (5) work discretion/autonomy, (6) organic structure, and (7) networking within the organization. In the discussion, the results are critically reflected upon by theory, which revealed several theoretical implications. Finally, this study suggests some practical implications and suggestions for further research.

Keywords: corporate entrepreneurship, pro-entrepreneurship organizational architecture, long-term orientation, resources, strategic legitimation, management support, work discretion/autonomy, organic structure, networking.

Acknowledgement

Since organizations and how they manage both exploration and exploitation raised my interest, I wanted to gain in depth knowledge about this topic. Corporate entrepreneurship is a way to explore new businesses and, as such, gain a sustainable competitive advantage. Therefore I have chosen to write my master thesis on this topic as part of my master Business Administration at the University of Twente. Conducting this master thesis enriched my competences and knowledge on this topic.

However, without the support of several important people it would never have been possible for me to realize this master thesis. I want to use this opportunity to thank these people. First of all, I would like to thank my supervisor Prof. A.J. Groen for his connections with several organizations and his knowledge and feedback during my master thesis. I also want to thank my second supervisor Dr. O. Belousova for her great knowledge regarding this topic and her feedback and guidelines. Next, I want to thank F. van der Meulen, NPAL, and the participating organizations in this study. Without their participation and information, this study could not have taken place.

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1. Introduction

It is not a new phenomenon that organizations have to continuous run faster in order to stay ahead of their competition. This is commonly known as the Red Queen Effect (Barnett and Sorenson, 2002). Corporate entrepreneurship (CE) can help organizations win this race because it can stimulate new business (NB) creation and has been linked by several scholars to growth, innovation, flexibility and performance (Stevenson and Jarillo, 1990). Furthermore, Miller and Friesen (1985) argued that CE can avoid stagnation and decline because it can lead to innovations, changes and improvements in the marketplace. Therefore, CE can be an interesting stimulus for sustainable competitive advantages.

CE occurs when initiatives from individuals, groups, divisions or SBU's create a new organization, induce corporate renewal or trigger innovation within that organization, which then leads to the creation of a new market, new products or to changes of the competitive landscape in the market (Sharma and Chrisman, 1999; Schumpeter, 1934; and Stopford and Baden-Fuller, 1994). This process can be either formal or informal (Zahra, 1991). In a formal process, CE has been recognized as a separate organizational strategy (Ireland, Covin, and Kuratko, 2009). Yet, whatever the cause of CE is, some organizations are more entrepreneurial than others. The reason for this may be reflected in different angles of the organization. For example, the success of an entrepreneurial strategy or informal entrepreneurial activities is somewhat dependent on the internal organizational environment (Hornsby, kuratko and Zahra, 2002). In addition, some internal organizational environments are more entrepreneurially intense than others (Morris, Kuratko, Covin, 2011). The effect of the internal organizational environment on CE is not a new subject in the literature; in fact, different scholars have indeed researched internal organizational factors associated with an entrepreneurially intense internal environment. For instance, Covin and Slevin (1991) proposed a conceptual model for CE on an organizational level and integrated internal organizational factors. Furthermore, Kuratko, Montagno and Horsnby (1990, 2005b, 2014), and Hornsby et al. (2002, 2013) tried to determine and measure this internal organizational environment. They provided literature with the corporate entrepreneurship assessment instrument (CEAI), and found in 2002 that their proposed factors explain 43% of the variance (Hornsby et al., 2002). The CEAI consists of management support, work discretion/autonomy, reward systems, the availability of resources and organizational boundaries. This instrument can indicate how entrepreneurially intense the internal

organizational environment is, in other words, it can provide insight in the pro-entrepreneurship organizational architecture (PEOA) (Ireland et al., 2009; Hornsby et al., 2013). However, the CEAI exhibits validity problems (Hornsby, Holt, Kuratko, 2008; Hornsby et al. 2013) and a study of Hornsby et al. (2002) showed that some of its factors did not meet the significance requirements. Therefore, the researchers shifted between the amounts of factors which influence the extent to which the CEAI can indicate the PEOA. Altogether, there is a lot of research about these internal organizational factors, however these factors roam in literature and a consistent configuration of these internal organizational factors is missing. Therefore, the literature still lacks a well-covered PEOA.

1.1 Problem statement

In the past decades, the field of CE has developed rapidly and several researchers tried to isolate organizational factors that stimulate CE (Holt, Rutherford, Clohessy, 2007). However, while the entrepreneurial research domain is caught between the efforts to overcome drawbacks of newness and the need to achieve maturity (Cornelius, Landström and Persson, 2006), literature still does not reveal a complete or stable PEOA. Hence, organizations, that want to be entrepreneurial may face several issues, as they do not know how to stimulate CE. Factors of the internal environment can have a wide range of effects on CE, since they can both stimulate, and impede CE. Therefore, focusing on the wrong internal factors can cause problems concerning competitiveness, wealth creation, and innovativeness. Hence, gaining deeper insight into organizational factors which can determine the PEOA is of great importance, not only for practitioners as previously pointed out, but also for scholars: a more complete PEOA can be used as a basis for further research. Therefore, the aim of this study is to find out which factors determine the PEOA in order to provide an available measurement tool to indicate the PEOA. Furthermore, testing this new measurement tool in Europe may increase the applicability of the instrument.

1.2 Research Questions

In order to meet the research objectives of this study, the following research question will be answered:

Which internal organizational factors determine the pro-entrepreneurship organizational architecture?

This research question can be divided into several sub-questions which will help to answer the main research question:

1. What is corporate entrepreneurship?
2. What are the factors determining the pro-entrepreneurship organizational architecture, according to literature?
3. How does perception of the pro-entrepreneurship organizational architecture vary across companies and why?

1.3 Background information

This study will take place at the Noordelijke Productiviteits Alliantie (NPAL). NPAL is a network organization and focusses on the competitive power of the Northern Netherlands. The design of this study fits well into their area of interest because NPAL would like to know the level of corporate entrepreneurship of the organizations in their network, and how they can increase it. NPAL cares of the continuous improvement of organizations. This is realized by the formation of clusters and a support structure for better, faster and cheaper production. Various activities are developed and organized, which stimulates the process. The aim of NPAL is to be a contact point for organizations that want to continuously improve their productivity. The core business of NPAL is to create clusters for improvements, a CEO platform and projects, and provide a support structure to increase their innovative ability which in turn can create sustainable competitive advantage. Furthermore, NPAL will guide organizations for as long as their internal culture for continuous improvement is growing and until it is embedded in their organization. NPAL has grown into a network organization in which more than two hundred people from a hundred leading organizations participate. Recently, they have booked positive results, which can be expressed as one hundred eighty working hours per participant and a total investment of EUR 8,500,000 by the participating organizations. This study will take place in a single component of NPAL's network, namely the CEO platform. The CEO platform includes forty leading organizations from different industries. The results of this study may help NPAL to set up a program to strengthen sustainable competitive advantage by encouraging CE at the organizations connected with NPAL.

1.4 Master thesis outline

This study is structured as follows. In chapter 2, the theoretical framework, the literature will be reviewed and synthesized to find out which factors determine the PEOA. Furthermore, diving into the research domain of CE could also reveal additional factors. In chapter 3 the methods used will be discussed and justified. In chapter 4 the results will be presented, and they may show relationships between factors and the corporate entrepreneurial process (CE process). Finally, in chapter 5 the research question will be answered and the limitations will be discussed.

2. Theoretical framework

In this chapter, a theoretical framework is developed in order to provide theoretical answers to the research questions of this study. Firstly, different types and a definition of CE will be described, referring to sub-question 1. Secondly, different influencers of CE will be pointed out. Thirdly, a literature review is conducted to develop a conceptual model which answers sub-question 2.

2.1 Types of corporate entrepreneurship and definition

In the last decades a great amount of literature has been written about CE, and this subject is gaining ever more attention (Holt et al. 2007). As a consequence the research domain is extensive. For example, Gartner (1990) recognized two streams of conceptualizations about CE. The first cluster of researchers focused on the characteristics of CE, while the second group focused on the outcome of it. In addition, Stevenson and Jarillo (1990) distinguished three different streams in entrepreneurship namely: why do entrepreneurs act, how do entrepreneurs act and what happens when entrepreneurs act. In these three main streams, 'the why' focusses more on causes for entrepreneurial behavior and is concerned with the characteristics of entrepreneurs and environmental variables; 'the how' reflects the behavior of the entrepreneurs; 'the what' considers the effects or results of entrepreneurial behavior. Specifically, 'the what' can be defined as carrying out new combinations (Stevenson and Jarillo, 1990). According to Schumpeter (1934), these new combinations can be divided into five different types: (1) bringing new or better quality products on the market; (2) a new method of production; (3) entering a new market; (4) a new supplier; (5) a new organization. The study of Sharma and Chrisman (1999) differs from these thoughts of Schumpeter about entrepreneurship in the sense that they differentiate it from usual innovation. In their study they reconcile different definitions and come up with the following definition, which frames this discussion and specifies CE in this study: *"corporate entrepreneurship is the process whereby an individual or a group of individuals, in association with an existing organization, create a new organization, or instigate renewal or innovation within that organization"* (Sharma and Chrisman, 1999, p. 18). Apparently, the definition consists of three types of CE, namely: create a new organization or corporate venturing, corporate renewal, and innovation. Alternatively, these three types can also be distinguished in two types of CE. Corporate venturing and innovation lead to change within the firm and corporate renewal leads to change of the firm itself (Guth and Ginsberg, 1990).

Within this concept, innovation can be seen as an entrepreneurial activity since it involves new combinations that can change the competition in a market, or lead to the creation of a new market (Schumpeter, 1934, Stopford and Baden-Fuller, 1994), or lead to the creation and introduction of products, production processes and organizational systems (Zahra, 1995). Although this can lead to the birth of new organizations that become responsible for new products and markets, it does not necessarily imply the creation of an NB or corporate renewal (Sharma and Chrisman, 1999).

Furthermore, according to Sharma and Chrisman (1999) corporate renewal can be defined as changes to an organizational structure, business or the corporate strategy, that are the result of entrepreneurial efforts. These changes imply changes in existing relationships within the organization or between the organization and its external environment. Innovation is in most cases related to corporate renewal, because it can lead to alteration of the organizational strategy or business model. However, it can also be the other way around; the organization can adjust its structure to create more innovation in its business. This form of corporate renewal can be defined as reorganization (Zahra, 1993). Especially, reorganizations that result in organic structures can trigger CE (Covin and Slevin, 1989). System-wide organizational change is also a form of corporate renewal; it can enhance creative problem solving and organizational learning. This can increase the entity's ability to recognize threats and opportunities and respond to them creatively (Zahra, 1993).

Finally, the last type of CE in this discussion is corporate venturing. According to Sharma and Chrisman (1999), corporate venturing means the creation of new organizations within the existing corporate organization, that are the result of entrepreneurial efforts. Furthermore, new product development and/or exploiting new markets through innovations can lead to the creation of new organizations, or be a result of these new organizations. It is not necessary that these venturing efforts lead to new organizations that are distinct from the existing corporate organizations, or that they reside within the domain of the existing organization (Von Hippel, 1977). Therefore, Sharma and Chrisman (1999) stated that there are two forms of corporate venturing, namely, internal and external. External corporate venturing refers to the creation of new organizations that can be classified as semi-autonomous or autonomous. They are outside the existing organizational domain or boundaries (e.g. joint ventures, venture capital initiatives and spinoffs) (Sharma and Chrisman, 1999). Internal corporate venturing refers to the creation of new organizations by existing organizations. In addition, the extent of structural autonomy determines the position of the new organization. "*The options vary from*

totally embedding the venture within the ongoing operations of an existing division to creating a separate new-venture division isolated from the rest of the organization and reporting directly to top management (Block & MacMillan, 1993; Kanter, Richardson, North, & Morgan. 1991)" (Sharma and Chrisman, 1999, p. 22). This study will focus on internal corporate venturing since the internal organizational environment has the most influence on this type of CE. Additionally, these different types of CE are also answers to the earlier stated 'what' of Stevenson and Jarillo (1990). The next step in this theoretical framework is to give an answer to the 'why', the causes for CE.

2.2 Entrepreneurial strategy

Entrepreneurial behavior can be stimulated by the strategy of an entity since strategies can enhance a certain culture and behavior, and direct them towards preferred outcomes. The same holds for entrepreneurial behavior. Ireland et al. (2009) conceptualized corporate entrepreneurial strategy based on a literature review. Burgelman et al. (1983) stated that corporate strategy can be extended to accommodate NB activity, which is a part of internal corporate business venturing. Later on, Guth and Ginsberg (1990) indicated that strategy directly affects the entrepreneurial phenomena corporate venturing and corporate renewal. Furthermore, Kuratko et al. (2004) found in their study that individual-level entrepreneurial behavior is indirectly affected by strategy. However, they also found the reverse; individual-level entrepreneurial behavior also affects strategy indirectly. Both of these behaviors are recognized as autonomous strategic behavior (Burgelman, 1983) Finally, Covin and Slevin (1991) did research in the CE domain with their study into entrepreneurial orientation. Entrepreneurial orientation characterizes how the entrepreneurial outcomes are undertaken (Lumpkin & Dess, 1996). They stated that organizational behavior is entrepreneurial-oriented if it reflects pro-activeness, risk-taking and innovativeness. Yet, this concept is adapted from the strategy-making process literature (Lumpkin & Dess, 1996), and therefore if the strategy reflects these three characteristics, it can be seen as a entrepreneurial-oriented strategy. Summarizing, the entrepreneurial orientation construct can be seen both as behavior and as strategy.

From a strategic point of view, there are a lot of causes for entrepreneurial behavior, as mentioned above. In addition, Ireland et al. (2009) stated the PEOA is the configuration between the organizational-entrepreneurial vision (strategy as perspective) and entrepreneurial behavior (strategy as pattern). In addition, the absence of an entrepreneurial strategic vision can lead to inconsistency in the PEOA and therefore inconsistent

entrepreneurial behavior and vice versa (Morris and Kuratko, 2002; Murzyka et al., 1995). Therefore, both the entrepreneurial vision and the PEOA are important for entrepreneurial behavior. In this study the focus will be on the PEOA, because the aim of this study is to determine which factors are important for the PEOA. Therefore, the last part of this theoretical framework will focus on a literature review regarding those factors.

2.3 The literature review

In order to describe the factors determining the PEOA, the method of literature review is applied and approached in the following way. The strategy is to search in databases such as Web of Science, Scopus and Scholar. Search terms as 'corporate entrepreneurship', 'innovation' and 'new business creation' were combined with 'factors' and 'aspects' to find articles. The structured method in figure 1 was used to eliminate unusable articles and find the articles needed for performing the literature study. This strategy resulted in nine factors: management support, work discretion, time orientation, organic structure, administrative mechanisms, financial and non- financial rewards, availability of resource, networking, and strategic legitimation.
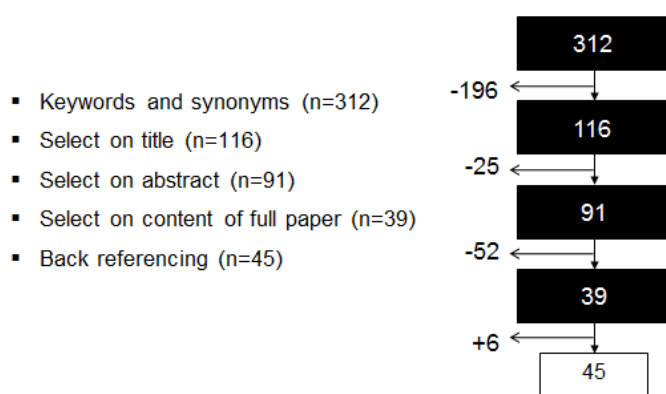
Figure 1. Literature research method.

2.4 The structure of the literature review: a pro-entrepreneurship organizational architecture

The CE literature regarding internal organizational factors which are related to CE is extensive. As stated earlier the factors roam in literature and therefore the above mentioned strategy resulted in a lot of articles about different factors. The aim of this study is to find factors which can determine the PEOA. Therefore, the building blocks of the PEOA are used to structure this literature review and to find factors which will fit the PEOA. More studies

have used building blocks to determine an entrepreneurially intensive organizational environment: Covin and Slevin (1991) argued; for example that organizational structure, culture and resources are important internal variables for CE. To introduce the structure of this literature review, the PEOA will be explained. The PEOA is an organizational context or internal environment that consists of certain attributes that individually and collectively encourage entrepreneurial behavior. This architecture integrates 'hardware' elements (e.g. organizational structure) and 'software' elements (e.g. organizational culture) (Covin & Slevin, 2002, Ireland et al, 2009). Therefore, the PEOA can be defined by an organization's structure, culture, resources and reward systems (Ireland et al., 2009). Moreover, Hornsby et al. (2002) argued that their CEAI can be used to gain insight in the PEOA and thus, some factors will likely be included in this literature review. Although the factors included in the CEAI could together form a culture which can intensify CE, this study will match the included factors with the introduced building blocks of the PEOA, which is in line with Ireland et al. (2009).

A lot of scholars link factors to entrepreneurial ideas, activities and/or behavior, which are different outcomes. For example, the CEAI of Hornsby et al. (2002) is developed in relation to the number of ideas submitted. Therefore, in order to further systemize this analysis, this study will wield a corporate entrepreneurial process perspective. The CE process includes different outcomes such as CE ideas, activities, and behavior (Covin and Slevin, 1991; Lumpkin, 2005). According to Shane and Venketaraman (2000) the CE process consists of three layers, namely discovery, evaluation and exploitation. Discovery can be explained as identifying opportunities and generating ideas. Next to this, development, project definition and defining business concepts can be classified as evaluation. Exploitation can be interpreted as implementing and managing the project. Obviously, there are more conceptualizations of a CE process, however, this conceptualization is acknowledged in CE literature (Belousova and Gailly, 2013). In addition, it is simple and clearly defined which facilitates this study to link factors to the process. In conclusion, it is not the goal of this study to research which factors are the most effective or the most needed in which stage of the process. Instead, it will systemize the analysis of factors in this study in their relation to different output (e.g. ideas, behavior, and activities). Therefore, this study aims to provide an analysis of factors which positively influence corporate entrepreneurial ideas, behavior and activities and therefore corporate entrepreneurial processes.

2.5 The factors determining a pro-entrepreneurship organizational architecture

Organizational culture-related factors. Organizational culture, or corporate culture, is abstract, difficult to understand, and can be reflected in different dimensions of the organization. Therefore, it is important to define what corporate culture is. On group level, corporate culture can be expressed by the way a group deals with problems of external adaption and internal integration. It is visible in the ways they invented, discovered or developed learning patterns or basic assumptions which worked well enough to be considered valid, and therefore were taught to new members as the correct way to perceive, think and feel in relation to those problems (Schein, 1984). Furthermore, a corporate culture is manifested in the ethical standards, values, business principles, problem solving, personnel management, official policies and procedures, in the work spirit, work environment, the interaction between managers and employees, core values, traditions and stories, and in the relationships with external stakeholders (Schein, 1984, 1996). More specifically, Fayolle, Basso, and Bouchard (2010) argued that an entrepreneurial culture can be defined through different factors (e.g. management support, and work discretion/ autonomy) that are part of results of the corporate culture. In addition, organizational culture related factors can be important for the occurrence of entrepreneurial behavior and activities (Burgelman and Sayles, 1986, Cornwall and Perlman, 1990; Covin and Slevin, 1988, 1991; Zahra 1991; and Ireland et al., 2009). According to Hornsby et al. (2002, p. 253) management support is *"The willingness of senior management to facilitate and promote entrepreneurial activity in the organization, including championing innovative ideas as well as providing necessary resources, expertise or protection"* and is strongly related to corporate entrepreneurial activities. Besides, work discretion/autonomy is also related to entrepreneurial activities and can be explained as the extent to which one perceives that top-level managers tolerate failure, provide decision-making freedom, and freedom from extreme supervision and delegate authority and responsibility (Hornsby et al, 2002). Next to this, time orientation (e.g. long-term/ short-term) is a possible cultural factor which is under-researched in this domain. However, Zahra (1996) found in a study of organizations among the Fortune 500 that short-term orientation (e.g. focus on financial controls) is negatively related to corporate entrepreneurial activities and that long-term orientation (e.g. focus on strategic controls) is positively related to entrepreneurial activities. This indicates that an organizational culture will be entrepreneurial supportive if it stimulates 'long-term' time orientation. Given these arguments along with prior research, this study hypothesizes:

Hypothesis 1. A supportive management positively influences the CE process.

Hypothesis 2. Work discretion/autonomy positively influences the CE process.

Hypothesis 3. Long-term time orientation positively influences the CE process.

Structure-related factors. In order to find structure-related factors, a definition of the organizational structure is inevitable. In the corporate entrepreneurial literature, scholars often operationally define organizational structure in terms of formalization and decentralization, in order to indicate whether a firms structure is mechanistic or organic (Khandwalla, 1977; Covin and Slevin, 1991). A mechanistic structure, characterized by formalization, centralization, bureaucratic values and a lot of hierarchy is often associated with impediment of CE (Khandwalla, 1977; Schollhammer, 1982; and Covin and Slevin, 1988). Accordingly, literature emphasized the positive role organic structure has for CE (Burgelman & Sayles, 1986; Drucker, 1985; and Pinchot, 1985). This is because such structures often have greater information processing competences, which are required by successful innovations (Burns and Stalker, 1961). In addition, Birkinshaw (1997) connected an organic structure with dispersed CE, which means that every individual acts entrepreneurial, rather than collectively establishing a new organization to obtain entrepreneurial outcomes. In earlier research, this positive role of organic structure was also empirically tested by Covin and Slevin (1988). They researched the relation and moderating role between organizational structure, strategic orientation and financial performance. Based on Khandwalla's (1977) measurement scale for organic structures, the researchers found strong support that these structures promote entrepreneurial activities. This positive relation can be explained by different characteristics of the organic structure. For example, organizational structure which includes formality, structural differentiation, decentralized-decision making and a flat hierarchy can be seen as appropriate for CE (Burns and Stalker, 1961; and Covin and Slevin, 1991). Moreover, Zahra (1991) found that formal communication, scanning and integration positively influenced internal CE. These are tangible variables which are part of the formal structure (Zahra, 1991). However, the literature is not unanimous about the influence of decentralization and formalization on corporate entrepreneurial activities (Zahra, 1993; Foss, Lyngsie, Zahra, 2014). An organic structure can indeed encourage fast dissimilation of internal corporate venturing and similar ideas, which can be seen as entrepreneurial initiatives, yet it does not guarantee the participation of different individuals or groups in this process (Zahra, 1993). Furthermore, Foss et al. (2014) argued that decentralization can enhance entrepreneurial opportunities in organization, but it can also lead to missed opportunities in synergy on

resource sharing, reduced inter-communication, knowledge sharing, and a lack of coordination. According to Foss et al. (2014) this can lead to organizational conflicts and resource competition and therefore, formalization is more appropriate for the realization of these entrepreneurial opportunities. However, they did not find strong evidence for this last hypothesis; they found that decentralization can stimulate entrepreneurial opportunities and ideas, and formalization reinforces the realization of these ideas. This kind of formalization is already studied in earlier research in terms of administrative mechanisms (Burns and Stalker, 1961; and Burgelman and Sayles, 1986). Moreover, Burgelman and Sayles (1986) noted the importance of administrative mechanisms in ways of evaluating ideas, selecting ideas and the implementation of these ideas. They connected administrative mechanisms with the strategy decision making process, which results in a more coordinated and more formalized process of evaluating, selecting and implementing entrepreneurial ideas. In the view of this literature and research, this study hypothesizes that:

Hypothesis 4. Organic structure-related factors (e.g. informal, decentralized, flat hierarchy, structural differentiated, formal communication, scanning and integration) positively influence the CE process.

Hypothesis 5. Administrative mechanisms positively influence the CE process.

Reward systems. Literature has highlighted the importance of organizational structure-related factors and organizational culture-related factors for the occurrence of corporate entrepreneurial behavior; still, other scholars have argued for the supportive need of the appropriate use of reward systems (Fry, 1987; Sathe, 1985; Block and Ornati, 1987; Souder, 1981; Kanter, 1985; Sykes, 1992; and Hornsby et al., 2002). Moreover, structure, culture and the entrepreneurial project itself provide challenge, achievement, and independence, whereas the financial incentives and non-financial incentives are a form of feedback (Block and Ornati, 1987; Brazeal, 1996). Financial incentives can also be either successful or unsuccessful. Therefore, Block and Ornati (1987), and Sykes (1992) promote the use of 'milestone' based rewards. This type of rewarding focusses on the acceptance of additional risk by a corporate entrepreneur. An important advantage is that it aims for equality (Sykes, 1992) and therefore 'ordinary' employees and managers do not feel subordinated because they do not run the additional risk. In addition, Brazeal (1996) found a positive relation between financial rewards (measured by the original scale of Block and Ornati (1987)) and the outcomes of entrepreneurs. This implies that financial rewards can stimulate entrepreneurial activities. Aside from this, non-financial incentives are another important

characteristic of reward systems (Sykes, 1992; Hornby et al., 2002). According to Hornsby et al. (2002) reward systems should include goals, emphasis on individual responsibility, feedback, and results-based incentives and should as such also include recognition and promotion. However, they did not find statistical evidence for this factor. Even though Brazeal (1996) found in earlier research that non-financial incentives have a positive influence on the performance of entrepreneurs, these non-financial incentives are outperformed by financial incentives. Summarizing the literature, this study hypothesizes:

Hypothesis 6. A reward system which includes both financial incentives such as additional risk rewards, and non-financial incentives such as recognition, promotion, positive feedback and more responsibility positively influences the CE process.

Resources. The availability of resources is widely recognized as an important dimension that must be perceived by employees in order to act entrepreneurial (Covin and Slevin, 1991; Hornsby et al., 2002). This is because resources form the base for all actions in organizations and therefore play a facilitating and limiting role for corporate entrepreneurial behavior (Covin and Slevin, 1991; Hitt, Ireland, Camp, and Sexton, 2001). Furthermore, resources can be defined in the broadest sense, including things such as financial resources, functional-level capabilities (e.g., manufacturing flexibility), factory and equipment, organizational systems (e.g., marketing research systems), and organizational-level capabilities (e.g. ability to get a new product on the market quickly) (Covin and Slevin, 1991). In addition, knowledge is an important intangible resource because knowledge and knowledge sharing can lead to entrepreneurial ideas and thus to entrepreneurial activities (e.g. new technologies) (Hit et al., 2001; De Clercq, Dimov, and Thongpapanl, 2013). In order to gain resources such as knowledge, networking can be an important source for corporate entrepreneurs. Moreover, "social networks allows acquisition of required information, knowledge and skills, access to resources; includes also the 'quality' of people involved" (Belousova, 2002, p. 14). Although the literature is sparse in providing relationships between intra-organizational networks and CE, a few studies highlight the importance of networks to CE (Dougherty and Hardy, 1996; Leifer et al., 2000; Subramaniam and Youndt, 2005; and Kelley, Peters and, O'Connor, 2009). Kelley et al. (2009) argued that sharing resources and knowledge can also lead to forming of ideas due to creativity. In addition, for the creation of networks relevant to CE, two characteristics are important; human capital and social capital. Human capital refers to the knowledge, creativity, expertise in roles and functions and skills of employees in the organization (Subramaniam and Youndt, 2005) and is a major source for new ideas in

organizations (Snell and Dean, 1992). Social capital refers to the transferability and transforming of knowledge by employees in the organizations (Subramaniam and Youndt, 2005). Subramaniam and Youndt (2005) also found that the interaction of both constructs is positively related to radical innovative capability. Besides, networking, "the need for freedom in terms of time" is often mentioned in interviews as an important resource for employees to act entrepreneurial (Marvel, Griffin, Hebda, Vojak, 2007, p. 761). This was empirically tested by Hornsby et al. (2002) earlier and they found a positive relationship between resources (including time) and entrepreneurial activities. Consistent with the literature, this study hypothesizes:

Hypothesis 7. The availability of time, financial resources, and knowledge are important resources and positively influence the CE process.

Hypothesis 8. Networking positively influences the CE process because it can increase the possibilities to acquire the resources needed.

Strategic legitimation. The literature is sparse regarding strategic legitimation and its link with CE. However, Bouchard highlighted the importance of it. According to Bouchard (2001), strategic legitimation of the CE process can approve or disapprove the process and therefore impede or stimulate other factors such as resources. Furthermore, in organizations often a tradeoff has to be made by the corporate management between exploration and exploitation (March, 1991; Bouchard, 2001). So, when the corporate management has a focus on exploration, corporate entrepreneurial processes have more chance to receive strategic legitimation (Bouchard, 2001). Although the PEOA according to Ireland et al. (2009) does not contain strategic legitimation, it is important for the development of the CE process. Collectively, the aforementioned literature supports the following hypothesis:

Hypothesis 9. Strategic legitimation of the CE process positively influences the process and the distribution of resources to the project.

2.6 The conceptual model

In this extensive analysis of factors, the measuring factors of the CEAI as indicated by Hornsby et al. (2002) are integrated. Based on their 2002 and 2013 studies, *management support (H1), work discretion/autonomy (H2), reward system (H6), and the availability of resources (H7)* are integrated in this analysis. These factors are closely analyzed and based on

Hornsby et al. (2013) some factors are slightly adjusted. Additionally, the factor *organizational boundaries* is not included in this analysis of factors because Hornsby et al. (2013) deleted this factor from their initial CEAI method since it did not meet the structural and content validity requirements. Resulting from their validity measurement, two items of this factor remained. However, these items are in contrast with one item from the organic structure (e.g. informality). Therefore in this study, the organic structure related items replace the organizational boundary factor. Another important reason for this choice is that organic structure related factors are positively related to corporate entrepreneurial behavior and organizational boundaries can be recognized as obstacles for entrepreneurial behavior (Hornsby et al., 2002). In terms of the PEOA, organic structure- related factors fit better in this logic than organizational boundaries. Furthermore, a few additional factors resulting from the literature review are integrated in this conceptual model; *long-term orientation (H3), organic structure (H4) with flexible administrative mechanisms (H5), networking (H8) which is combined with resources, and strategic legitimation (H9).* All in all, the abovementioned factors include culture-related factors, structure-related factors, reward systems, the availability of resources, and an added factor, namely strategic legitimation. According to the literature these factors can be considered a renewed group of factors, which can be determinants for the PEOA necessary to facilitate a corporate entrepreneurial strategy (Ireland et al., 2009). Moreover, based on Hornsby et al. (2002) and the analysis provided in this study, a conceptual model is designed. The factors included in these analyses positively influence the CE process. According to Hornsby et al. (2002) "Understanding middle manager perceptions about the internal corporate environment is crucial to initiating and nurturing any entrepreneurial process" (p. 254). Therefore, the perception of the middle managers is also included in the conceptual framework since it can influence the behavior of the middle manager, and behavior is integrated in the definition of the CE process. Finally, short supporting descriptions of the included factors in the conceptual model are provided below:

Management support (H1)

The willingness of senior management to facilitate and promote entrepreneurial activity in the organization, including championing innovative ideas, providing necessary resources, expertise or protection and supporting risk taking and creativity.

Work discretion/ autonomy (H2)

The delegation of authority and responsibility, provide decision-making freedom and freedom from extreme supervision and the willingness of top-level managers to tolerate failure.

Long-term orientation (H3)

The focus of the organization and top management on long term goals (e.g. focus on strategic controls).

Organic structure (H4) with flexible administrative mechanisms (H5)

A structure which consists of informality, decentralization, flat hierarchy, structural differentiation, formal communication, scanning and integration. In combination with flexible administrative mechanisms for evaluating, selecting and implementing ideas.

Reward system (H6)

The incentive structure which includes financial incentives such as additional risk rewards and non-financial incentives such as recognition, promotion, positive feedback, and more responsibility

Availability of resources (H7)

The availability of time, financial resources, knowledge, and knowledge-sharing, as well as resources in the broadest sense, needed for any project.

Networking (H8)

Social networks allowing acquisition of required information, knowledge and skills, access to resources; includes the 'quality' of people involved as well. Further, networks should consist of human capital and social capital.

Strategic legitimation (H9)

The approval for corporate entrepreneurial processes depending on the strategy, and management choices.
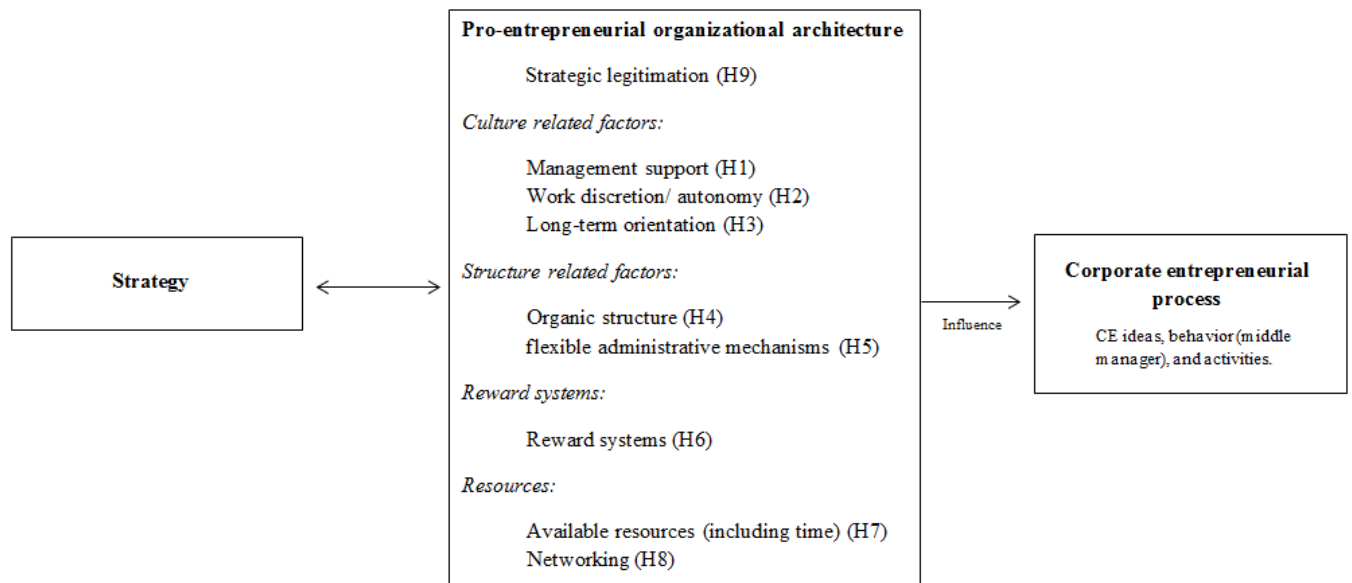
Figure 1. Conceptual model based on the literature review.

3. Methodology

This chapter describes which methods and techniques are used to find out which factors determine the PEOA. The study is done in two phases, the identification phase (section 3.1) and the assessment phase (section 3.2). The identification phase allows selecting organizations for the case studies executed in the assessment phase. Both phases are performed at NPAL which was previously introduced. NPAL has a CEO platform in which forty organizations participate. NPAL would like to know the corporate entrepreneurial intensity of the participating organizations, in order to discuss their own performance. This study also needs to identify corporate entrepreneurial organizations for the dependent variable, and organizations which are less corporate entrepreneurial, for comparison. The case studies are used to assess the conceptual framework which is presented in chapter 2. The conceptual framework consists of internal factors which can influence the CE process.

3.1 The identification phase

In this phase, the dependent variable is the central topic. First of all, it is important that the researcher gets familiar with the subject, CE, which is covered by the first sub-question: 'What is corporate entrepreneurship?' For this question, a few fundamental articles are read regarding this topic and the research streams in this domain are revealed with the help of citation research. The second step is to identify which organizations can be used for the dependent variable to answer sub-question 3. In order to do this, there are four cases selected with high (two cases) and low (two cases) entrepreneurialness. Here, the participating organizations of NPAL are surveyed and four different organizations with different profiles are selected. The survey used for this phase of the study can be found in appendix I.

3.1.1 Measurement construct, data analysis and reliability analysis

In order to identify the entrepreneurialness of the participating organizations, their strategy was assessed using the entrepreneurial orientation (EO) construct. For both constructs a five point Likert scale is used where 1 means 'strongly disagree' and 5 means 'strongly agree'. EO was measured using the scale of Covin and Slevin, (1986) reflecting pro-activeness, innovation and risk-taking in a nine-item scale. For the EO construct, only risk-taking meets an acceptable Cronbach's alpha of .816. The Cronbach's alpha of pro-activeness (.693) is barely lower than .7, and innovativeness (-.641) is severely lower than .7. The reason for this low Cronbach's alpha is that the data within the innovativeness construct is contradicting and thus the questions do not consequently measure this construct. However, a

possible explanation for this poor score could be the low response rate in the small sample. In addition, the total Cronbach's alpha of the EO construct is .589 which is questionable. Considering the EO's Cronbach's alpha; these results have to be interpreted with caution. Still, the EO scale typically has high construct validity and in earlier research in the Netherlands it featured a valid score of .806 (Kemelgor, 2002). In addition, the answers of the EO items of the entrepreneurial organizations in this study are consistent, which makes the identification of the different cases more reliable.

3.1.2 Data collection

The questionnaire that was sent out to all participating organizations was pre-tested by 6 middle managers to check whether they interpreted the questions right and understood the questionnaire. Out of the 40 participating organizations, 22 CEOs returned the questionnaire, resulting in a response rate of 55%. From those 22 organizations, 82% can be classified as manufacturing organizations. Out of the returned questionnaires, four organizations are selected for the cases in assessment phase. The organizations are selected based on their scores. In this study medium to high scores on EO are classified as >3.5, and low scores on EO are classified as <3.5 (Smart and Conant, 2011). Purposively, a choice was made to ensure a difference in entrepreneurialness between the two groups of organizations, because logically, this would enhance the differences in the studied factors between the organizations. This should help to interpret and understand the influences of factors on the CE process. Therefore, two organizations are selected with a score higher than 3.5 and two organizations are selected with a score lower than 3.5, which resulted in the following cases.

Table 1. EO mean scores of the four cases.

	TechnoServCo	ErgoCo	BuilderCo	LightCo
Mean EO	4.22	3.89	2.44	3.33

According to table 1, TechnoServCo and ErgoCo are indicated as entrepreneurial because these organizations fall into the category "medium to high scores on EO" while BuilderCo and LightCo are indicated as non-entrepreneurial because these organizations fall into the category "low scores on EO" based on the analysis.

3.2 The assessment phase

In this phase of the study the factors of the conceptual framework are assessed with reference to the case studies. The results of this assessment answer sub-question 3. Next to this, the factors included in the theoretical framework are backed up by sub-question 2. These factors are the independent variables for this study. Details on the literature review can be found in section 2.4.

3.2.1 Sample selection

After the selection of the four cases, the middle managers are selected based on the projects in which they participate or have participated. Since all four cases represent manufacturing organizations, the generalizability of this study to the manufacturing industry will be enhanced. For each company, two projects were selected based on theoretical sampling. Theoretical sampling assumes that selection will be done based on criteria derived from the literature in order to start the sample where the phenomenon occurs. (Glaser & Strauss, 1967; Coyne 1997). The criteria for an entrepreneurial project are as follows: projects which lead to new products or technologies which can create new markets or are totally new for a known market. The other project has to be a 'usual' project (e.g. incremental product innovation for known markets). The criteria are based on the definition of CE in chapter 2. In addition, it could be the case that one of the organizations does not have any corporate entrepreneurial projects, then corporate entrepreneurial ideas or initiatives or a usual project will form the basis of the interviews. In that case it is important to question which factors work obstructive for corporate entrepreneurial projects or ideas.

3.2.2 Data collection

The data is collected on the basis of two projects as described in section 3.2.1. This is done because the researcher wants to study whether the extent of the factors varies between 'usual' projects and CE projects in different cases. In the end, a total of 18 middle managers for four cases were selected for the interviews and the questionnaires. These managers have an average work experience of 10.32 years in the organization, so this implies that they know their organization very well and that increases the reliability of their answers. In table 2 the description of the data collection is presented.

Table 2. Description data collection.

Cases	Managers interviewed	Duration of the interviews
TechnoServiceCo	Sales manager	42 min.
	HR manager	37 min.
	Account manager	47 min.
	CEO	20 min.
BuilderCo	Business developer	40 min.
	Account manager	20 min.
	Marketing manager	42 min.
	Account manager	22 min.
ErgoCo	Marketing specialist	28 min.
	Production manager	41 min.
	R&D manager	60 min.
	Q&A manager	35 min.
	CEO/ sales	31 min.
LightCo	CI engineer	36 min.
	Supply Chain manager	51 min.
	Procurement engineer	47 min.
	Product manager	42 min.
	Production manager	23 min.

In this study both qualitative and quantitative data collections are used because triangulation will provide more insights than quantitative research alone, and will increase the internal reliability of this study (Maso and Smaling, 1998). Moreover, qualitative research, and especially case studies are often used to learn about the different relationships between factors (Lant and Mezias, 1990). On day was planned in between the data collection and the data analysis of the different cases. This was done to improve the quality of the data analysis (Babbie, 2012). The four cases including the two projects will be briefly described below.

3.2.3 Case description

In table 3 the cases are described to give information about the content of the organizations and the projects observed.

Table 3. Case description.

Case	Description
TechServCo	Case 1 is about a manufacturing organization that delivers services to the business-to-business market. The organization counts 350 employees of which 4 are interviewed. In this organization, the following two projects are analyzed. The CE project is about an NB workgroup where industrial automation will be integrated in the total service perspective of the organization, which is new to the market and to the organization. The other project is about the development of an integrative approach of the organizational services without an NB perspective.
ErgoCo	Case 2 is about a manufacturing organization that delivers products to the medical and sports industry. This organization counts 35 employees of which 4 are interviewed. In this organization the following two projects are analyzed. The CE project is about a product which was radically innovated and modularly offered to the market. This product in a modular form is new to the market and new to the organization. The 'usual' project was an incremental innovation to a product, in other words, a known technology for a known market.
BuilderCo	Case 3 is about a manufacturing organization that delivers products in the construction market. The organization counts 160 employees of which 4 are interviewed. In this organization, the following two projects are analyzed. The first project is about product innovations for a known market. Since it is neither new for the market nor for the company, it does not meet the criteria fully, which makes this project not completely corporate entrepreneurial but it fits in the classification of a grey area. The other project can be classified as a 'usual' project since it is about known products for a known market, except they changed the 'sales' distribution of the products.

| LightCo | Case 4 is about a manufacturing organization that delivers products to organizations in the vertical chain. The organization counts 155 employees of which five are interviewed. In this organization, two projects are analyzed. The CE project is about a product/technology characterized as technology push. It is new to the organization, and to the unknown market. The 'usual' project is about an incremental innovation to a product for a known market. |

3.2.4 Measurement constructs and reliability analysis

The interviews are semi-structured since this study aims to research which factors are presented in the internal environment. The interviews started with open questions about the project to further identify whether the project met the criteria. Examples of other open questions were: *"Which 3 factors in the internal environment stimulated the development of your project?"; "Which 3 factors in the internal environment obstruct the development of your project?".* If the middle managers had difficulty naming the factors, more structured questions were asked. Examples of these questions were: *"Management support is recognized in the literature as important for corporate entrepreneurship, how do you perceive this in your organization?".* In this format, all the factors of the conceptual framework were discussed. Furthermore, the total interview protocol can be found in appendix II. Whereas the results of the interviews may provide examples of the case studies which can imply possible differences between the cases, the results of questionnaires may confirm possible differences. This means to answer sub-question 3: *"How does the perception of the pro-entrepreneurship organizational architecture vary across companies and why?".* The questionnaire consists of nine measurement constructs. Most of the constructs are existing constructs from the literature which can be seen in table 4. However, even though the factor rewards systems is part of the CEAI of Hornsby et al. (2002), financial rewards are not explicitly measured with this construct. Furthermore, 'administrative systems' is not an existing construct. Therefore, applicable constructs were developed for these two factors, based on the literature, and were added by the researcher. The questionnaire can be found in appendix III. The results of the reliability analysis can be found in appendix IV. Work discretion/autonomy (.641), resources (.657), and time orientation (short-term (.621) and long-term (.568)) were the only factors that did not meet the acceptable Cronbach's alpha level of .7. This is probably the result of the small sample (n=18), therefore the data analysis should be interpreted with caution.

Table 4. The measurement constructs.

Measurement construct:	Author:	Number of items	Likert scale:
Management support, work discretion/autonomy, rewards, resources (one item was added by researcher)	Kuratko et al. (1990) Hornsby et al. (2002)	40 (19, 9, 5, 7)	5 point Likert scale (1 strongly disagree, 5 strongly agree)
Networking	Subramaniam and Youndt (2005)	9	7 point Likert scale (1 entirely disagree, 7 entirely agree)
Structure; organicity	Khandwalla (1977)	7	7 point Likert scale (1 entirely disagree, 7 entirely agree)
Time orientation	Zahra (1996)	7	5 point Likert scale (1 strongly disagree, 5 strongly agree)
Financial rewards (added by researcher)	Block and Ornati (1987)	3	5 point Likert scale (1 strongly disagree, 5 strongly agree)
Administrative systems (added by researcher)	Burgelman and Sayles (1986)	2	5 point Likert scale (1 strongly disagree, 5 strongly agree)

3.2.5 Data analysis

In order to analyze the qualitative data, the interviews were recorded and transcribed the day after. The mother tongue of the middle managers involved is Dutch and therefore the interviews were conducted in that language. The analysis of the verbatim transcriptions were done in Dutch, since the researcher's mother tongue is Dutch as well, hence only the essential parts of the interviews were translated into English. Concerning the analysis, a codebook was developed based on deductive codes. In this study a deductive analysis was selected because the conceptual framework is the starting point of our analysis and the aim is to test whether it is representative for the practice (Maso and Smaling, 1998). Therefore, selective coding is used to structure the data in characteristics fitting with conceptual framework (Garud and Rappam, 1994). Based on these codes, the verbatim transcription is read and examples,

incidents, systems and processes are matched with the codes. The operationalization of these codes can be found in appendix V. Aside from this, inductive coding is used for additional factors or factors which influence the CE process but did not match the deductive codes. This approach is used for each interview, whereas quotes from different middle managers are indicated with a number. This has resulted in four codebooks one for each case which can be found in appendix VI.

Hereafter, the selected data is analyzed using analytic techniques, including explanation building, cross-case synthesis and pattern matching (Yin, 2014). These techniques are covered in two kinds of data analysis: within-case analysis and cross-case pattern analysis (Eisenhardt, 1989). In this study, the 'coded' factors are always present at organizations, however the extent to which a factor is present is important for the CE process and will differ across cases. At first, within-case analysis is performed based on a table which represents how a certain factor occurs at an organization. In order to explain the degree of a certain factor, experienced by middle managers, explanation building is used by means of examples and incidents. The extent to which a factor is experienced is important to explain whether a factor obstructs or stimulates the CE process.

Once the factors are indicated in the cases, cross-case pattern analysis is performed to find differences between the four cases. To start, tables of the four cases are made per factor to compare whether a factor obstructs or stimulates the CE process and to score to what extent a factor is present at each case. Based on these tables, the differences between the cases are analyzed, and thus it is indicated which factors are stimulating the CE process. Additionally, patterns between factors are indicated based on the relationships between them. Finally, the indicated factors and patterns are matched with the theory leading to conclusions.

To enhance the differences between the cases, quantitative data is also used and integrated with the cross-case pattern analysis. The quantitative data is analyzed using SPSS and in order to find differences between the four cases, the means are compared. Unfortunately, statistical T-tests are not desirable since the cases include a maximum of 5 individuals. In the cross-case pattern analysis, the means are given. All total quantitative results including standard deviations can be found in appendix VII.

4. Results

In this chapter, the results of this study are presented. The empirical data is collected and analyzed based as described in the previous chapters. To structure the analysis, every case is described in the within-case analysis (section 4.1). On the basis of these within-case analyses, a cross-case analysis (section 4.2) is used to describe differences across cases. In this section, the quantitative results are integrated. Additionally, possible patterns between the factors are described (section 4.3). Finally, the obstructing or stimulating influence of factors to the CE process is described (section 4.4) and a summary of the most important results is given (section 4.5).

4.1 Within-case analysis

4.1.1 TechServCo

In this organization, the existence of culture-related factors is widely perceived by the middle management. The four middle managers, participating separately, perceived a lot of management support in both projects. The management team encourages employees to come up with new ideas or initiatives about NB. This is reflected in a few workgroups which are named industrial automation (IA) and predictive maintenance (PM), organized by the management team. These topics are potential NB for the organization services and the workgroups were created to gain more knowledge and ideas about the potential NB. Therefore the employees get a lot of support in terms of time to spend on this work group every week. *"The management facilitates ideas, projects or NB with time and money. We have some workgroups IA and predictive maintenance and the employees involved get 6 to 8 hours per week and an amount of money to develop these NB.".*

Aside this, time orientation is perceived as long-term oriented by all interviewed middle managers. A lot of working hours are invested in multiple workgroups (e.g. industrial automation) and discipline groups. These groups are investments for the long run and can result in new ideas and NB for the organization. Of course there is always a tension between profit on the short-term and investment for NB on the long-term but the focus is mostly on the latter. *"There is always a small balance between profit on the short-term and investment on the long-term; however in this field of tension we focus on the long-term. That is the main thread; sometimes we focus on short-term to end a year with profit, but that does not obstruct the long-term."*

Another stimulating aspect as perceived by the middle managers is work discretion/ autonomy. To a large extent the middle managers argue that freedom and autonomy stimulate projects when the management does not prescribe how employees have to do their job. *"The freedom and autonomy I perceive stimulates me to work on the project. I do not have to wait for others, I can just go. I do not like working in a restricted project, so this stimulates me a lot."* Moreover, fully-prescribed job descriptions are not present at this organization. That means they work in free roles to stimulate different thoughts about a knowledge question, which may result in new ideas and better quality solutions. *"We do not have certain job descriptions but we work more in roles. That gives you the opportunity to get a broader perspective."*. The structure-related factors perceived by the middle managers indicate an open, informal, and flat structure which they acknowledge as organic. This results in fast communication, feedback and cross-fertilization of knowledge. According to the middle managers, this is an important advantage because it leads to increasing knowledge-sharing, idea initiatives, and therefore entrepreneurship. *"Our structure is very flat and we work across different areas, in fact we work where work is. It seems fuzzy, but that is not true, it stimulates cross-fertilization and that stimulates the velocity of projects."*. *"The loose structure also stimulates entrepreneurship."*. This organic structure is also reflected in the administrative mechanisms of the organization, because there seems to be no system in place to evaluate and select ideas. Furthermore, if an idea is developed into a project, it depends on the manager if this process is structured. However, the last years they have structured the organization a bit more with new managers, commands to structure projects, and a management program, all of which have also resulted in a more structured way of developing NB. According to the managers this does not impede the velocity of the NB workgroups. *"It depends on our manager whether a project is very structured and that can work obstructive, on the other hand, our leadership program stimulates the use of milestones in projects."*. *"We try to prioritize the ideas and initiatives now and that helps a lot. We do that every time through considering our mission, vision, and strategy, and use these as criteria."*.

In this organization, there is no additional financial compensation for projects. *"We have a normal salary structure, but no additional rewards; because we believe that intrinsic motivation is important."*. Moreover, they receive non-financial rewards in terms of compliments, more responsibilities, and team trips. Middle managers perceive that the availability of resources is present to a large extent and agree that enough money and time is available for every workgroup; the same is true for the amount of other needed resources.

"Our workgroups receive a certain amount of money to develop NB e.g. IA or PM." Employees get time for NB in the work groups and in discipline groups they have time to think about their own ideas and disciplines." Furthermore, the middle managers experienced a large extent of possibilities to network with other employees in the organization. The barriers to get knowledge from other disciplines are low and are encouraged by the management team. Furthermore, there are sessions organized in which e.g. business administration employees present what they have done for clients, in order to learn from each other. *"Networking is easy when you need knowledge, because there are no barriers. Furthermore, there are interdisciplinary projects which stimulate networking and we have master classes for our people, alumni and some clients. In addition we also have disciplinary workgroups to stimulate networking.".*

Strategic legitimation for projects mostly depends on the alignment between projects and the strategy of the organization. The strategy of this organization is broad in that perspective because they want to offer solutions to organizations in order to increase their competitive advantage. Therefore a lot of NB projects get strategic legitimation. Two middle managers argue that TechServCo uses the blue ocean strategy; they try to create a new market and stay away from the competition. So in that perspective a lot of NB ideas get strategic legitimation. Moreover, strategic legitimation is usually not dependent on the time orientation of the project; however, projects with a long-term orientation are better supported. *"NB will get strategic legitimation if it is in line with our core business, predictive maintenance for example. That does not mean that it is not new for us, but the approach is the same.". "The strategic legitimation is not dependent on the time-orientation, however long-term is more stimulated.".*

Table 5. Case 1 TechServCo.

Factor	How is the factor experienced in the organization?	Score*
Management support	The middle managers perceive facilitating leadership where ideas and projects are stimulated with time and money. There are NB workgroups in which employees can invest 6 to 8 hours a week.	3

Long-term orientation	The middle managers experience a focus on long-term orientation since time and money is invested in NB workgroups to develop products (services) for the future, which can be new to the market.	3
Work discretion/ autonomy	In this organization the middle managers perceive to work in roles rather than within extensively described job descriptions. They perceive a lot of freedom and do not get punished if mistakes are made.	3
Organic structure	The middle managers perceive the structure as flat, loose, informal, and open. They can work across areas and disciplines.	3
Administrative mechanisms	There is no system for the selection, evaluation, and implementation of ideas. Even if a project is started, it depends on the manager whether it is structured. Recently a leadership program has been set up to better structure the evaluation and the project itself.	1
Financial rewards	There are no additional financial rewards for projects.	1
Non-financial Rewards	The middle managers perceive non- financial rewards in terms of compliments, more responsibilities, and team trips.	3

Resources (time)	The middle managers experience enough resources including time, money and human resources. There is time and money reserved to work on NB workgroups. Capacity problems are partially solved with new employees.	3
Resources (networking)	The middle managers perceive, to a large extent that they can network within the organization. Networking is even promoted because employees of different disciplines are built around knowledge questions to share knowledge and different perspectives.	3
Strategic legitimation	The middle managers perceive strategic legitimation for long-term projects and NB business projects. However, the strategic legitimation does not depend on time orientation.	3

* The score is based on the qualitative research. (3) Indicates factor is present to a large extent, (2) indicates factor is present to moderate extent, and (1) indicates factor is present to a small extent.

Finally, the middle managers argued the importance of some additional factors. One middle manager argued that promoting your NB project is very attractive, because then you get employees involved who believe in that project rather than that they are randomly selected. *"I try to promote my own project by doing a little PR, to involve people in this project and to let them see the usefulness of this project.". "I tell our young business administration employees in work meetings that I am looking for people for the IA project, and they are enthusiastic and see the usefulness of this project.".* Furthermore, another middle manager mentioned that an almost infeasible project with employees working on it throughout the organization on a yearly basis will motivate the entire organization.

4.1.2 ErgoCo

The culture-related factors are widely perceived by the middle managers of ErgoCo. The CEO is open and enthusiastic about new ideas, he takes input from others seriously, a middle manager claimed. According to other middle managers, the CEO also stimulates new ideas and technology push. *"The CEO stimulates us to come up with creative ideas and these ideas can be integrated into the roadmap."* Aside from this, the middle managers also

perceive a long-term time orientation in this organization. There is a good balance between projects for the long run and short-term projects. One manager stated that the employees do not stress out when a year closes with negative results. *"There is a good balance between long-term and short-term orientation, the owner of this organization has a long-term vision and NPD's are in line with that vision, therefore we invest time and money in that kind of projects, which do not deliver fast money."*. However, recently some middle managers experienced a little more focus on the short-term to increase financial results. *"There has always been a focus on the long-term, however recently this is shifted to the short-term."*. *"There is balance between the long-term and the short-term. In our roadmap we choose for short-term project to earn money but we also work on long-term projects to have a sustaining business."*. Furthermore, the middle managers perceive a large extent of work discretion/autonomy. In general, there is a lot of freedom while working and middle managers have their own responsibilities. Of course there are job descriptions and goals, but there is freedom to decide what to do and how to do it. *"I get a lot of freedom, I have my own responsibilities and twice a week we discuss the situation, but I think that everyone can work independently."*. *"We have job descriptions and responsibilities, as well as a lot of freedom to perform our tasks and do other things."*. Furthermore, mistakes can be made without getting punished for it. *"The CEO always asks what I think about a chance or a project; there is a lot of space to make mistakes if I learn from it."* The above mentioned phrases imply a large extent of work discretion.

The middle managers also perceive, to a large extent an organic structure, because the structure of the organization is flat, decentralized, informal, and open. To illustrate this: *"Our organization is very flat, informal and that stimulates the development of the NPD project."*. *"The structure is also very open, financial facts are openly discussed and presented to the employees."*. However, there are a lot of procedures since ErgoCo delivers to the medical industry in which a lot of certifications are required. *"There are a lot of procedures because we deliver to the medical industry. Sometimes this works obstructive because it takes a lot of time to test everything."*. Further, the middle managers perceive to a moderate extent administrative mechanisms. According to the middle managers there is a digital idea system, which acts like a safety-net for ideas. The CEO selects and evaluates the ideas. Although, the intention of the organization is to structure the projects, but this does not always work out in practice. *"We try to structure our project but in reality it does not work that way because*

sometimes we have to deliver faster. It is hard to maintain a rigid structure till the end of the project".

In this organization, rewards are experienced in different ways. To start, every year employees receive an additional compensation in terms of profit sharing. However, this is not related to milestones or additional risk in projects. *"There is a yearly financial compensation for the whole organization but not specified for projects or ideas.".* Additionally, the middle managers perceive, to a large extent, non-financial rewards. Middle managers receive compliments if their work was outstanding as well as recognition when they come with something new. *"If I come up with something new such as a product, I get recognition.".*

Next to this, the middle managers perceive the availability of time to a moderate extent. One middle manager stated that the availability of time is sometimes problematic because employees are very busy. For example, according to this manager the R&D department is fully booked for the next two years. For some disciplines, only one employee is available, which results in less time for NB projects, when daily problems occur. *"For every discipline there is one employee, so if there is a problem you have to make a choice and that will lead to less time for NPD".* In contrast, other middle managers from the R&D department stated that there is time available for NB projects because there is time reserved for it in the strategic roadmap. *"For NPD such as a multifunctional ergo metric bicycle, time is reserved to work on it.".* Furthermore, other resources such as money and raw materials, are to a larger extent, present for NB projects. According to two managers, money is reserved in strategic roadmaps and raw materials are to a large extent available, and if not they will be purchased. *"In our roadmap, a certain amount of money is destined for the development of this NPD project.".* *"There are enough raw materials to experiment with and if we do not have something, we can buy it.".* The middle managers also perceive to a large extent, possibilities to network within the organization. The middle managers can get a lot of knowledge out of every corner of the organization. To illustrate this, employees from the R&D department often obtain information about materials from operational employees. This prevents problems later on in the project. *"It is easy to network here; I can gain knowledge from every corner of the organization, for example, our developers often walk to the production department to request information about the nature of a raw material, this will help to identify problems before they occur.".*

Finally, the middle managers of this organization perceive strategic legitimation for long-term projects. The vision of the owner focusses on the long run, and therefore money and time is reserved for long-term projects such as NB projects. *"There is strategic legitimation for long-*

term projects such as NPD because the owner has a long-term vision, and time and money is reserved for it.". Furthermore, NB projects which are not in line with the core business of ErgoCo are also strategically legitimized because the scope of the holding is broader than the strategy of ErgoCo. *"There is even strategic legitimation for projects which do not belong to the core-business of ErgoCo because we are part of a holding, which has a broader scope.".*

Table 6. Case 2 ErgoCo.

Factor	How is the factor experienced in the organization?	Score*
Management support	The middle managers perceive support from the CEO because he stimulates to come up with new ideas and these are sometimes integrated into the strategy roadmap.	3
Long-term orientation	In this organization, there is balance between long-term and short-term projects. There is a long-term vision, and therefore there are NB projects as well as some short-term projects to increase financial results.	2
Work discretion/ autonomy	The middle managers experience, to a large extent, freedom in their work. They can work independently and have their own responsibilities.	3
Organic structure	In this organization, the structure is perceived as flat, decentralized, informal, and open. However, there are a lot of procedures since the organization caters to the medical industry.	3
Administrative mechanisms	This organization has a digital system for ideas, which are selected and evaluated by the CEO. The middle managers perceive, to a lesser degree, a structure for projects.	2

Financial rewards	In this organization additional compensation is distributed yearly however it is not related to projects or milestones in projects.	1
Non-financial Rewards	The middle managers perceive non-financial rewards in terms of compliments or recognition when they come up with something new.	3
Resources (time)	In this organization, the availability of time is sometimes a problem because everyone is very busy. However, for NB projects time is reserved. Money is often available because it is reserved for NB projects in the strategic roadmap. The middle managers perceive that other resources such as raw materials are present.	2
Resources (networking)	The middle managers experience that they can network within the organization. There is a lot of knowledge available and middle managers can easily share and receive this knowledge due to the informal organization.	3
Strategic legitimation	The middle managers perceive strategic legitimation for ND projects even if this project is outside the core business of the organization. There is also strategic legitimation for long-term projects.	1

* The score is based on the qualitative research. (3) Indicates factor is present to a large extent, (2) indicates factor is present to moderate extent, and (1) indicates factor is present to a small extent.

4.1.3 BuilderCo

The middle managers in this organization widely perceive support from management. If your work was outstanding, it will be appreciated by the top management and they

stimulate that kind of attitude. Another manager stated that *"if I have good argumentation for something new, the management will give me support and stimulation."*. However, new ideas and NB projects only gain support when financial results not too far away. *"With this project the payback period is longer; and on the one hand I get support for this project because everybody knows that it is important, but on the other, if results are taking too long we fall back into old projects."*. This implies that there is a lot of support from the management, but the support will decrease when there is a lack of short-term results and orientation.

The focus on short-term orientation is generally experienced by the middle managers. Interestingly, the strategy is long-term oriented but the middle managers claimed that, in practice, this is not the case. *"The general orientation is on the long-run, but the short-term is prioritized, which often causes stagnation on long-term projects."*. To illustrate this, projects with a short payback period gain more priority than NB projects which often need a longer payback period. The perspective of the organization is more on so-called 'low-hanging fruits' to increase financial results on the short term. *"The focus is mainly on the short-term orientation and on results from an investment company being on top of our group structure. So the focus is on financial controls."*. As phrased by a middle manager, this short-term focus is the result of an investment company which employs a pay-back period of two years. Therefore, investments in long-term projects without quick earnings are difficult to start up. In addition, work discretion/autonomy is experienced to a large extent by the middle managers. Most of them perceive a lot of freedom to perform their job and feel that they can work on their own ideas when these are defined in a proper way. *"Our organization gives us a lot of freedom to find new ideas. If you can define these ideas properly, you have the possibilities to work on it. There is no obstacle for proposing ideas."*.

Apart from the culture-related factors, the middle managers perceive a flat, decentralized, and informal structure. For example, according to one manager, the lines between the top management and operational processes are short, even the door of the CEO is always open, which implies the informal structure of the organization. Furthermore, there is fast feedback and horizontal communication. *"The structure of our organization is very flat, there are short lines and there is a lot of decentralized decision making which stimulates projects because there is a lot of communication and you can switch very easily"*. In addition, administrative mechanisms are perceived to a lesser degree. According to the middle managers, there is no rigid system to select and evaluate projects. Middle managers have to make a business case out of an idea, which is evaluated by the CEO. Although, a set of criteria for the evaluation of

these ideas is not present, the general criterion is that the business case must have a short payback period. *"There is no rigid system for evaluating ideas, I make a business case out of my idea and then I evaluate it with the CEO and my manager, and mostly the criteria circle around the low-hanging fruit potential".* According to the managers, projects are more formally structured. The organization makes use of a so-called 'game plan' to introduce a new project. In this 'game plan' projects are structured with milestones and it describes which resources and employees are needed at what time. *"We work with NP introduction; this is a structured approach for projects with milestones. We call it a game plan.". "We work with a game plan, which outlines how we are going to develop initiatives and describes what is needed from who.".*

The extents to which reward systems are perceived are mixed. There is only one middle manager who claimed that he gets additional financial compensation if his project results in additional turnover, the other managers do not. *"There are no additional financial rewards at BuilderCo, and that is not necessary anyway".* However, the managers generally perceive non-financial rewards to a larger extent. To illustrate this, *"There is verbal recognition for my work. And you can get more responsibility if you want that".* Non-financial rewards are not always reflected in more responsibilities, since that will lead to too many promotions, however, one can get more freedom in one's own ideas. *"It is not always practical to give people more responsibility because at some point they will reach the management chair, instead they get more freedom in their own ideas and track record."*

In this organization, there is a lack of resources in terms of time and money according to the middle managers. Generally the middle managers do not have the time to work on new ideas or NB projects. The same problem occurs concerning the availability of money. One of the managers claimed that the availability of money and time is used by short-term projects, which causes a lack of resources for NB projects. *"There are brainstorming sessions for new ideas; however the priority lies with the short-term projects so there is not enough time to work on these long-term ideas.". "There is not a lot of money present to work on new things with high uncertainty and long-term orientation.".* In contrast, resources in terms of knowledge are available to a large extent. *"R&D has a lot of knowledge, and that stimulates the development of a project. There are no obstacles in terms of knowledge.".* This is also reflected in the possibilities to network within this organization. There are possibilities to network with different disciplines to gain additional knowledge. To illustrate this, one middle manager stated that *"There are great possibilities to network here when you need additional*

knowledge, e.g. I have a lot of ideas and I can paint a practical picture of it, yet the marketing department helps me to develop a nice story, while I ask R&D for technical support."

Finally, the middle managers do not perceive strategic legitimation for NB projects to a large extent. According to them, it is not the case that NB projects do not receive strategic legitimation at all, but the focus is on short-term projects. This is reflected in the distribution of resources, because for short-term projects, more time and money is reserved. So, there is no strategic legitimation if the payback period is too long. *"If there is an idea or trend with a high potential, then it is strategically legitimated, however this is mostly the case when there are results on the short-term, even if other projects on the long-term are more promising. This is also the result of being part of a larger company, which is led by an investment company."*

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Table 7. Case 3 BuilderCo.

Factor	How is the factor experienced in the organization?	Score*
Management support	The middle managers perceive that outstanding work and creativity is stimulated and supported by the management team. However, it depends on the payback period of a project. If financial results take too long, the support will decrease.	3
Long-term orientation	The focus of this organization is on the short-term. Projects with a short payback period get priority above long-term projects. This is a result of the investment company leading the corporate organization, which employs a payback period of two years.	1
Work discretion/ autonomy	The middle managers perceive a lot of freedom to perform their jobs. Employees also get freedom to work on ideas when they define them properly.	3

Organic structure	The middle managers characterize the structure of this organization as flat, informal, and decentralized. With fast feedback and horizontal communication between employees.	3
Administrative mechanisms	There is no system to select and evaluate ideas. Middle managers have to prepare a business case and the CEO will select and evaluate these cases. If this results in a project, rigid structures are set into place using milestones, called a game plan.	2
Financial rewards	Some middle managers have received additional financial compensations, but that depends on their position. Also, the financial reward is not based on mile stones in a project, but on its additional turnover.	1
Non-financial Rewards	The middle managers perceive verbal compliments and recognition. Sometimes non-financial rewards are reflected in more responsibility if they can appreciate it.	3
Resources (time)	The middle managers experience a lack of time regarding NB development. Most of the time is invested in short-term projects. This is also true for financial resources. Money will not be invested in long-term projects with higher uncertainty.	1
Resources (networking)	Middle managers can easily network within their organization because there is a lot of knowledge present and available.	3
Strategic legitimation	The middle managers perceive a lack of strategic legitimation for NB projects with a longer payback period.	1

4.1.4 LightCo

The middle managers of LightCo do not experience homogeneity in the culture-related factors. First of all, management support is widely perceived as stimulating by the middle managers. The management encourages middle managers to come up with NB ideas as well as work on NB projects. They also facilitate middle managers if needed. *"Searching for NB is stimulated a lot, if there is chance to succeed, I get a lot of support and freedom to work on it.". "Although there is no focus on this NB project, I get support in terms of pro-active reactions, for example: if resources are needed, in terms of repairing broken applications for the project as well, it is pro-actively covered.".* Aside from this, the middle managers perceive a focus on the short-term, in favor of the long-term. To illustrate this, the organization functions more or less as a cash cow for the corporate organization. Moreover, the organization's aim is to win the end game in their industry, and therefore the focus is on short-term projects. *"There is no focus on this NB project because it is not the most important project; we focus more on cost price reduction because we want to win the end game.". "There is no focus on NB creation projects because short-term earnings are more important.".* Additionally, the middle managers perceive, to a large extent work discretion/autonomy. The middle managers have freedom to perform their jobs and have responsibilities. *"Everyone has a lot of responsibility and freedom in their work.".* Though there only is freedom to work on NB projects when the other activities are not neglected. *"I have the freedom to work on NB projects if I do not neglect the other activities.".*

The middle managers perceive the structure as organic. This is reflected by a flat and informal structure with less procedures. The middle managers can work across disciplines, which improves knowledge sharing and communication. *"We have flat organization, we have a broader scope than our own discipline so there is a lot of knowledge-sharing and shared vision, and that stimulates".* Moreover, even the plant manager is approachable for feedback. *"You can even speak easily to plant manager for feedback and compliments".* In contrast, the middle managers also perceive the presence of administrative mechanisms. To start, middle managers have to make a project chart of their ideas and, later on, all project charts are selected and evaluated. *"There is a system for evaluating and selecting ideas, first we have to make a plan with a budget etc. After finishing, we have to score it with the MT based on the success rate.".* Moreover, when a project chart gets through to the project phase, a structured

approach is used to accomplish the project. The project is carried out by a committee which integrates milestones into the project structure. *"Projects are carried out by a committee, a milestone structure is used and every time the progress has to be reported."*. An additional financial rewards system is also present; however this is not related to milestones in NB projects, additional risk in NB projects, or projects in general. *"Rewards are present but not for milestones in projects or projects in general, more in terms of personal development."*. Furthermore, the middle managers perceive, to a moderate, extent non-financial rewards. To illustrate this, non-financial rewards are not directly, but more indirectly given; *"Not very direct, however that depends on the department, but they let me know that they are happy with my work, and it works stimulating." "We receive verbal recognition, but not in terms of more responsibilities."*.

In this organization the middle managers perceive, to a small extent, the availability of resources. First of all, the middle managers are so busy with the current exploitation of their industry as well as incremental innovations, that there is hardly any time to work on NB projects. *"Time is a problem when the project is long-term, because it has no focus."*. Sometimes there are so many projects, that projects are classified 'priority', however NB projects do not have priority which results in less time available for these kind of projects. *"Sometimes there are so many projects, that I do not have the time to do everything, projects are then categorized according to priority. This NB project does not have priority, so I have no time work on it and that does not stimulate."*. Second, the availability of money is often a problem because it is only available when a year closes with additional profits. Furthermore, less money is invested in long-term projects. *"Money is a problem when it is a long-term project then it has no focus."*.

The middle managers perceive a large extent the possibilities to network within the organization. When middle managers need knowledge, they can easily find the required employees. *"Networking is very easy within this organization, when I need knowledge, I can easily go to other departments. Most employees have worked here for a long time and even if someone has switched in his position, you can find each other."*. Finally, middle managers do not perceive a lot of strategic legitimation for NB projects. This is mainly the result of two things. First, the organization focusses on winning the end game in order to survive, and therefore the focus is more on projects which are short-term. *"Our goal is to win the end game and thus short-term projects are more stimulated, which takes up all our time. NB projects for the long run are difficult because our corporate organization will not provide us*

with the needed resources.". Second, the corporate organization does not strategically legitimize long-term NB projects because they favor short-term financial results. *"We do not get the opportunity from the corporate organization to work on this NB project so we have to work under the radar". "There is more strategic legitimation for short-term projects because these projects deliver fast money; therefore we do not have much time for long-term projects such as this NB project."*

Table 8. Case 4 LightCo.

Factor	How is the factor experienced in the organization?	Score*
Management support	The middle managers perceive a lot of management support for new ideas and NB projects; however the same management also supports short-term projects.	3
Long-term orientation	There is no focus on NB projects because short-term earnings are more important. The organization functions as a cash cow for the corporate organization. The organization's aim is to win the end game and therefore they focus on the short-term.	1
Work discretion/ autonomy	The middle managers perceive a lot of freedom in their jobs and have responsibilities. There is freedom to work on NB projects as well, if one does not neglect other activities.	3
Organic structure	The structure of this organization is flat, informal, and there are less procedures. The middle managers can work across disciplines.	3
Administrative mechanisms	Middle managers perceive the presence of administrative mechanisms because there is a system to select, evaluate, and implement ideas. The projects are well-structured.	3

Financial rewards	There is an additional financial rewards system; however it is not linked to milestones in projects or to the additional risk which is involved.	1
Non-financial Rewards	The middle managers receive non-financial rewards indirectly more often than directly. This depends on the department of the organization.	2
Resources (time)	The availability of resources is perceived to a small extent by the middle managers. There is not enough time to work on NB projects. Moreover, money is only invested if there are additional profits.	1
Resources (networking)	The middle managers experience that they can network within the organization to a large extent. There is a lot of knowledge and most employees have worked there for a long time so everyone can find each other.	3
Strategic legitimation	There is not much strategic legitimation for NB projects because the payback period is too long. The corporate organization also employs a payback period of two years and does not give strategic legitimation for NB projects.	1

* The score is based on the qualitative research. (3) Indicates factor is present to a large extent, (2) indicates factor is present to moderate extent, and (1) indicates factors is present to a small extent.

4.2 Cross-case analysis

4.2.1 Culture-related factors

Culture-related factors encompass management support, long-term orientation, and work discretion/autonomy. A big diversity is found in how these factors were reported across cases. According to table 9 there is a big difference between the entrepreneurial organizations and the non-entrepreneurial organizations regarding long-term orientation. TechServCo and ErgoCo both have a good balance between long-term orientation and short-term orientation; however, at TechServCo there seems to be more focus on the long-run in comparison with ErgoCo. To illustrate this, TechServCo highly invests in NB workgroups to strategically strengthen their service. The non-entrepreneurial organizations BuilderCo and LightCo, however, have a strong focus on the short-term. For example, LightCo invests mostly in incremental innovations because they want to win the end game. These big differences suggest that long-term orientation is both necessary and sufficient to the CE process and is therefore indicated as a crucial factor. These differences are partially supported by the quantitative findings. This study assumes that a high score on long-term orientation and a low score on short-term orientation implies a focus on the long-term. This is found only at TechServCo (M: long-term: 3.88, M: short-term: 2.50), the other cases score moderately on both factors. Interestingly, ErgoCo scores moderately on long-term orientation (3.38) and relatively high on short-term orientation (3.83), which is in contrast with the qualitative findings. Therefore, the quantitative results partially reconfirm the qualitative results.

Aside from this, there is no big difference between the four organizations regarding management support. However, management support seems to differ in nature across cases. Whereas the management of both non-entrepreneurial cases and ErgoCo stimulate the middle managers to come up with new ideas and are searching for NB. The management of TechServCo facilitates the middle managers to develop NB ideas by organizing discipline groups and workgroups. Therefore, TechServCo seems to be more pro-active in stimulating middle managers to generate NB ideas. However, it is questionable whether a different nature of management support is sufficient to the CE process since all the organizations have a supporting management. Therefore, the results indicate that management support does not be sufficient but it can be necessary for the CE process. The quantitative results partially support the qualitative results. At first, TechServCo has the highest score (M: 3.88) of the four organizations which supports the assumed different nature of management support between TechServCo and the other organizations. Second, the other entrepreneurial organization,

ErgoCo has the lowest score (M: 2.72) which contradicts the qualitative findings. The non-entrepreneurial organizations have a moderate score on management support. Thus, the quantitative results partially reconfirm the qualitative results.

Finally, from table 9 can be derived that there is no big difference in work discretion/autonomy across the four organizations. In all organizations, the middle managers perceive freedom in their work, freedom to work on new ideas, and responsibilities. Since there is a relatively large extent of work discretion/autonomy in the entrepreneurial and non-entrepreneurial organizations, work discretion/autonomy does not seem to be sufficient but it can be necessary for the CE process. The quantitative results support these similarities, because the organizations score relatively high on work discretion/autonomy. Specifically, TechServCo has the highest score (M: 4.43) and BuilderCo has the lowest score (M: 4.21). The small difference between the highest and lowest score reflects the similarities between the four organizations regarding work discretion/autonomy. Therefore, the quantitative results reconfirm the qualitative results.

Table 9. Cross-case analysis culture-related factors.

Cases	Sc*	Management support	Sc*	Long-term orientation	Sc*	Work discretion/autonomy
TechServCo	3	*"The management facilitates ideas, projects and NB ideas with time and money. We have some workgroups which are called IA and PM, and the employees involved get 6 to 8 hours per week as well as an amount of money to develop these NB projects."*	3	*"There is always a small balance between profit on the short-term and investment on the long-term, however in this field of tension we focus on the long-term. That is the common thread but sometimes we focus on the short-term to end a year with profit. That does not obstruct the long-term projects."*	3	*"The freedom and autonomy I perceive stimulates me to work on the project. I do not have to wait for others, I can just go. I do not like working in a restricted project so this stimulates al lot.". "We do not have certain job descriptions but we work more in roles. That gives us the opportunity to get a broader perspective."*
ErgoCo	3	*"The CEO stimulates to come up with creative ideas and these ideas can be integrated into the roadmap."*	2	*"There is a good balance between long-term and short-term orientation, the owner of this organization has a long-term vision and NPD's are in line with that vision., therefore we invest time and money in the kind of projects which do not deliver fast money."*	3	*"I have a lot of freedom in my work, of course I have goals but I have freedom to achieve these goals and that stimulates me because it enhances creativity."*

	Sc*		Sc*		Sc*	
BuilderCo	3	*"If I have a decent argumentation for something new, then the management will give me support."* *"If you dare to stick your neck out, it will be appreciated. This is a key point of BuilderCo. That will be supported."*	1	*"The focus is mainly on the short-term orientation which results from an investment company being on top of our group structure. So the focus is on financial controls.".* *"The focus is on the short term and therefore there is not a lot of time and money left for projects and ideas on the long-term."*	3	*"BuilderCo gives a lot of freedom to its employees to find new ideas. If you can define these ideas in a proper way, you have the possibility to work on it. There is no obstacle for proposing ideas."*
LightCo	3	*"Searching for NB is stimulated a lot, if there is a chance to succeed, I get a lot of support and freedom to work on it".*	1	*"I think the focus is on the short-term because most projects are developed to keep customers and this kind of projects gain more priority than long-term projects. This is obstructive because I do not have time for this NB project."*	3	*"I have a lot of freedom, I make agreements with my supervisor but I get the freedom to try and that stimulates me."*

Sc* = the score is based on the qualitative research. (3) Indicates factor is present to a large extent, (2) indicates factor is present to moderate extent, and (1) indicates factor is present to a small extent.

4.2.2 Structure-related factors

Structure-related factors include organic structure and administrative mechanisms. There are no big differences found across cases regarding these factors. From table 10 can be derived that there is no big difference between the four organizations in terms of organic structure. At the entrepreneurial organizations and the non-entrepreneurial organizations a flat, open, and informal structure is perceived by middle managers. Moreover, decentralized decision power as well as fewer procedures are experienced by the middle managers. However, the entrepreneurial organization ErgoCo has a lot of procedures since they cater to the medical industry. Due to the large extent of organic structure within the four cases there are no big differences in experiences, and organic structure does not seem to be sufficient but it can be necessary for the CE process. The quantitative results partially support the qualitative results. To start, all the organizations score relatively high on organic structure. However, there are differences between the organizations. TechServCo has the highest score

(M: 6.39[1]) and ErgoCo has the lowest score (M: 4.75[1]) regarding organic structure. This does imply a big difference between the entrepreneurial organizations. The non-entrepreneurial organizations, BuilderCo and LightCo scored respectively (M: 5.14[1]) and (5.57[1]), which is also a relatively big difference in comparison to TechServCo. Therefore, the quantitative findings reconfirm the qualitative findings because both reflect a large extent of organic structures. However, the quantitative findings contradict the qualitative findings in terms of difference. So, it could be that the nature of this factor differs across cases, however, the results are not detailed and consistent enough to give insight into these differences.

Furthermore, from table 10 can be derived that there are differences regarding the extent in which administrative mechanisms are perceived. At LightCo and BuilderCo the usage of administrative mechanisms are experienced to a higher degree than at the entrepreneurial cases. Whereas BuilderCo evaluates and selects the proposed ideas informally, LightCo uses a more formal structure to select the ideas. Additionally, both organizations have a formal structure to organize projects. In contrast, the entrepreneurial organizations perceive administrative mechanisms to a lesser degree. ErgoCo does have a digital system to select and evaluate ideas, but the way they structure their projects is not always as intended. The most extreme case is TechServCo which neither uses a system to evaluate and select ideas, nor has a formal structure for their projects. According to these findings, the entrepreneurial organizations employ administrative mechanisms to a less extent in comparison to the non-entrepreneurial cases and therefore, it can be suggested that administrative mechanisms are not sufficient and not necessary for the CE process. The quantitative results broadly support the qualitative results. First of all, LichtCo has the highest score (M: 3.30) and TechServCo has the lowest score (M: 2.38), which are in line with the qualitative results. In contrast, ErgoCo has a slightly higher score (M: 2.75) than BuilderCo (M: 2.67), which contradicts the qualitative results. Therefore, the quantitative results partially reconfirm the qualitative results.

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[1] The organicity scale is measured with a 7 point Likert scale; therefore quantitative scores can vary from 1 till 7.

Table 10. Cross-case analysis structure-related factors.

Cases	Sc*	Organic structure	Sc*	Administrative mechanisms
TechServCo	3	*"Our structure is very flat and we work across different areas, in fact we work where work is. It looks fuzzy, but that is not true, it stimulates cross-fertilization and that stimulates the velocity of projects."*	1	*"There is no system to evaluate ideas, projects or NB, there are no key points. That process is automated. This stimulates because it is similar to start ups, they believe in it, got money and go for it". "It depends on our manager whether a project is very structured and that can work obstructive, on the other hand, our leadership program stimulates the use of milestones in projects."*
ErgoCo	3	*"Our organization is very flat, informal and that stimulates the development of the NPD project.". "The structure is also very open, financial facts are openly discussed and presented to the employees."*	2	*"We have a digital idea system, where you can upload an idea and the CEO evaluates these ideas and starts them up.". "We try to structure our project, but in reality it does not work that way, because sometimes we have to deliver faster. It is hard to maintain de structure till the end of the project"*
BuilderCo	3	*"The structure of our organization is very flat, lines are short and there is a lot of decentralized decision making which stimulates projects, because there is a lot of communication and you can switch easily"*	2	*"There is no a rigid system for evaluating ideas, I make a business case of my idea and then I evaluate it with the CEO and my manager, and mostly the criteria circle around the low-hanging fruit potential" "We work with NP introduction; this is a structured approach for projects using milestones. We call it a game plan."*
LightCo	3	*"We have a flat organization, we hae broader view than our own discipline, so there is a lot of knowledge sharing and shared vision and that stimulates.". "The structure is very flat and the lines are short even with SBU CEO and that stimulates because we can switch quickly and there is fast feedback to questions."*	3	*"There is a system for evaluating and selecting ideas, first we have to make a plan with a budget etc. After that we have to score this plan together with the MT based on the success rate.". "Projects are carried out by a committee, a mile stone structure is used and every time the progress has to be reported."*

Sc* = the score is based on the qualitative research. (3) Indicates factor is present to a large extent, (2) indicates factor is present to moderate extent, and (1) indicates factor is present to a small extent.

4.2.3 Reward systems

Reward systems encompass financial rewards and non-financial rewards. There are no big differences across cases regarding these factors. According to table 11 the results vary

from no additional rewards at all to a yearly bonus. However, not one of the organizations offers their middle managers additional financial rewards for additional risk or milestones in CE projects. Since there are no big differences across cases and financial rewards are perceived to a low extent, it seems that this factor is not sufficient and not necessary for the CE process. The quantitative results support the qualitative results. To start, all organizations scored low on financial rewards, which matches the qualitative results. According to the quantitative results, there are some differences between the organizations. BuilderCo offers financial rewards to a larger extent (M: 2.40) than the other organizations and ErgoCo offers financial rewards to a lesser extent (M: 1.15) than the other organizations. TechServCo and LightCo scored (M: 1.80) and (M: 2.04) respectively. The differences between cases reflect the qualitative results; therefore the quantitative results reconfirm the qualitative results.

Similar to the financial rewards, there are no big differences were found between the four organizations regarding non-financial rewards. In almost all organizations non-financial rewards are perceived to a large extent by the middle managers. Only at LightCo, the middle managers experience indirect recognition rather than direct. In the other cases, the middle managers receive non-financial rewards in terms of compliments and more responsibilities. Furthermore, TechServCo gives their middle managers non-financial rewards such as team trips. However, at all organizations, the middle managers receive non-financial rewards and therefore, non-financial rewards do not seem to be sufficient but it can be necessary for the CE process. The quantitative results partially support the qualitative results. Interestingly, LightCo scored relatively high in comparison to the other organizations on non-financial rewards (M: 3.76), which contradicts the qualitative findings. Moreover, ErgoCo scored relatively low on non-financial rewards (M: 2.30), which is also in contrast with the qualitative results. Therefore, the quantitative results partially reconfirm the qualitative findings.

Table 11. Cross-case analysis reward systems.

Case	Sc*	Financial rewards	Sc*	Non-financial rewards
TechServCo	1	*"We do not have additional financial rewards except for some managerial positions."*	3	*"We reward our employees in non-financial ways in terms of team trips, compliments, and more responsibilities."*

	Sc*		Sc*	
ErgoCo	1	*"There is a yearly financial compensation for the whole organization but it is not specified for projects or ideas."*	3	*"If I come up with something new such as a product, I get recognition." "I get recognition if I do my work outstandingly."*
BuilderCo	1	*"There is no certain bonus structure, by high exception I can get an additional bonus but that is not project related."*	3	*"There is verbal recognition for my work and you can get more responsibility if you appreciates that."*
LightCo	1	*"Rewards are present but not for milestones in projects or projects in general. I receive rewards more in terms of personal development."*	2	*"We get verbal recognition but not in terms of more responsibilities."*

Sc* = the score is based on the qualitative research. (3) Indicates factor is present to a large extent, (2) indicates factor is present to moderate extent, and (1) indicates factor is present to a small extent.

4.2.4 The availability of resources

The availability of resources includes resources (e.g. time, money) and the possibility to network within the organization. According table 12 there are big differences across cases regarding the availability of resources. First of all, the entrepreneurial organizations have to a larger extent availability of resources than the non-entrepreneurial organizations. At TechServCo, the middle managers and employees can work 6 to 8 hours a week in NB workgroups, and a certain amount of money is reserved for this purpose as well. At the other entrepreneurial organization, ErgoCo, the availability of resources is also experienced but in a lesser degree. ErgoCo reserves time and money for NB projects, however most of these resources are investments in the exploitation of their current business. In contrast, at BuilderCo and LightCo the availability of time is hardly there according to the middle managers. The middle managers are too busy with their daily work, which results in a lack of time to work on NB projects. Moreover, at LightCo there is money available only when there are additional profits, which often results in a lack of money available for NB projects. Also BuilderCo hardly invests in NB with a high uncertainty. These big differences in the availability of resources suggest that the availability of resources is sufficient and necessary for the CE process and is therefore indicated as a crucial factor. The qualitative results partially support the quantitative results. TechServCo scored higher (M: 3.90) on the availability of resources in comparison to LightCo (M: 2.92), BuilderCo (M: 2.90), and ErgoCo (M: 2.40). This goes hand in hand with the qualitative findings. Interestingly, ErgoCo

has the lowest score, which contrasts with the qualitative findings. Therefore, the quantitative results partially reconfirm the qualitative results.

Aside from this, there are no big differences between the four organizations regarding the possibilities to network within the organization. However, there seems to be a difference in the nature of this factor. To start, with all organizations, the middle managers experience possibilities to network because there is a lot of knowledge available and there is a formal setting, which makes networking within the organization easy. TechServCo stimulates networking within the organization and also arranges meetings both within and across disciplines, which enhances knowledge sharing and cross-fertilization. Therefore it seems to be that TechServCo is pro-active in stimulating networking within the organization. However, it is questionable whether a difference in nature of this factor is sufficient to the CE process since all the organizations experience possibilities to network. Thus, based on these results, networking does not seem to be sufficient but it can be necessary for the CE process. The quantitative results partially support the qualitative results. First of all, the organizations score relatively high on networking, which is in line with the qualitative results. Second, TechServCo has the highest score (M: 5.97[2]) on networking which could reflect the different nature of networking as perceived in this organization. In contrast with the qualitative findings, there are also differences between the scores of the other organizations. The non-entrepreneurial organizations BuilderCo and LightCo score (M: 4.67[2]) and (M: 5.09[2]) respectively on networking. Moreover, ErgoCo has the lowest score (M: 4.47[2]) on networking. Therefore the quantitative results partially reconfirm the qualitative results.

Table 12. Cross-case analysis of the availability of resources.

Case	Sc*	Availability of resources	Sc*	Networking
TechServCo	3	*"Employees have time for NB in their workgroups and in discipline groups they have time to think about their own ideas and disciplines." ."Our workgroups receive a certain amount of money to develop NB, e.g. IA or PM.*	3	*"Networking in our company is very easy and the organization stimulates it a lot. There are work meetings where e.g. business administration employees present to each other what they have done for different clients. So there is a lot of dynamism and knowledge-sharing."*

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[2] The network scale is measured with a 7 point Likert scale; therefore quantitative scores can vary from 1 till 7.

	Sc*		Sc*	
ErgoCo	2	*"For NPD such as multifunctional ergo-metric bicycles, time is reserved for working on it.". "For every discipline there is one employee, so if there is a problem I have to make a choice and that will lead to less time left for NPD.". "In our roadmap, a certain amount of money is reserved for the development of this NPD project.". "There are enough raw materials to experiment with, and if we do not have something, we can buy it."*	3	*"It is easy to network here; I can gain knowledge from every corner of the organization and, for example our developers often walk to the production department to request information about the nature of a raw material, this will help to identify problems before they occur.".*
BuilderCo	1	*"There are brainstorming sessions for new ideas; however the focus is on the short-term projects so there is not enough time to work on these long-term ideas.". "There is not a lot of money available to work on new ideas with high uncertainty and long-term orientation". "R&D has a lot of knowledge and that stimulates the development of a project. There are no obstacles in terms of knowledge."*	3	*"There are great possibilities for networking here if I need additional knowledge, e.g. I have a lot of ideas and I can paint a decent practical picture of it. Yet the marketing department d me to develop a nice story around it, while I ask R&D for technical support."*
LightCo	1	*"The capacity is a problem because we have a restricted group of employees, which have to focus on our production, and then we also have incremental innovation on products, so there is not much time left for NB.". "There is no enough money for the NB project; the money we invest in the project depends on the financial results."*	3	*"Networking is very easy in this organization, if I need knowledge, I can easily go to other departments, most employees have worked here for a long time and even if someone has switched in his position, I can find others."*

Sc* = the score is based on the qualitative research. (3) Indicates factor is present to a large extent, (2) indicates factor is present to moderate extent, and (1) indicates factor is present to a small extent.

4.2.5 Strategic legitimation

Strategic legitimation encompasses the legitimation for NB business projects from a strategic point of view. There are big differences across cases regarding strategic legitimation. The most striking difference can be found between the entrepreneurial organizations and the non-entrepreneurial organizations. Firstly, both TechServCo and ErgoCo strategically legitimize NB projects. The difference between those two organizations is that ErgoCo is part of a holding, which results in a larger scope and therefore there is also strategic legitimation for projects, which are not in line with the core business. On the other hand, TechServCo strategically legitimizes NB projects if it could improve the competitive advantage of organizations (their clients) in general. This strategy is very broad, which implies that a lot of

NB projects get strategic legitimation. In contrast, BuilderCo and LightCo do not strategically legitimize projects if the payback period of a project is considered too long. Furthermore, the corporate organization of LightCo does not allow LightCo to work on NB projects because the corporate organization only invests in industries totally different from LightCo. Therefore they have to work under the radar since there is no strategic legitimation for NB projects. These big differences across cases suggest that strategic legitimation is sufficient and necessary for the CE process and is therefore indicated as a crucial factor.

Table 13. Cross-case analysis strategic legitimation.

Case	Sc*	Strategic legitimation
TechServCo	3	*"NB will get strategic legitimation if it is in line with our core business; for example PM. That does not mean that it is not new for us but the approach is the same."*
ErgoCo	3	*"There is even strategic legitimation for projects which do not belong to the core-business of ErgoCo because we are part of a holding, which has a broader scope.". "There is strategic legitimation for long-term projects such as NPD because the owner has a long-term vision, and time and money is reserved for it."*
BuilderCo	1	*"There is no strategic legitimation if the pay-back period is considered too long."*
LightCo	1	*"We do not get the opportunities from the corporate organization to work on this NB project so we have to work under the radar". "There is more strategic legitimation for short-term projects because they deliver fast money, and therefore we do not have much time for long-term projects such as this NB project."*

Sc* = the score is based on the qualitative research. (3) Indicates factor is present to a large extent, (2) indicates factor is present to moderate extent, and (1) indicates factor is present to a small extent.

4.3 Patterns between factors across cases

The within-case analysis as well as the cross-case analysis provide insights about possible patterns across the cases. Based on the cross case analysis the most striking differences between the four cases are found in: long-term orientation, the availability of resources, and strategic legitimation. The entrepreneurial organizations TechServCo and ErgoCo experienced a high degree of these factors, which can imply a possible pattern. This pattern is supported by the results of the within-case analysis and will be described based on

two opposite cases. First of all, it seems that a focus on long-term orientation determines whether an organization strategically legitimizes NB projects or not. For example at ErgoCo, the long-term orientation of the owner results in strategic legitimation for long-term projects. *"There is strategic legitimation for long-term projects such as NPD because the owner has a long-term vision, and time and money is reserved for it."*. The opposite cases show the same pattern in opposite sense. At BuilderCo there is a focus on the short-term because of the investment company leading the corporate organization; therefore long-term projects do not get strategic legitimation. *"The focus is on the short term and therefore there is not a lot of time and money left for projects and ideas on the long-term."*. *"There is more strategic legitimation for short-term projects and that is also stimulated by the BuilderCo group. Despite the fact that this BU is free in a lot of choices, short-term facts and controls are important for the BuilderCo group"*. The above mentioned phrases also show that the focus on long- or short-term orientation and thus the strategic legitimation seems to determine the distribution of resources. Since the opposite cases show the same patterns in the opposite manner, it can be assumed that a pattern exists between the focus on long-term orientation, strategic legitimation, and the availability of resources.

4.4 The nature of factors

In the above sections, the individual cases and their differences regarding the studied factors are described. The results indicate three types of factors in this study, namely: crucial factors, necessary but not sufficient factors, and not necessary and not sufficient factors. Factors are indicated as crucial when they are both sufficient and necessary for the CE process. Moreover, if a factor is not sufficient and not necessary and the middle managers do not highlight the stimulating role of a factor to the CE process, this factor is not important to the CE process. Table 14 provides an overview of the factors divided by those three indicated types. Additionally, according to the managers some factors also have an individual influence on the CE process. This means that the extent to which a certain factor is perceived can obstruct or stimulate the CE process.

Regarding the culture-related factors, this study indicates that long-term orientation is crucial to the CE process. Moreover, middle managers of the non-entrepreneurial organizations argued that a too small extent of long-term orientation obstructs NB projects. *"I think the focus is on the short-term because projects are based on keeping customers and these kind of projects have more priority than long-term projects. This works obstructive because now I do not have time for this NB project."(Middle manager LightCo)*. These arguments are in line

with H3; long-term orientation positively influences the CE process, and therefore, H3 is supported. Furthermore, management support is not indicated as sufficient to the CE process since there is no big difference across cases. Still, it can be suggested that management support is necessary for the CE process, however the results cannot ensure that the CE process will not happen when management support is not experienced to a large extent. Additionally, the middle managers across cases did not directly state the stimulating power of management support to the CE process. However if the management stimulates to work on new ideas, that will stimulate the CE process as well. *"The CEO stimulates to come up with creative ideas and these ideas can be integrated into the roadmap."(Middle manager ErgoCo).* The arguments given above are in line with H1; management support positively influences the CE process, and therefore, H1 is supported.

Work discretion/autonomy is not indicated in this study as sufficient to the CE process since there is no big difference across cases. Yet, it can be suggested that work discretion/autonomy is necessary for the CE process when it is experienced in a desirable extent, however, the results cannot ensure that the CE process will not happen if work discretion is not desirably experienced. Furthermore, the extent in which work discretion/autonomy is perceived by the middle managers can either stimulate or obstruct the CE process. First of all, middle managers across cases have highlighted that work discretion/autonomy stimulates NB projects. *"I have a lot of freedom in my work, of course I have goals but I have freedom to achieve these goals and that stimulates me, because it enhances creativity."(Middle manager ErgoCo) "Employees like to work here because they have a lot of freedom to come up with ideas and that stimulates the generation of ideas and the development of projects."(Middle manager TechServCo).* However, the stimulating relationship between work discretion/autonomy and the CE process does not seem to be linear because a too large extent of it can obstruct the development of NB projects. To illustrate this, two middle managers of TechServCo argued that *"Our employees have a lot of freedom and autonomy but that does not always stimulate the project since those employees have freedom to choose between the client and the workgroup (e.g. IA,) and if employees always choose the client they cannot work 6 hours per week with the workgroup. This stagnates the project.".* Therefore, the positive relation between work discretion/autonomy and the CE process does not seem to be linear. The above mentioned arguments are in line with H2; work discretion/autonomy positively influences the CE process, and therefore, H2 is supported as long as work discretion is experienced to a desirable extent.

Regarding the structure-related factors, organic structure is not indicated as sufficient to the CE process. Though it can be suggested that an organic structure is necessary for the CE process when it is experienced to a desirable extent, the results cannot ensure that the CE process will not happen if an organic structure is not experienced to a desirable extent. Moreover, the extent in which it is perceived can either stimulate or obstruct the CE process. To start, middle managers across cases have argued the stimulating role of the organic structure because it can increase the velocity of an NB project. *"We have a very flat structure, short lines and the door of the CEO is always open, which simulates the development of projects." (Middle manager BuilderCo).* In contrast, too much of an organic structure can also obstruct the CE process. For example, a middle manager of TechServCo claimed that *"We have to be careful to ensure that in this open organization the work gets done. On the one hand this openness stimulates creativity and challenging each other but it also results in too many employees involved in a single project or too few employees actually working on a project."*. Moreover, similar problems are experienced at LightCo; *"The downside of this flat organization is that there is no discipline, which is dedicated responsible for this NB project."*. These quotes suggest that the stimulating relationship between the organic structure and the CE process is not linear. It can stimulate NB projects but too much organicity can also obstruct NB projects. These arguments are in line with H4; organic structure-related factors (e.g. informal, decentralized, flat hierarchy, structural differentiated, formal communication, scanning and integration) positively influence the CE process, and therefore H4 is supported when an organic structure is experienced to a desirable extent. Administrative mechanisms are indicated as not sufficient and not necessary for the CE process because the entrepreneurial organizations do not perceive administrative mechanisms to a large extent, in contrast with the two non-entrepreneurial organizations, and the entrepreneurial organizations are still "entrepreneurial". Moreover, the results regarding this factor show ambiguity about whether a large or a small extent of these mechanisms stimulates the CE process. Not one middle manager across cases highlighted the stimulating role of administrative mechanisms. However, the managers at TechServCo do contradict each other concerning the relationship of administrative mechanisms with the CE process; *"There is no system to evaluate ideas, projects or NB; there are no key points. That process is automatic and stimulates because it is similar to start ups, they believe in it, got money and go for it"*. *"Sometimes we miss the benchmark or criteria in for instance, our discipline groups because they invest a lot of hours into development but there is no measured output. Although I know that they have a lot of output, we need more criteria in these kind of groups to measure the investment potential."*.

These quotes imply that the results are ambiguous about the relationship between administrative mechanisms and the CE process. Given these arguments, it cannot be stated that these mechanisms either stimulate or do not stimulate the CE process, therefore H5; Administrative mechanisms positively influence the CE process, is not supported based on this study.

Regarding the reward systems, financial rewards are indicated as not sufficient and not necessary for the CE process because there is no big difference across cases and it is not used across all cases. Moreover, the middle managers across cases did not highlight the stimulating role of it to the CE process. In fact, most of the middle managers argued that intrinsic motivation is more stimulating than financial rewards. *"There are no additional financial rewards at BuilderCo, that is not necessary"(middle manager BuilderCo). "We have a normal salary structure but no additional rewards because we believe that intrinsic motivation is important."(Middle manager TechServCo)*. Although managers argue that intrinsic motivation is more important than extrinsic motivation (financial rewards), this is still just an opinion of managers and not a fact. Therefore, while it seems that financial rewards are not important to the CE process, this cannot be stated based on these results. Non-financial rewards are also not indicated as sufficient to the CE process since there is no big difference across cases. Still, it can be suggested that non-financial rewards are necessary to the CE process even though, the results cannot ensure that the CE process will not happen if non-financial rewards are not received to a large extent. Furthermore, the middle managers did not highlight the stimulating power of it to the CE process. Summarizing these arguments, H6; reward systems positively influence the CE process, is not supported based on this study.

The availability of resources is indicated as crucial to the CE process since the big differences between the entrepreneurial cases and the non-entrepreneurial cases. To strengthen this point, middle managers of non-entrepreneurial cases argued that a lack of resources obstructs the development of NB projects; *"Sometimes there are so many projects, that I do not have the time to do everything, projects are then categorized according to priority, but since this NB project does not have priority, I have no time work on it and that does not stimulate."(Middle manager LightCo)*. The above-mentioned arguments are in line with H7; The availability of time, financial resources, and knowledge are important resources and positively influence the CE process, and therefore, H7 is supported. Apart from this, networking is not indicated as sufficient to the CE process because there are no big differences across the organizations. Yet, it can be suggested that networking is necessary to the CE process, however the results cannot

ensure that the CE process will not happen if networking is not experienced to a large extent. Moreover, sharing knowledge and identifying problems in an early stage may stimulate the development of NB projects. *"It is easy to network here; I can gain knowledge from every corner of the organization and, for example, our developers often walk to the production department to request information about the nature of a raw material, this will help to identify problems before they occur."(Middle manager ErgoCo).* Although middle managers did not directly mention that networking stimulates the development of NB projects, they do indirectly because if these problems had not identified, the projects would have stagnated in a later stage. These arguments are in line with H8; networking positively influences the CE process, and therefore, H8 is supported.

Finally, strategic legitimation for NB projects is indicated as crucial for the CE process since there are big differences between the entrepreneurial and non-entrepreneurial cases. One middle manager of LightCo argued that strategic legitimation is important for the distribution of resources, and because NB projects are not strategically legitimatized in that organization, there is a lack of resources for NB projects. This indicates that a small extent of strategic legitimation for NB projects can obstruct the CE process indirectly. *"There is more strategic legitimation for short-term projects because they deliver fast money, therefore we do not have much time for long-term projects such as this NB project.".* Consistent with these arguments, this study hypothesized that strategic legitimation for the CE process positively influences the process, and therefore, H9 is supported.

Table 14. The factors indicated in three types.

	Sufficient and necessary (crucial)	Not sufficient, but can be necessary	Not sufficient and not necessary
Experienced to a high extent in all the cases	-	- Management support* - Work discretion/autonomy* - Organic structure* - Networking* - Reward systems; non-financial reward systems*	-

Experienced to a high extent at the entrepreneurial cases only	- Long-term orientation - The availability of resources -Strategic legitimation	-	-
Experienced to a high extent at the non-entrepreneurial cases only	-	-	- Administrative mechanisms
Not experienced in any case	-	-	- Reward systems; financial reward system

* These factors can be necessary to the CE process; however the results cannot confirm this relationship.

4.5 Summary of the results

This study analyzed the data in several ways. First, the within-case analysis has provided insights in how the different factors are perceived by middle managers in every single case. This analysis was the basis for the rest of the chapter. From the cross-case analysis can be derived that there are big differences across the cases. The most striking differences between the entrepreneurial and non-entrepreneurial organizations were found in long-term orientation, the availability of resources, and strategic legitimation. These factors can be indicated as crucial to the CE process. Second, patterns between these factors are found. It appears that long-term orientation determines which projects gain strategic legitimation, which is important for the distribution of resources. Finally, management support, work discretion/autonomy, organic structure and networking are indicated as factors which are not sufficient but can be necessary for the CE process. It also became clear that the positive relationship between both work discretion/autonomy and organic structure on one side, and the CE process on the other, is not linear. This indicates that with these factors, presence to a too large extent can obstruct the CE process.

5. Discussion

This chapter embodies a discussion about the different factors and how they are related to the CE process. Additionally, the patterns between the factors are described. The researcher further links these relationships and patterns to the literature. Some relationships match with the literature, while others do not. This leads to propositions which are the input for the conclusions. Subsequently, additional factors will be discussed and to end this chapter, the theoretical development of the PEOA will be described.

5.1 Culture-related factors

The results indicate that long-term orientation is crucial for the CE process since there are big differences between cases. The entrepreneurial cases in this study focus on NB projects which could result in potential new products or new services in the long run. For example, at TechServCo, the focus is clearly on strategic goals (long-term orientation) even if it sometimes negatively influences financial controls (short-term orientation). These results are in line with Zahra (1996), who found that long-term orientation is positively related with entrepreneurial activities. Further, management support is not sufficient, but can be necessary for the CE process because the results indicate that both non-entrepreneurial and entrepreneurial organizations experienced this factor to a large extent. Yet, this study cannot prove that management support is necessary for the CE process. However, the middle managers generally stated that their management stimulates them to work on new ideas, which is in line with the findings of Hornsby et al. (2002). Therefore, the results still point in the direction of management support stimulating the CE process. Finally, the results have indicated that work discretion/autonomy is not sufficient, but can be necessary to the CE process, because it is experienced to a large extent by the middle managers across cases. However, these findings do not show enough evidence to state that work discretion/autonomy is necessary for the CE process. Yet, the middle managers argued that responsibilities, freedom in their work and freedom to work on new ideas stimulate the development of NB projects. This is also in line with Hornsby et al. (2002), who stated that top-level managers who tolerate failure, provide decision-making freedom, and freedom from extreme supervision, and delegate authority and responsibility, also play a part in influencing entrepreneurial activities. In contrast with Hornsby et al. (2002), the results indicate that too much work discretion/autonomy can obstruct the CE process, and as such the relation between work discretion/autonomy and the CE process is not linear. This means that work

discretion/autonomy only stimulates the CE process when it is perceived to a desirable extent. Moreover, as far as the researcher knows, this is new to the literature. Concluding, long-term orientation is a crucial and stimulating determinant of the PEOA since it is sufficient and necessary to the CE process. In addition, both management support and work discretion/autonomy are stimulating determinants of the PEOA due to their effect on CE process.

Proposition 1: Long-term orientation is a crucial and stimulating determinant of the PEOA.

Proposition 2: Management support is a stimulating determinant of the PEOA.

Proposition 3: Work discretion/autonomy is a stimulating determinant of the PEOA, however too much of it can obstruct the CE process.

5.2 Structure-related factors

Next to culture related factors, structure related factors can also be important for the CE process. Referring to the results, however, an organic structure is not sufficient but can be necessary for the CE process since it is experienced to a large extent by the middle managers of both the entrepreneurial and the non-entrepreneurial organizations. Although, the findings cannot prove that an organic structure is necessary for the CE process, the middle managers argued that their informal, open, and decentralized structure stimulates the velocity of NB projects. This matches the study of Covin and Slevin (1988), who found strong support that an organic structure promotes entrepreneurial activities. In contrast, the results indicate that a too large extent of organic structure can obstruct the CE process, because then no one is dedicated to the NB project or it is unclear who is doing what. This suggests that the positive relationship between an organic structure and the CE process is not linear. Therefore, an organic structure can stimulate the CE process, whereas too much of it can obstruct it. Moreover, this is not new to the literature, Volberda (1993) argued that too much of an organic structure can result in a chaotic organization which will impede the CE process because there are uncontrolled and unfocused actions. Furthermore, the results show that administrative mechanisms are not sufficient and not necessary for the CE process because the middle managers at the entrepreneurial firms do not experience it to a large extent.

Moreover, the middle managers did not highlight the stimulating role of administrative mechanisms across cases. Therefore, no relationship is found between administrative mechanisms and the CE process. This finding opposes literature because Burgelman and Sayles (1986) noted the importance of administrative mechanisms regarding the evaluation, selection, and implementation of ideas. Concluding, an organic structure is a stimulating determinant to the PEOA because it stimulates the CE process. Additionally, based on this study, administrative mechanisms are not sufficient, not necessary, and not stimulating determinants of the PEOA because they are not sufficient, and not necessary, and not stimulating for the CE process.

> *Proposition 4: An organic structure is a stimulating determinant of the PEOA, however too much of it can obstruct the CE process.*

5.3 Reward systems

The results of this study do not indicate that financial rewards are sufficient and necessary to the CE process since it is not experienced across cases, and middle managers did not argue for its stimulating role in general. Since the middle managers at the entrepreneurial cases specifically did not experience a large extent of financial rewards and did not highlight that it would stimulate the CE process, there is no relationship found between financial rewards and the CE process. Again, this contradicts literature, because Brazeal (1996) found that financial rewards for milestones or additional risks in projects are positively related to entrepreneurial activities. One reason for this contradiction could be the general culture of the Northern Netherlands. Moreover, most managers across cases argue that financial rewards are not necessary and that intrinsic motivation is much more important for the development of new ideas etc. This could be a cultural aspect of the Northern Netherlands and therefore studies with research settings in America regarding this factor show differences. However, it could also be a cultural aspect that managers do not believe in the stimulating role of financial rewards, but that in practice however, financial rewards could stimulate the CE process, although this is not reflected in this study. On the other side, non-financial rewards are also indicated as not sufficient but can be necessary for the CE process since it is experienced to a large extent across cases. However, the middle managers did not argue for its stimulating role either. Although Hornsby et al. (2002) suggest that compliments, recognition, and more responsibilities can stimulate the CE process, this case study research cannot confirm that non-financial rewards are necessary or stimulating for the CE process. Moreover, while

Hornsby et al. (2002) argue that non-financial rewards stimulate entrepreneurial behavior, they did not find statistical evidence either. This can imply that non-financial rewards do not significantly stimulate the CE process. In short, financial and non-financial rewards are not sufficient, not necessary, and not stimulating determinants of the PEOA because they are not sufficient, not necessary, and not stimulating to the CE process based on this study.

5.4 The availability of resources

Although, reward systems do not seem to be so important for the CE process, the availability of resources is the opposite. In fact, the availability of resources is indicated as crucial to the CE process because there are big differences between the entrepreneurial cases and non-entrepreneurial cases. For example, at TechServCo NB workgroups can work 6 to 8 hours a week on NB ideas. In addition, money is reserved for these workgroups. At ErgoCo, the availability of resources is not experienced to an extent that large, but time and money is still reserved for NB projects. This is in line with literature because Hornsby et al. (2002) indicated resources as an important dimension of CE. Furthermore, Covin and Slevin (1991) and Hitt et al. (2001) argued that resources are the base of all activities in an organization and thus can facilitate or limit CE behavior. Furthermore, networking within organizations is indicated as not sufficient but can be necessary for the CE process because it is experienced to large extent across cases. Yet, this study cannot prove that management support is necessary for the CE process. Nevertheless, the middle managers of the entrepreneurial cases highlighted, although not explicitly, the importance of networking to the CE process because it can enhance knowledge-sharing and help identify problems at an early stage in the process. In line with these results, the literature pointed out that social capital (part of networking), and thus the transferability of resources is important for CE (Subramaniam and Youndt, 2005). In short, the availability of resources is a crucial and stimulating determinant of the PEOA, because it is sufficient and necessary to the CE process. Moreover, networking within organizations is a stimulating determinant of the PEOA, because it stimulates the CE process.

Proposition 5: The availability of resources is a crucial and stimulating determinant of the PEOA.

Proposition 6: Networking within the organization is a stimulating determinant of the PEOA.

5.5 Strategic legitimation

Finally, the results reveal that strategic legitimation for NB projects is crucial to the CE process as shown in the big differences between the entrepreneurial and the non-entrepreneurial organizations. Both of the entrepreneurial cases strategically legitimize NB projects. For example, TechServCo does it if it can lead to new services which can strengthen organizations' (clients) competitive advantage. This is in line with literature because Bouchard (2001) argued that if an organization strategically legitimizes the CE process, it is more likely that NB projects gain strategic legitimation. Therefore, strategic legitimation of the CE process is a crucial and stimulating determinant of the PEOA.

> *Proposition 7: Strategic legitimation of the CE process is a crucial and stimulating determinant of the PEOA.*

5.6 Propositions regarding the PEOA

After discussing the main results, seven propositions have been developed. These seven propositions are input for the conclusions and together lead to a revised theoretical conceptual framework (see section 6.1.3, p.71). This study found that three factors are crucial and stimulating determinants of the PEOA, which include (P1) long-term orientation, (P5) the availability of resources, and (P7) strategic legitimation. Moreover, four factors are indicated as stimulating determinants of the PEOA, which include (P2) management support, (P3) work discretion/autonomy, (P4) organic structure, and (P6) networking within the organization. In addition, this study did not find that administrative mechanisms, financial rewards, or non-financial rewards are sufficient, necessary or stimulating to the CE process, which implies that these factors do not determine the PEOA. However, literature highlights the importance of these factors for the CE process. Therefore, based on this study these factors cannot be ruled out as determinants of the PEOA, neither they can be proposed as potential determinants.

5.7 Patterns between factors

The big differences between the entrepreneurial cases and the non-entrepreneurial cases provide insights into crucial factors of the CE process and thus of the PEOA. Moreover, these crucial factors seem to influence each other which can imply a pattern between them. To start out, as indicated, without any focus on the long run, the development of NB projects may take too long or not develop at all. Besides, long-term orientation appears to be related to

ownership of the organization. Both of the entrepreneurial cases are independent organizations, while the non-entrepreneurial organizations are part of corporate organizations which often act as an investment company or are led by an investment company. These corporate organizations only invest in projects with a payback period of two years or less, whereas the entrepreneurial cases invest in long-term projects. Interestingly, the CEO of an entrepreneurial case mentioned that ownership (of the organization) is an important factor for the CE process, which goes hand in hand with the findings of Zahra (1996). Moreover, from the case studies can be learned that a focus on long-term- or short-term orientation also determines which projects are strategically legitimized. For example, the non-entrepreneurial cases do not gain strategic legitimation for long-term projects in contrast to the entrepreneurial cases. Thus, if an organization has a focus on the long-term, the CE process is likely to be strategically legitimized. In addition, strategic legitimation is important for the distribution of resources, which is also stated by Bouchard (2001). The middle managers at the entrepreneurial cases have time and money to work on NB projects. In contrast, the middle managers of the non-entrepreneurial cases often argued that without a focus on the long-term, NB projects will not gain strategic legitimation, and thus no priority, which results in a lack of time for an NB project. If there is not enough time to work on NB projects, the development of the project stagnates or will not happen at all. In conclusion, there seems to be a pattern between long-term orientation, strategic legitimation, and the availability of resources. Moreover, this study indicates that this pattern occurs at the entrepreneurial organizations and that the opposite occurs at the non-entrepreneurial organizations. Therefore, it is likely that this pattern of factors is crucial to the CE process.

5.8 Additional factors

Furthermore, the middle managers of the cases also argued in favor of additional factors which could stimulate the CE process. For example, one middle manager of the entrepreneurial case argued that internal promotion of your own NB project will stimulate the CE process because interested and motivated employees will connect to and be integrated in the process. Interestingly, Howell, Shea, and Higgins (2005) argued that a key competence of corporate entrepreneurs is to get the right people involved with their innovations. Although this can potentially stimulate the CE process, it seems to be more of an individual characteristic rather than an internal organizational factor. Another middle manager argued that challenging other employees and undertaking challenging projects with employees across the organization will stimulate the CE process. This is similar to Ghoshal and Bartlett (1994),

who argued that setting challenging goals can disrupt organizations from organizational equilibrium. However, they did not link this with the CE process. Although these additional factors may stimulate the CE process it cannot be stated that these factors determine the PEOA. Moreover, only two middle managers from one case highlighted these factors as stimulating to the CE process. Therefore, these factors are not sufficiently reasoned to be determinants of the PEOA.

5.9 Theoretical development of the PEOA

Up to this point, this study discussed the factors in relation with the CE process and as potential determinants for the PEOA. Moreover, findings were compared to the available literature to discuss differences and similarities. However, theory development is not discussed yet. Therefore, this section will describe the differences and additional value of this study compared to earlier research.

In the years before 1990, many researchers argued about different settings, dimensions, and factors which could stimulate the CE process. However, there was a lot of ambiguity about how settings/factors should be named and which of them really stimulated the CE process. Therefore, Kuratko et al. (1990) reviewed the literature and proposed five consistent factors which can together form a CE intensive internal organizational environment. This was one of the first conceptualizations of an environment which could provide insight into the PEOA. Through the years, this CEAI model was tested and some factors (organizational boundaries) did not meet the validity requirements. Consistent with the literature, this study has found that three factors of their initial CEAI model can determine the PEOA. This is in line with Hornsby et al. (2013) who excluded organizational boundaries from their initial model. In contrast with this research, this study found that reward systems do not stimulate the CE process. The culture of the Northern Netherlands, the research setting of this study, could be a possible explanation for this difference. Still, this could imply that the initial CEAI model does not entirely fit other research settings since this model was developed using research settings in America. Additionally, in this study a literature review is performed and the empirical data sheds light on four factors which could potentially be a valuable addition to the CEAI model. Besides these two developments, this study also found that some factors do not have a linear relationship with the CE process. Although Volberda (1993) highlighted that too much of an organic structure can lead to a chaotic organization, too much work discretion/autonomy was never discussed in the literature. Furthermore, this study indicated that long-term orientation, the availability of resources, and strategic legitimation are

sufficient and necessary for the CE process. This implies that without these factors, the CE process cannot occur. According to the knowledge of the researcher, up to this point, the literature has not indicated or discussed the nature of factors. While it is not new in literature that a configuration of factors is important to stimulate the CE process, it is new that this configuration at least consist of these three crucial factors. In conclusion, this study proposes a configuration of seven factors to determine the PEOA and describes the nature of these factors. This is a new step in the theory development regarding factors which can stimulate the CE process and therefore, can determine a CE intensive internal organizational environment.

6. Conclusion

In this chapter, the research questions of this study will be answered. Moreover, answers to the sub-questions will be concisely repeated. However, sub-question 1 is excluded because there is no additional value to describing the typology of CE again (see section 2.1 p. 5 for an extensive answer). Extensive answers to sub-question 1 and 2 can be found in chapter 2, the theoretical framework. Furthermore, sub-question 3 is answered in chapter 4, the results. Finally, based on these answers it is possible to answer the main research question of this study; *"Which internal organizational factors determine the pro-entrepreneurship organizational architecture?"*. This answer leads to theoretical (section 6.2) and practical implications (section 6.3), a number of limitations (section 6.4), and suggestions for further research (section 6.5).

6.1 Answers to the research questions

6.1.1 Sub-question 2

In order to answer the main research question of this study, a review of the literature is needed to find a set of factors which can potentially determine the PEOA. This is covered by answering sub-question 2 and is extensively described in chapter 2. In this section, a summarized answer will be given.

Although some scholars had provided the literature with a framework of factors (Kuratko et al., 1990, Covin and Slevin, 1991), the literature still lacks a well-covered PEOA which could stimulate the CE process. Moreover, Kuratko et al. (1990) conducted an extensive review of the literature in order to build a model to predict an organization's readiness for CE, which was later empirically tested by Hornsby et al. (2002). Therefore, four factors[3] of their CEAI model are included in the conceptual model of this study which resulted in the following hypotheses:

Hypothesis 1. A supportive management positively influences the CE process.

Hypothesis 2. Work discretion/autonomy positively influences the CE process.

Hypothesis 6. A reward system which both includes financial incentives such as additional risk rewards and non-financial incentives such as recognition, promotion, positive feedback, and more responsibility positively influences the CE process.

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[3] The factor, which is included in Hypothesis 6, also includes financial rewards which is based on Ornati and Block (1987) and is a result of the literature review of this study.

Hypothesis 7. The availability of time, financial resources, and knowledge are important resources and positively influence the CE process.

Next to these four factors, this study further reviewed the literature to develop a more complete conceptual theoretical framework of the PEOA, which has led to the following hypotheses:

Hypothesis 3. Long-term time orientation positively influences the CE process.

Hypothesis 4. Organic structure-related factors (e.g. informal, decentralized, flat hierarchy, structural differentiated, formal communication, scanning and integration) positively influence the corporate entrepreneurial process.

Hypothesis 5. Administrative mechanisms can control the evaluation, selection and implementation of corporate entrepreneurial ideas which positively influences the CE process.

Hypothesis 8. Networking positively influences the CE process because it can increase the possibilities to acquire the resources needed.

Hypothesis 9. Strategic legitimation of the CE process positively influences the process and the distribution of resources to the project.

The five factors mentioned in the hypotheses above are the result of the literature review and are additional to the model of Kuratko et al. (1990, 2005b, 2014) and Hornsby et al. (2002, 2013). Taken together, these nine hypotheses form a traceable conceptual theoretical framework (see chapter 2, p. 17.) in this study. Furthermore, the factors can positively influence the CE process and therefore determine the PEOA, which answers sub-question 2.

6.1.2 Sub-question 3

The factors resulting from the literature review are the starting point for sub-question 3 "How does the perception of the pro-entrepreneurship organizational architecture vary across companies and why?" which is answered in chapter 4 'results'. To start, the hypotheses based on the literature review are tested by answering this sub-question. Aside from supporting or rejecting these hypotheses, this study found that some factors are sufficient and necessary and therefore crucial to the CE process because there are big differences between the entrepreneurial cases and non-entrepreneurial cases. The most striking differences between the entrepreneurial and non-entrepreneurial organizations were found in long-term orientation, the availability of resources, and strategic legitimation. These factors can be

indicated as crucial to the CE process. Furthermore, there seems to be a reason why these factors vary across cases and thus patterns between these factors are found. It appears that long-term orientation determines which projects gain strategic legitimation, which is important for the distribution of resources. Moreover, management support, work discretion/autonomy, organic structure and networking are indicated as factors which are not sufficient but can be necessary for the CE process. The middle managers of the four cases highlighted the stimulating role of some factors and these factors are also perceived to a high extent at the entrepreneurial cases, therefore the results indicate that hypothesis 1, 2, 3, 4, 7, 8, and 9 are supported. Finally, it became clear that the positive relationship between work discretion/autonomy and organic structure on one side, and the CE process on the other, is not linear. This indicates that, when experienced to a too large extent these factors can obstruct the CE process. In conclusion, the variation across cases and the perception of the middle managers resulted in a set of factors which are the input for answering the main research question.

6.1.3 The main research question

This study has indicated seven determinants for the PEOA. Due to the discussion chapter and answering the three sub-questions these factors can be divided in crucial and stimulating determinants of the PEOA. Based on the discussion chapter, propositions (P) are developed and together with this concluding section, this has resulted in a new proposed model which reflects the PEOA. To start, three culture-related factors are important to the PEOA. (P1) Long-term orientation is a crucial determinant of the PEOA because it is sufficient and necessary for the CE process. Therefore, in the PEOA the focus is on strategic goals (Zahra, 1996). (P2) Management support is a stimulating determinant of the PEOA because it stimulates the CE process. This implies that in the PEOA, employees with new ideas get supported and facilitated by the top-management (Hornsby et al., 2002). (P3) Work discretion/autonomy is a stimulating determinant of the PEOA because it stimulates the CE process. However, it is only stimulating when it is perceived to a desirable extent. This means that too much of it can obstruct the CE process. Therefore, in the PEOA, top-level managers provide decision-making freedom, and freedom from extreme supervision, and they delegate authority and responsibility (Hornsby et al., 2002). In addition, this study found that one of the structure- related factors is important to the PEOA. (P4) An organic structure is indicated as a stimulating determinant of the PEOA because it stimulates the CE process. However, it is only stimulating when it is perceived to a desirable extent. This means that too much of it can

obstruct the CE process. Hence, in the PEOA the structure is flat, decentralized, and informal (Khandwalla, 1977), but too much organicity can lead to chaos and impede the CE process (Volberda, 1993). Furthermore, this study has indicated that the factors associated with resources are important to the PEOA. (P5) The availability of resources is a crucial determinant of the PEOA because it is sufficient and necessary for the CE process. This implies that in the PEOA, time, money, and other resources are available to work on NB projects (Hornsby et al., 2002). (P6) Networking within the organization is a stimulating factor of the PEOA because it stimulates the CE process. Therefore, in the PEOA a large extent of human capital (e.g. knowledge, expertise, and creativity) and social capital (e.g. transferability and transforming of knowledge) is available, which encompasses networking within the organization (Subramaniam and Youndt, 2005). Finally, (P7) strategic legitimation of the CE process is a crucial determinant to the PEOA. Hence, at the PEOA, NB projects are strategic legitimized (Bouchard, 2001).

Although the CE process can occur if only the crucial factors are perceived, a configuration of the seven factors seems to be important for the CE process. For example, networking will further stimulate the CE process because employees can work together on ideas and transfer their specific knowledge to improve ideas and construct them into valuable projects. However, networking cannot stimulate the CE process, if there are no resources available or when there is no strategical legitimation for the CE process. Furthermore, the findings do not indicate that only the crucial factors are important for the CE process, but the configuration of these seven factors will stimulate the CE process. Therefore, a configuration of these seven factors can determine the PEOA. Yet, is seems that a configuration of factors should at least consist of these crucial factors, otherwise the CE process cannot occur. Moreover, configuration thinking is not new in the CE literature, Hornsby et al. (2002) also stated that a set of factors are important to obtain the CE process and not any one aspect is enough to effectively stimulate the CE process. In summary, culture-related factors, structure-related factors, resources, and strategic legitimation are determinants of the PEOA. Based on the empirical data, a configuration of these seven indicated factors determine the PEOA and will positively influence the CE process. While Kuratko et al. (1990, 2005b, 2014) and Hornsby et al. (2002, 2013) indicated earlier that management support, work discretion/autonomy, and the availability of resources are important for a CE intense environment, this study found that a configuration of these factors together with long-term orientation, organic structure, networking, and strategical legitimation will stimulate the CE process and therefore,

determine the PEOA. This study indicated which factors are sufficient and necessary and thus crucial for the CE process. Consequently, this has resulted in a revised version of the conceptual framework and thus this study proposes the following framework:
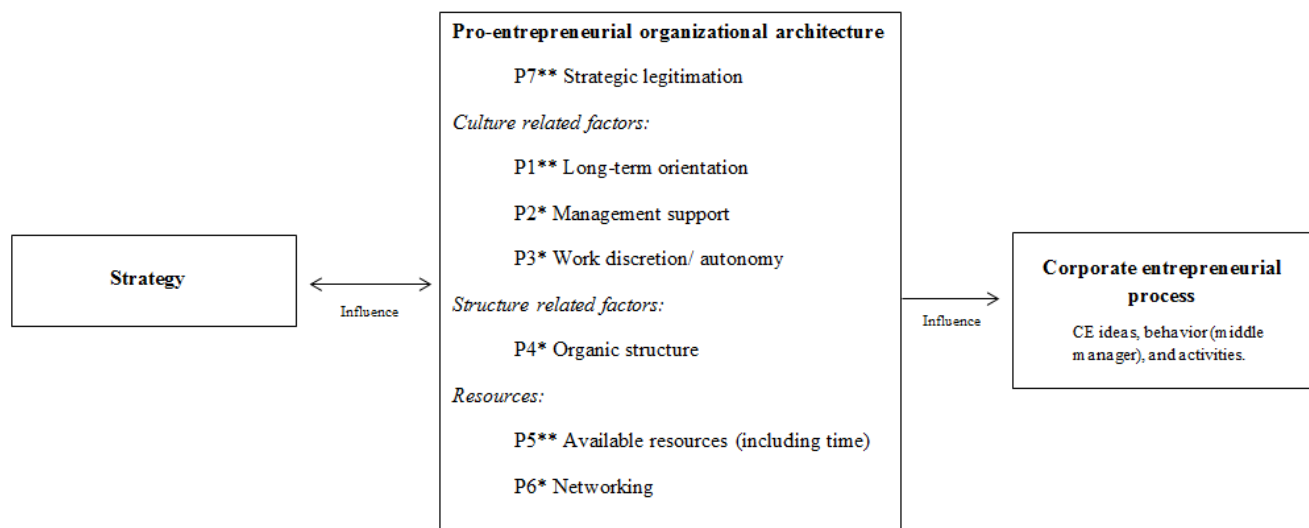
* Stimulating factor to the CE process.

** Crucial and stimulating factor to the CE process

Figure 2. Revised theoretical framework.

6.2 Theoretical implications

This study has a number of implications for the theory. First of all, the configuration of the indicated seven factors of the PEOA is new to the CE literature. Until this moment, the internal organizational factors roamed and the literature lacked a well-covered PEOA. In fact, Ireland et al. (2009) suggested some internal organizational factors which are partially based on Hornsby et al. (2002); however more research is needed to improve this composition of factors. Therefore, the configuration of the seven indicated factors is of considerable value for this literature and can be seen as a new step in this theory development.

Second, the outcomes of this study can be valuable to the current CEAI of Hornsby et al. (2002). The PEOA as outlined in this study integrates management support, work discretion/autonomy, and the availability of resources, which stem from the initial CEAI model, and is in line with Hornsby et al. (2013). However, this study has indicated that reward systems do not stimulate the CE process. Although this is probably a cultural aspect of the Northern Netherlands, it could imply that this factor is less important in research settings outside America. Furthermore, this study found that long-term orientation, organic structure,

networking, and strategic legitimation are important for the CE process and can be considered an addition to the initial CEAI model. Hornsby et al. (2002) argued that the CEAI can provide insight into the extent that an organization has a PEOA. Therefore, the four additional indicated factors could be a valuable addition to the CEAI, and all the proposed factors together form an available measurement tool to provide a better insight in the PEOA.

Third, whether factors are crucial or stimulating determinants of the PEOA and thus are crucial or stimulating to the CE process is of considerable value for the CE literature. According to the knowledge of the researcher, previous research has not indicated that factors can differ in importance to the CE process. This can help researchers better understand why the CE process occurs to a certain extent, which factors are crucial for this CE process, and which factors can further stimulate this CE process. Moreover, this study has indicated that the relation between some factors and the CE process is not linear. Although in the literature it is known that too much organicity can obstruct the CE process (Volberda, 1993), it is new to the literature that too much work discretion/autonomy can also impede the CE process. The nature of factors and their relationship with the CE process is also new in the theory development of the CEAI instrument.

Finally, this study has partially used the CEAI and translated it into Dutch, which had not been done before. Moreover, most of the studies regarding this topic have been conducted outside Europe and could result in unknown differences. As stated earlier, literature consistently argues that rewards systems are important for the CE process, whereas this study did not find any relationship between rewards and the CE process. This can imply differences across countries. Hence, the outcomes of this study can be of considerable value to the current knowledge in the CE literature, since this study has its origin in the Netherlands.

6.3 Practical implications

The results of this study have practical implications for a wide range of practitioners aside from NPAL. For organizations it is important to continuously run faster in order to gain competitive advantage. CE can help organizations win this race, but it is difficult for organizations to be corporate entrepreneurial. This study can give practitioners an opportunity to organize their internal environment in such way that it can strengthen the entrepreneurialness of the organization. Regarding the CE process, it is important for organizations to have a PEOA. Therefore, it is crucial for organizations to have at least a good balance between long-term orientation and short-term orientation. This means that

organizations should not only focus on financial controls but also on strategic goals. If managers in organizations have a long-term orientation, there is a bigger chance that NB projects gain strategic legitimation. Moreover, if NB projects have strategic legitimation, it is more likely that there are resources available for the development of these NB projects. Therefore, if practitioners want to change an organizational internal environment into a PEOA, it is of crucial importance that an organization has a long-term orientation, strategic legitimation for the CE process, and has resources available for NB projects.

Moreover, practitioners can stimulate the CE processes in their organizations through creating a PEOA where managers support and facilitate new ideas of employees. It is also recommended that employees have their own responsibilities, freedom in their work, and are free from extreme supervision of managers. Additionally, it is important that the PEOA has a flat hierarchy, decentralized decision making, and an informal structure. This will increase knowledge-sharing, cross-fertilization, and thereby the velocity of NB projects. Finally, practitioners can stimulate the CE process when the PEOA offers possibilities to network within the organization. For networking within the organization it is important that both human capital and social capital are present in a high extent in the organization. This results in a high transferability of knowledge, expertise, and creativity across disciplines.

In summary, practitioners can increase the entrepreneurialness of their organization when they use a configuration of the seven indicated determinants to the PEOA. It will be of crucial importance to create an internal environment which consists of long-term orientation, strategic legitimation for the CE process, and availability of resources. Without these factors, the CE process may not be efficient which results in underdeveloped NB projects.

6.4 Limitations

Similar to other studies, this study has some limitations. The first limitation concerns the selection of the cases. While the reliability of the EO construct usually is high, this study has some problems with the innovativeness scale. Due to a low Cronbach's alpha on this scale, the results are less reliable, which could result in wrongly identified cases. Additionally, the qualitative nature of this study can provide some limitations since qualitative research is connected to the subjectivity of the researcher while analyzing the data. All this together creates problems for the reliability of this study and thus, it may be hard to confirm the presented results.

Furthermore, this study is performed at four organizations in the manufacturing industry in Northern Netherlands. This causes limitations to the generalizability of this study. Due to this small sample, the data has to be interpreted with caution because there is a chance that situations occur coincidentally. Since the case studies took place at one point in time, there is chance of reversed causalities.

In addition, the unit of analysis can be a limitation of this study, as well. The researcher interviewed middle managers and therefore their interpretation of the questions can differ from top managers or operational employees. This could result in over- or underestimated interpretations of the current situation of the organizations and therefore possibly wrong conclusions. To increase the reliability of the data, it is advisable to interview employees from different positions in the organization to assure the accuracy of the results.

6.5 Suggestions for further research

While performing this study, new questions have emerged and indicated possibilities for further research. First of all, (1) this study has used a deductive approach for the analysis of the data, therefore it will be interesting for further research to use an inductive approach. This inductive approach could be used to identify new factors which could be valuable to the PEOA. Moreover, the suggested research approach can further identify whether 'challenging' employees and 'promoting one's own CE project' are important factors to the PEOA. (2) Second, it would be valuable to repeat this study in a longitudinal research form, with a bigger sample, and including more industries, to increase the generalizability of the results and conclusions. Moreover, to increase the reliability, it is advisable to expand the unit of analysis with more employees from different positions to gain better insights in the current situation of organizations. (3) The indicated factors could be valuable additions to the current CEAI, however, further research is needed to develop a reliable measurement construct for these items to increase the reliability and validity. (4) Furthermore, this study has recognized a pattern between factors, however further research is needed to confirm if this pattern is consistent over more cases and to recognize whether there are more patterns between the factors. A valuable addition would be to identify whether ownership is a predictor of this pattern. Identifying patterns between factors is important because it can provide more insight into factors related to the CE process. Additionally, (5) this study indicated the nature of factors and how they differ in their importance to the CE process. It would be interesting to indicate more crucial factors to the CE process. This is important because crucial factors can improve insights into which configuration of factors is needed for the PEOA. Moreover, this

study cannot prove that some factors are necessary to the CE process; therefore, more research is needed to indicate which of these factors are actually necessary. The relationship between some factors and the CE process is also not linear, and therefore a desirable extent is suggested. However, it would be interesting to investigate the trade off point between the stimulating and obstructive character of these factors. Finally, (6) this study found that reward systems and especially financial reward systems do not stimulate the CE process. At first glance, this seems to be a cultural aspect of the Northern Netherlands, however this is not explicitly investigated in this study and therefore, further research can provide insight into this phenomenon. Moreover, further research cannot only investigate whether this is related to the culture of the Northern Netherlands, it can also provide insight into whether it is a cultural aspect of The Netherlands, or perhaps of more countries in Europe.

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8. Appendices

Appendix I: Questionnaire identification phase

Ondernemerschap binnen uw organisatie

Met deze eerste vragenlijst wordt geïnventariseerd op welke manier uw organisatie ondernemend georiënteerd is, welke soorten ondernemerschap vertoond worden en op welke markten de organisatie zich richt.

Geachte heer, mevrouw,

Graag zou ik mij eerst voorstellen. Ik ben Bas Haarhuis, master student Business Administration en ik ben bezig met mijn master thesis. Tijdens mijn master thesis word ik begeleid door Aard Groen. Mijn master thesis richt zich op ondernemerschap binnen bestaande organisaties. Ondernemerschap kan verschillende vormen aannemen afhankelijk van de strategie van de organisatie. Met deze vragenlijst wordt geïnventariseerd op welke manier de organisatie ondernemend georiënteerd is, welke soorten ondernemerschap vertoond worden en op welke markten de organisatie zich richt.

De resultaten worden geanonimiseerd gebruikt als input voor het onderzoeksrapport en zullen besproken worden tijdens de NPAL bijeenkomst op 24 april. De resultaten zullen in geen geval worden verstrekt aan derden. De naam van uw organisatie wordt alleen gebruikt om uw organisatie specifiek inzicht te kunnen geven in de resultaten en daar een advies aan te koppelen. In het onderzoeksrapport zal de naam van uw bedrijf geheel anoniem blijven.

Het invullen van de vragenlijst zal slechts 10 minuten duren.

Met vriendelijke groet,

Bas Haarhuis

Master student Universiteit Twente

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Heeft u vragen over dit onderzoek of de vragenlijst dan kunt u contact met mij opnemen.

Er zijn 24 vragen in deze enquête

Beschrijving van uw organisatie

De volgende vragen gaan over de kenmerken van uw organisatie.

Wat is de naam van uw organisatie? (als u onderdeel bent van een overkoepelende organisatie, zou ik u willen vragen beide namen te noteren)

Vul uw antwoord hier in:

Tot welke industrietak behoort uw organisatieonderdeel?

Selecteer alle mogelijkheden:

☐ Land- en tuinbouw

☐ Gezondheid

☐ Cultuur, sport en recreatie

☐ ICT en media

☐ Industrie

☐ Financiële instelling

☐ Zakelijke diensten

☐ Bouw

☐ Horeca

☐ Energie, water en milieu

☐ Groothandel

☐ Logistiek

☐ Detailhandel

☐ Overig

Het ondernemend gedrag van uw organisatie

Er worden hieronder een aantal stellingen gegeven die gaan over het ondernemend gedrag van uw organisatie. Het is de bedoeling dat u de stelling afmaakt en aangeeft hoe sterk u zich kunt vinden in één van de twee stellingen.

In het algemeen geven de topmanagers van uw organisatieonderdeel de voorkeur aan...

Kies het toepasselijk antwoord voor elk onderdeel:

	1	2	3	4	5	
een sterke nadruk op marketing van geteste en daadwerkelijk geïntroduceerde producten en/of services.	○	○	○	○	○	een sterke nadruk op onderzoek en ontwikkeling, technologisch leiderschap en innovatie.

Hoeveel nieuwe producten of services heeft uw organisatieonderdeel op de markt gebracht in de afgelopen 5 jaar?

Kies het toepasselijk antwoord voor elk onderdeel:

	1	2	3	4	5	
Geen nieuwe producten en/of services.	○	○	○	○	○	Heel veel producten en/of services.
Veranderingen in producten en/of services zijn meestal van kleine aard.	○	○	○	○	○	Veranderingen in producten en/of services waren meestal drastisch.

Uw organisatieonderdeel gaat als volgt om met haar concurrenten...

Kies het toepasselijk antwoord voor elk onderdeel:

	1	2	3	4	5	
reageert met name op acties die concurrenten uitvoeren.	○	○	○	○	○	voert meestal acties uit waarop concurrenten vervolgens reageren.
is zelden de eerste organisatie die nieuwe producten, administratieve technieken, operationele technologieën etc. introduceert.	○	○	○	○	○	is heel vaak de eerste organisatie die nieuwe producten, administratieve technieken, operationele technologieën etc. introduceert.
ontwijkt meestal competitieve botsingen, waarbij een 'laten en laten leven' houding wordt aangenomen.	○	○	○	○	○	is de organisatie sterk competitief, waarbij een 'maak de concurrentie ongedaan' houding wordt aangenomen.

In het algemeen zijn de topmanagers van uw organisatieonderdeel…

Kies het toepasselijk antwoord voor elk onderdeel:

	1	2	3	4	5	
sterk geneigd projecten te kiezen met een laag risico (met normale en zekere inkomsten).	○	○	○	○	○	sterk geneigd projecten te kiezen met een hoog risico (met de kans op heel hoge inkomsten).

In het algemeen geloven de topmanagers van uw organisatieonderdeel dat…

Kies het toepasselijk antwoord voor elk onderdeel:

	1	2	3	4	5	
gezien de aard van de omgeving het, het beste is om de omgeving geleidelijk te verkennen door middel van schuw en stapsgewijs gedrag.	○	○	○	○	○	gezien de aard van de omgeving gedurfde, breed opgezette acties nodig zijn om de doelen van de organisatie te halen.

Wanneer uw organisatieonderdeel wordt geconfronteerd met beslissingen waarin onzekerheid een rol speelt, dan neemt uw organisatieonderdeel…

Kies het toepasselijk antwoord voor elk onderdeel:

	1	2	3	4	5	
een erg voorzichtige en afwachtende houding aan om de kans op dure beslissingen te minimaliseren.	○	○	○	○	○	een erg gedurfde, agressieve houding aan om de kans op het kunnen exploiteren van potentiële kansen te maximaliseren.

Appendix II: Interview protocol

(1) **Introductie interviewer:** (5 min)
   a. Ik ben ████████████████ en ik ben een student van de universiteit Twente. Op dit moment ben ik bezig met het afronden van mijn master bedrijfskunde in de vorm van een Master Thesis. Voor mijn Master Thesis ben ik bezig met een onderzoek over corporate entrepreneurship (CE).
   b. Dit onderzoek richt zich op de interne omgeving van de organisatie die CE kan stimuleren. Ik ben in maart begonnen met dit onderzoek en mijn eerste doel was het analyseren van de bedrijven aangesloten bij NPAL op basis van hoe CE ze zijn. Op basis van deze analyse heb ik een aantal organisaties uitgekozen om mijn case-studies te houden. Deze organisatie is een van die organisaties. Het interview dat ik met u ga houden zal semi gestructureerd zijn en bestaat uit de volgende onderwerpen (het onderwerp CE, het project, de aspecten van interne omgeving en de vragenlijst). Verder wil ik benadrukken dat dit interview anoniem is en vertrouwelijk zal worden behandeld. Daarom zou ik u willen vragen of ik dit interview mag opnemen. In mijn master thesis zal ik hooguit geanonimiseerd uw woorden citeren mits u daar toestemming voor geeft.

(2) **Introductie geïnterviewde.** (5min)
   a. Kunt u zichzelf introduceren? (leeftijd, werkervaring binnen het bedrijf, functie)

(3) **Het onderwerp "corporate entrepreneurship**" (ondernemerschap binnen bestaande bedrijven) (5 min)
   a. Wat verstaat u onder CE?
   b. *Bij geen antwoord:* CE bestaat uit drie vormen, namelijk: innovatie, nieuwe business creatie en strategische vernieuwing. In dit onderzoek richt ik mij op nieuwe business creatie binnen de bestaande organisatie. Er wordt hier dus geen bedrijf overgenomen of een nieuw bedrijf opgestart buiten de bestaande organisatie. Het gaat hier om ideeën en projecten die leiden tot nieuwe producten of technologieën die een nieuwe markt kunnen creëren, of die nieuw zijn binnen de bestaande markt. (voorbeeld toyota prius)
   c. *Bij antwoord afwijkend van mijn definitie:* Zou het ook kunnen betekenen dat je nieuwe producten of technologieën ontwikkeld die een nieuwe markt kunnen creëren? Of die nieuw zijn voor een bestaande markt?

(4) **Het project** (voor het een betere identificatie van het project) (10 min)
   a. Kunt u het project omschrijven?
   b. In welke mate is dit project in lijn met de core business van uw organisatie?
   c. In welke mate leidt dit project tot nieuwe producten of technologieën waarmee de organisatie een nieuwe markt creëert?

d. In welke mate leidt dit project tot nieuwe producten of technologieën die nieuw zijn voor de bestaande markt van de organisatie?

e. In welke mate gaat dit project over bestaande producten of technologieën die een (voor de organisatie) nieuwe markt betreden.

f. In welke mate denkt u dat dit project kan worden gezien als CE? Waarom?

(5) **Aspecten van de interne omgeving** (stimulerende aspecten en obstakels) (20 min)

a. Kunt u de 3 hoofdaspecten van de interne omgeving benoemen die de ontwikkeling van het project promoten?
(vul in op invulblad)(indien CE project ga eerst verder bij d. Vraag vervolgens bij d, wat mogelijke obstakels zijn die dit projecten verhinderen.)

b. Heeft u naast dit project, weet van andere projecten of ideeën die hebben geleid tot producten of technologieën die een nieuwe markt kunnen creëren of nieuw zijn voor de markt?

c. *Indien ja,* welke aspecten van de interne omgeving waren belangrijk voor de ontwikkeling van deze projecten?

(vul in op invulblad)

Vraag vervolgens bij d, wat mogelijke obstakels waren die ideeën of projecten verhinderen.

d. *Indien nee,* wat is de reden dat dit soort projecten of ideeën niet aanwezig zijn?

Kunt u mogelijke obstakels van de interne omgeving noemen die de ontwikkeling van dit soort projecten/ ideeën verhinderen?

(vul in op invulblad)

(indien CE project of antwoord gegeven op c ga verder naar e.)
Anders ga verder naar f

e. *Vanuit de literatuur bekende, maar niet genoemde aspecten;* U heeft een aantal aspecten genoemd die de ontwikkeling van projecten stimuleren maar volgens de literatuur is bekend dat:

De ondersteuning van management belangrijk is in de ontwikkeling van ideeën en projecten, hoe gaat dit in uw organisatie? hoe beïnvloed dit ideeën en projecten die leiden tot producten of technologieën die nieuwe markten kunnen creëren of nieuw zijn voor de markt?

Autonomie en vrijheid in werkzaamheden belangrijk zijn voor …

Niet financiële beloningen zoals erkenning of meer verantwoordelijk is belangrijk voor…

Financiële beloningen kunnen stimulerend werken voor…

Voldoende middelen zoals tijd, geld en grondstoffen zijn belangrijk voor…

Kunnen netwerken met andere collega's over bijvoorbeeld kennis is belangrijk voor…

De focus op lange termijn doelen zoals strategische doelen is belangrijk voor…

Een structuur met decentrale beslissingsbevoegdheid, weinig procedures, horizontale communicatie is belangrijk voor…

Een formele systeem die ideeën evalueert, selecteert en het verdere proces structureert is belangrijk voor…

Strategische legitimatie voor het project of idee is belangrijk voor…

(vul aanvullende aspecten in op invulblad)

f. *Niet genoemde obstakels:* (vervolg op d. en als optie indien sommige aspecten nog niet genoemd zijn en dus misschien obstakels kunnen zijn)
U heeft een aantal obstakels genoemd die dat soort ideeën en projecten verhinderen, maar volgens de literatuur zijn er een aantal aspecten bekend die kunnen stimuleren, maar bij afwezigheid obstakels kunnen zijn.

Merkt u bijvoorbeeld:

Geen/onvoldoende management support? En hoe verhinderd dat ideeën of projecten die leiden tot producten of technologieën die nieuwe markten kunnen creëren of nieuw zijn voor de markt?

Geen/ onvoldoende autonomie of vrijheid in werkgelegenheid? En hoe…

Geen/ onvoldoende beloning zoals er erkenning of meer verantwoordelijkheid? En hoe…

Geen/ onvoldoende middelen zoals tijd/ geld of grondstoffen? En hoe…

Niet/ onvoldoende kunnen netwerken met andere mensen over bijvoorbeeld kennis? En hoe…

Geen/ weinig lange termijn oriëntatie zoals strategische doelen? En hoe…

Een structuur met centrale beslissingsbevoegdheid, veel procedures, verticale communicatie, veel bureaucratie? En hoe…

Geen formeel systeem dat ideeën evalueert, selecteert en het verdere proces structureert? En hoe…

Geen strategische legitimatie voor het project? En hoe…

(vul aanvullende obstakels in op invulblad)

(6) **Als er tijd over is:**

  a. We hebben het net gehad over een aantal aspecten. Welke van de door u genoemde aspecten zijn volgens u noodzakelijk voor het ontwikkelen van ideeën of projecten die leiden tot producten of technologieën die een nieuwe markt kunnen creëren of nieuw zijn voor de markt?

  b. Welke van de door u genoemde aspecten zijn volgens u stimulerend, maar niet noodzakelijk voor het ontwikkelen van ideeën of projecten die leiden tot producten of technologieën die een nieuwe markt kunnen creëren of nieuw zijn voor de markt?

(7) **De vragenlijst (15 min)**

Invulblad:

Promoot (normaal) project

Aspect:	Promoot project:
Ondersteuning van management	
Autonomie/vrijheid in werkzaamheden	
Beloningen (niet financieel) (erkenning)	
Beloningen (financieel)	
Middelen zoals tijd of geld, kennis	
Netwerken	
Lange termijn tijdsoriëntatie (focus op strategische doelen)	
Organische structuur. Decentrale beslissing bevoegdheid/ informeel, weinig procedures/ horizontale communicatie/	
Formele/systematische manier van het proces structureren. (begint al bij het evalueren en selecteren van ideeën.	
Strategische legitimatie	

Promoot overige CE ideeën of projecten

Aspect:	Promoot project:
Ondersteuning van management	
Autonomie/vrijheid in werkzaamheden	
Beloningen (niet financieel) (erkenning)	
Beloningen (financieel)	
Middelen zoals tijd of geld, kennis	
Netwerken	
Lange termijn tijdsoriëntatie (focus op strategische doelen)	
Organische structuur. Decentrale beslissing bevoegdheid/ informeel, weinig procedures/ horizontale communicatie/	
Formele/systematische manier van het proces structureren. (begint al bij het evalueren en selecteren van ideeën.	
Strategische legitimatie	

Geen CE projecten door: of Verhinderd project:

Aspect:	Verhinderd project:
Ondersteuning van management	
Autonomie/vrijheid in werkzaamheden	
Beloningen (niet financieel) (erkenning)	
Beloningen (financieel)	
Middelen zoals tijd of geld, kennis	
Netwerken	
Lange termijn tijdsoriëntatie (focus op strategische doelen)	
Organische structuur. Decentrale beslissing bevoegdheid/ informeel, weinig procedures/ horizontale communicatie/	
Formele/systematische manier van het proces structureren. (begint al bij het evalueren en selecteren van ideeën.	
Strategische legitimatie	

Appendix III: Questionnaire assessment phase

Vragenlijst "interne omgeving"

Geachte heer/ mevrouw,

Deze vragenlijst is een aanvulling op het interview en gaat over de interne omgeving van uw organisatie. De resultaten zullen geanonimiseerd gebruikt worden in mijn onderzoeksrapport. De vragenlijst bestaat uit 77 items en het invullen duurt ongeveer 15 minuten.

Vertelt u ons meer over de ondersteuning van het management…					
De volgende stellingen gaan over de ondersteuning die u krijgt van het management. Geef aan in welke mate u het eens bent met de volgende stellingen.					
1. Mijn organisatieonderdeel neemt verbeterde werkmethoden snel in gebruik.	1	2	3	4	5
2. Mijn organisatieonderdeel is snel met het in gebruik nemen van verbeterde werkmethoden die ontwikkeld zijn door werknemers.	1	2	3	4	5
3. Het ontwikkelen van eigen ideeën ter verbetering van de organisatie, wordt aangemoedigd door mijn organisatieonderdeel.	1	2	3	4	5
4. Het topmanagement is ontvankelijk voor mijn ideeën en suggesties.	1	2	3	4	5
5. Het ontwikkelen van nieuwe innovatieve ideeën wordt vaak gevolgd door promotie.	1	2	3	4	5
6. De werknemers die uit zichzelf met nieuwe, innovatieve ideeën komen worden vaak aangemoedigd bij hun activiteiten door het management.	1	2	3	4	5
7. De "doeners" worden toegestaan om, zonder uitgebreide rechtvaardiging en goedkeuringsprocedures, beslissingen te maken over hun projecten.	1	2	3	4	5
8. Senior managers moedigen innovators aan om flexibel met regels en vaststaande procedures om te gaan om veelbelovende ideeën op het goede spoor te houden.	1	2	3	4	5
9. Veel topmanagers zijn bekend om hun ervaring met het innovatieproces.	1	2	3	4	5
10. Er is vaak geld beschikbaar om nieuwe projectideeën van de grond te krijgen.	1	2	3	4	5
11. Werknemers met succesvolle innovatieve projecten ontvangen, naast het standaard beloningsysteem, extra beloningen en compensaties voor hun ideeën en inspanningen.	1	2	3	4	5
12. Voor werknemers zijn er verschillende opties binnen de organisatie om financiële ondersteuning te krijgen voor hun innovatieve projecten en ideeën.	1	2	3	4	5

13. Werknemers die risico's nemen krijgen vaak herkenning voor hun bereidheid om op te komen voor nieuwe projecten of ze nou succesvol zijn of niet.	1	2	3	4	5
14. Werknemers worden vaak aangemoedigd om gecalculeerde risico's te nemen met nieuwe ideeën die hier spelen.	1	2	3	4	5
15. De term "risico nemer" wordt beschouwd als positieve eigenschap voor werknemers in mijn werkgebied.	1	2	3	4	5
16. Dit organisatieonderdeel ondersteunt veel kleine en experimentele projecten en is ervan bewust dat er zonder twijfel een aantal zullen falen.	1	2	3	4	5
17. Een werknemer met een goed idee krijgt vaak vrije tijd om dat idee verder te ontwikkelen.	1	2	3	4	5
18. Er is een groot verlangen onder de werknemers in dit organisatieonderdeel om nieuwe ideeën te genereren zonder dat er rekening wordt gehouden met het overschrijden van functionele- en afdelingsgrenzen.	1	2	3	4	5
19. Werknemers worden aangemoedigd om te praten met werknemers van andere afdelingen over ideeën voor nieuwe projecten..	1	2	3	4	5

Vertelt u ons meer over autonomie en de vrijheid in uw werkzaamheden…					
De volgende stellingen gaan over de autonomie en de mate van vrijheid in uw werkzaamheden. Geef aan in welke mate u het eens bent met de volgende stellingen.					
20. Ik heb het gevoel dat ik mijn eigen baas ben en niet al mijn beslissingen dubbel hoef te controleren.	1	2	3	4	5
21. Harde kritiek is vaak het gevolg van gemaakte fouten in het werk.	1	2	3	4	5
22 . Mijn organisatieonderdeel biedt de kans om creatief te zijn en mijn eigen werkmethoden uit te proberen om het werk uit te voeren.	1	2	3	4	5
23. Mijn organisatieonderdeel biedt mij de vrijheid om op mijn eigen oordeel af te gaan.	1	2	3	4	5
24. Mijn organisatieonderdeel biedt kansen om dingen te doen zodat ik gebruik maak van mijn capaciteiten.	1	2	3	4	5
25. Het is vooral mijn eigen verantwoordelijkheid om te beslissen hoe ik mijn werk gedaan krijg.	1	2	3	4	5
26. Ik kan bijna altijd beslissen wat ik doe op mijn werk.	1	2	3	4	5
27. Ik heb veel autonomie op mijn werk en ik word alleen gelaten om mijn	1	2	3	4	5

werk te doen.					
28. Ik moet zelden de zelfde werkmethoden of stappen volgen om mijn belangrijkste dagelijkse taken uit te voeren.	1	2	3	4	5

Vertelt u ons meer over de beloningen van uw organisatieonderdeel…

De volgende stellingen gaan over de beloningen van uw organisatieonderdeel. Geef aan in welke mate u het eens bent met de volgende stellingen.

29. Mijn manager helpt mij om mijn werk gedaan te krijgen door het verwijderen van obstakels.	1	2	3	4	5
30. De beloningen die ik ontvang zijn afhankelijk van mijn werkzaamheden op het werk.	1	2	3	4	5
31. Mijn manager zal de verantwoordelijkheid van mijn werkzaamheden vergroten als ik goed presteer op mijn werk.	1	2	3	4	5
32. Mijn manager zal mij speciale erkenning geven als mijn werkprestatie erg goed is.	1	2	3	4	5
33. Mijn manager verteld het zijn gezaghebbende als ik exceptioneel goed werk heb geleverd.	1	2	3	4	5
34. Werknemers met succesvolle innovatieve projecten ontvangen naast het standaard beloningssysteem extra financiële compensatie voor hun ideeën en inspanning.	1	2	3	4	5
35. Er zijn verschillende opties in de organisatie voor werknemers om financiële beloningen te krijgen gebaseerd op het extra risico dat ze lopen door hun innovatieve projecten en ideeën.	1	2	3	4	5
36. In mijn organisatie zijn de financiële beloningen gebaseerd op het verwezenlijken van mijlpalen in innovatieve projecten	1	2	3	4	5

Vertelt u ons meer over de beschikbaarheid van tijd en middelen binnen uw organisatieonderdeel…

De volgende stellingen gaan over de beschikbaarheid van tijd en andere middelen binnen uw organisatieonderdeel. Geef aan in welke mate u het eens bent met de volgende stellingen.

37. De afgelopen 3 maanden was mijn werkdruk te hoog om tijd te spenderen aan het ontwikkelen van nieuwe ideeën.	1	2	3	4	5

38. Ik heb altijd genoeg tijd om alles gedaan te krijgen.	1	2	3	4	5
39. Ik heb precies de juiste hoeveelheid tijd en werkdruk om alles goed te doen.	1	2	3	4	5
40. Mijn baan is gestructureerd zodat ik weinig tijd heb om te denken over problemen die organisatie breed zijn.	1	2	3	4	5
41. Ik heb het gevoel dat ik altijd te maken heb met tijdsdruk op mijn werk	1	2	3	4	5
42. Mijn collega's en ik vinden altijd de tijd om problemen op te lossen voor de lange termijn.	1	2	3	4	5
43. In mijn organisatieonderdeel worden innovatieve projecten en ideeën voorzien van de middelen die nodig zijn.	1	2	3	4	5

Vertelt u ons meer over netwerken binnen uw organisatieonderdeel…

De volgende stellingen gaan over netwerken binnen uw organisatieonderdeel. Geef aan in welke mate u het eens bent met de volgende stellingen.

44. Onze werknemers zijn zeer bekwaam.	1	2	3	4	5	6	7
45. Onze werknemers worden in het algemeen beschouwd als het beste in onze sector.	1	2	3	4	5	6	7
46. Onze werknemers zijn creatief en scherpzinnig.	1	2	3	4	5	6	7
47. Onze werknemers zijn expert in hun werk en functie.	1	2	3	4	5	6	7
48. Onze werknemers ontwikkelen nieuwe ideeën en kennis.	1	2	3	4	5	6	7
49. Onze werknemers zijn bekwaam in het samenwerken met elkaar, diagnoses stellen en het oplossen van problemen.	1	2	3	4	5	6	7
50. Onze werknemers wisselen ideeën uit met werknemers van verschillende afdelingen in de organisatie.	1	2	3	4	5	6	7
51. Onze werknemers werken samen met klanten, leveranciers, partners etc. om oplossingen te ontwikkelen.	1	2	3	4	5	6	7
52. Onze werknemers passen de kennis uit het ene onderdeel van de organisatie toe bij de problemen en kansen die in het andere onderdeel ontstaan.	1	2	3	4	5	6	7

Vertelt u ons meer over de tijdsoriëntatie van uw organisatieonderdeel…					
De volgende stellingen gaan over de tijdsoriëntatie van uw organisatieonderdeel. De volgende twee onderwerpen komen aanbod: financiële doelstellingen en strategische doelstellingen. In welke mate worden de volgende doelstellingen gebruikt om uw organisatieprestaties te managen en evalueren? Kruis het antwoord aan dat de situatie in uw organisatieonderdeel het best weergeeft in de afgelopen 3 jaar.					
53. Geldstromen (cashflows)	1	2	3	4	5
54. Rendement op investering.	1	2	3	4	5
55. Objectieve criteria zoals, redendement op bezittingen.	1	2	3	4	5
56. Formele functioneringsgesprekken.	1	2	3	4	5
57. Formele face-to-face bijeenkomsten tussen managers om de organisatie prestaties te bespreken.	1	2	3	4	5
58. Informele face-to-face bijeenkomsten tussen managers om de realisatie van organisatiedoelstellingen te evalueren.	1	2	3	4	5
59. Er worden subjectieve criteria gebruikt, zoals klanttevredenheid, om de organisatieprestaties te evalueren.	1	2	3	4	5

Vertelt u ons meer over de management filosofie van uw organisatieonderdeel…							
De volgende stellingen geven de mogelijke structuur en management filosofie van uw organisatieonderdeel aan. Het is de bedoeling dat u de stelling afmaakt en aangeeft hoe sterk u zich kunt vinden in een van de twee stellingen.							
In het algemeen wordt de management filosofie in dit bedrijfsonderdeel het meest getypeerd door…							
60. Zeer gestructureerde communicatiekanalen en zeer beperkte toegang tot financiële en operationele informatie.	1	2	3	4	5	6	7	Open communicatiekanalen waarbij belangrijke financiële en operationele informatie vrij gemakkelijk door dit bedrijfsonderdeel stroomt.
61. Een sterke nadruk op een uniforme management stijl van dit bedrijfsonderdeel.	1	2	3	4	5	6	7	Een managers stijl die vrijuit varieert van zeer formeel tot zeer informeel.
62. Een sterke nadruk op	1	2	3	4	5	6	7	Een sterke neiging om de expert

	1	2	3	4	5	6	7	
formele lijn managers die de meeste zeggenschap hebben in het maken van beslissing.								in een bepaalde situatie de meeste zeggenschap te geven voor het maken van beslissingen, zelfs als dit betekent dat de formele autoriteit gepasseerd wordt.
63. Een sterkte nadruk op het vasthouden aan oude management principes, ondanks veranderingen in de organisatiecondities.	1	2	3	4	5	6	7	Een sterke nadruk op het aanpassen aan veranderende omstandigheden zonder te veel aandacht op management principes uit het verleden.
64. Een sterke nadruk op het volgen van formele procedures door onze werknemers.	1	2	3	4	5	6	7	Een sterke nadruk op dingen gedaan krijgen, zelfs als dit betekent dat formele procedures buiten beschouwing worden gelaten.
65. Strakke formele controle van de meeste werkzaamheden door middel van geavanceerde informatie controle systemen.	1	2	3	4	5	6	7	Losse, informele controle, zwaar afhankelijk van informele verhoudingen met vooral de nadruk op het afkrijgen van het werk.
66. Een sterke nadruk op de formele functieomschrijvingen bij het toezicht houden op lijn- en ondersteunende werknemers.	1	2	3	4	5	6	7	Een sterke tendens waarbij het gedrag tijdens het werk bepaald wordt door de situatie en de persoonlijkheid van de werknemer.

Vertelt u ons meer over administratieve systemen binnen uw organisatieonderdeel…

De volgende stellingen gaan over administratieve systemen binnen uw organisatieonderdeel. Geef aan in welke mate u het eens bent met de volgende stellingen.

	1	2	3	4	5
67. In mijn organisatie is er een systematische manier voor het evalueren, selecteren en implementeren van ideeën.	1	2	3	4	5
68. In mijn organisatie zijn er controle systemen voor het evalueren, selecteren en implementeren van ideeën.	1	2	3	4	5

Einde van de vragenlijst. Bedankt voor het invullen!

Appendix IV: Cronbach alpha's questionnaire assessment phase

Table 14. Cronbach alpha's questionnaire assessment phase.

Construct	Cronbach alpha level	Items removed	Remaining items
Management support	.870	2	19
Work discretion/autonomy	.641	2	9
Rewards	.823	0	5
Financial rewards*	.809	0	5
Resources	.657	2	7
Resources networking	.839	0	9
Time orientation (short-term)	.621	1	3
Time orientation (long-term)	.568	1	2
Organicity (structure)	.769	0	7
Administrative mechanisms	.975	0	2

* 2 items of management support are added, both reflecting financial rewards (see Hornsby et al., 2013).

Appendix V: Operationalization of the codes

Table 15. Operationalization of the codes.

Codebook

Theme	Sub-theme	Sub-sub-theme	Operationalization	Code
Culture-related factors	Management support		Facilitating and promoting entrepreneurial activities in the organization by top management, including championing innovative ideas as well as providing necessary resources, expertise or protection. It also includes supporting risk taking and creativity.	**Culture-mngtsup**
	Work discretion/autonomy		Delegation of authority and responsibilities, providing decision-making freedom and freedom from extreme supervision and the willingness of top-level managers to tolerate failure.	**Culture-workdis**
	Time orientation	Long term orientation	Long-term goals such as strategic goals.	**Culture-LTorien**
		Short term orientation	Short-term goals such as return on assets, return on investments and cash-flows.	**Culture-Storien**

Structure-related factors	Organic structure		Flat organization, short lines, large degree of informality, horizontal communication, and decentralized decision making.	**Structure-organic**
	Administrative mechanisms		Systematic evaluating, selecting, and implementation of ideas.	**Structure-systems**
Reward systems	Reward systems	Financial rewards	The incentive structure which includes financial incentives such as additional risk rewards.	**Reward-Finrew**
		Non-financial rewards	Non-financial incentives such as recognition, promotion, positive feedback, and more responsibility.	**Reward-Nonfinrew**
Resources	Resources	Time availability, money, other resources	The availability of time, financial resources, knowledge, and knowledge sharing. Furthermore, resources in the broadest sense, needed for any project.	**Resources-TimeAv** **Resources-Money** **Resources-Other**
		Networking	Acquisition of required information, knowledge and skills, access to resources; includes also the "quality" of people involved. Human capital and social capital.	**Resources-Networking**
Strategic legitimation			Approval for corporate entrepreneurial processes depending on the strategy, and management choices.	**Strategic-leg**

Appendix VI: The codebooks of the four cases

The extent of a certain factor is given before the phrase; (3) indicates factor is present to a large extent, (2) indicates factor is present to moderate extent, and (1) indicates factors is present to a small extent.

(#1) indicates phrase from respondent 1.

Table 16. Codebook TechServCo.

	Obstructive:	Stimulating:
Factors/code:		
Culture-mngtsup	-	(3) *"The management facilitates ideas, projects or NB with time and money. We have some workgroups IA and predictive maintenance and the employees involved get 6 or 8 hours per week and an amount of money to develop these NB."(#1)*
		(3) *"We have set up our own leadership program to help managers stimulate this kind of developments (e.g. NB). To help the manager choose between priorities and get their employees in the same direction."(#2)*
Culture-workdis	(3) *"There is a lot of freedom and autonomy by our employees but that does not always stimulate the project because those employees have their own freedom to choose between the client and the workgroup (e.g. IA) and if they always choose for the client they cannot work for 6 hours per week on the workgroup. That stagnates the project."(#1)*	(3) *"The freedom and autonomy I perceive stimulates me to work on the project. I do not have to wait on others, I can just go. I do not like working in a restricted project so for me this stimulates al lot."(#1)*
	(2) *"However, we as MT have set more priorities and since two years we see a change in our organization."(#1)*	(3) *"Our people have a large extent of freedom and you do not get punished for mistakes if you see them as a development of yourself."(#2)*
	(3) *"The freedom of employees can*	(3) *"We do not have certain job descriptions but we work more in roles. That gives you the opportunity to get a broader perspective."(#2)*

	work sometimes obstructive because this company is very client oriented, and if employees get an interesting question from clients, they sometimes take more time for the client than for the NB workgroup. The freedom in decision making can work obstructive."(#2)	(3) *"Employees have the freedom to invest time in; learning employees from other discipline groups, knowledge and to develop ideas, new services"(#3)*
		(3) *"Employees like to work here because they get a lot of freedom to come with ideas and that stimulates the generation of ideas and development of projects."(#4)*
	(3) *"Too much freedom sometimes results in hobbyism because people are too much interested in the interesting client question rather than commercial purposes."(#3)*	
Culture-LTorien	-	(3) *"We have a long-term orientation with our organization. The strategy, mission and vision are evaluated every three year."(#1)*
		(3) *"Our company is connected with an investment company, however, this investment company has a long-term vision and that gives our company also the freedom to have a long-term vision."(#1)*
		(3) *"There is a long-term focus, we even close projects at clients with zero profit and we do that conscious, because we want to learn from that client, so that we can do our projects better later on. We do not get nervous if we close a year with lower profits."(#2)*
		(3) *"There is always a tiny balance between profit on the short-term and investment on the long-term; however in this field of tension we focus on the long-term. That is the red string, but something we short focus on short-term to end a year with profit, but that does not obstruct the long-term."(#3)*

Culture-Storien	-	-
Structure-organic	(3) *"The structure is very loose and in combination with a lot of freedom and autonomy at employees can work sometimes obstructive because they want to work for their own little Ltd⁴. and therefore have other things on their mind. This is changing a little bit, however, employees are used to have a lot of freedom so that is difficult and stagnated sometimes the development of a project."(#1)* (3) *"On one hand works the organic structure in our advantage because we have a lot of ideas, good services and creativity, however, because we do not have much structure, there sometimes is also some ambiguity and has everyone agreements with the client. This result in double work or work which is not done."(#3)* (3) *"We have to look out that in this open organization the work gets done. At one hand this stimulates creativity and challenging each other, but it also result in too many employees involved by a project or that too few employees are actually working on a project."(#4)*	(3) *"The loose structure also stimulates entrepreneurship."(#1)* (3) *"The structure is very flat, however we have since a year more managers and that stimulates because there is more structure so everything is more careful and the velocity of circulation of knowledge and information is not delayed by that. It also results in more dynamic and that stimulates the projects."(#1)* (3) *"Our structure is very flat and we work over different areas, in fact we work where work is. It looks fuzzy, but that is not true, it stimulates cross fertilization and that stimulates the velocity of projects."(#1)* (2) *"We now try to structure our organic structure and projects with the 10 commandments of how we doing projects around here."(#3)*

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⁴Back in the day employees had so much freedom that almost everyone had contact with the client. Therefore, a lot of small Ltd.'s within the company were founded, because employees had their own little contracts with them.

Structure-systems	(1) *"A lot of ideas are for our clients and without a certain system we sometimes do not know about value-creation ideas but we actually deliver value at the client. It also results in missed changes."(#2)*	(1) *"There is not a system to evaluate ideas, projects or NB, there are no key points. That process is automatic. This stimulates because it is similar to start ups, they believe in it, got money and go for it"(#1)*
	(1) *"Sometimes we miss the benchmark or criteria in e.g. or discipline groups, because they invest a lot hours in development, but there is not a measured output, although I know that they have a lot of output. However, we need more criteria in this kind of groups to measure the investment potential."(3)*	(2) *"It is depends on our managers if a project is very structured and that can work obstructive, on the other hand, our leadership program stimulates the use of milestones in projects."(#2)*
		(2) *"We try to prioritize the ideas and initiatives now and that helps a lot. We do that by thinking every time to our mission, vision, and strategy, and use that as criterion."(#3)*
Reward-Finrew	-	(1) *"We do not have extra financial rewards only for some managerial positions."(#1)*
		(1) *"We have a normal salary structure, but no additional rewards; because we believe that intrinsic motivation is important." (#2)*
Reward-Nonfinrew	-	(3) *"We reward our employees in non-financial ways as team trips, compliments, more responsibilities."(#1)*
		(3) *"We see development of our people in terms of training also as a reward."(#2)*
Resources-TimeAv	(2) *"There is not enough time, however the MT reserves time for e.g. NB workgroup, but if employees choose the client, sometimes the amount of time is obstructive."(#2)*	(3) *"Employees get time for NB in their work groups and in department groups they have time to think about their own ideas and disciplines."(#1)*

Resources-Money	-	(3) *"Our workgroups receive a certain amount of money to develop NB e.g. IA or predictive maintenance."(#1)*
		(3) *"There is a lot of money available for development so that cannot be an obstructive factor."(#3)*
Resources-Networking	-	(3) *"Networking in our company is very easy and the organization stimulates it a lot. There are work meetings where e.g. business administration employees present to each other how they have worked at different clients. So there is a lot of dynamic and knowledge sharing."(#1)*
		(3) *"Networking is easy if you need knowledge, because there are no barriers. Furthermore, there are interdisciplinary projects which stimulate networking and we have masterclasses for our people, alumni and some clients. In addition we also have discipline workgroups to stimulate networking."(#2)*
Resources-Other	-	(3) *"For one part of growth I recruit new people to let the organization see that it an important project and to get more knowledge insight of the company, and for the other part I will use our own people"(#1)*
Strategic- leg	-	(3) *"NB will get strategic legitimation if it is in line with our core business, predictive maintenance for example. That does not mean that it is not new for us, but the approach is the same."(#1)*

		(3) *"Strategic legitimation is not dependent on time-orientation; however long-term orientation is more stimulated."(#1)*
Other:	(1) (goal clarity) *"Not clearly knowing where we go with an NB opportunity, because it is new for us."(#2)*	(3) *"I try to promote my own project by doing a little PR, to involve people in this project and to let them see the usefulness of this project."(#1)*
		(3) *"I ask in work meetings to our young business administration employees that I seek people for the IA project and they are enthusiastic and they see the usefulness of this project."(#1)*
		(2) *"Sometimes working on an infeasible project with organization width employees, and then achieve your goals, work very stimulating for the whole organization. The organization should do that every year."(#2)*
		(3) *"We motivate and challenge each other and that lead to the generation of a lot of ideas."(#3)*
		(3) *"Ownership is an important factor for entrepreneurship because then you have the freedom for a long-term focus and that gives the space for NB initiatives". (#4)*

Table 17. Codebook BuilderCo.

	Obstructive:	Stimulating:
Factors/code:		
Culture-mngtsup	-	(3) *"If you dare to put your head above the cornfield, it will be appreciated. This is a key point of BuilderCo. That will be supported."(#1)*
		(3) *"The creative mind of people and finding NB will be appreciated and stimulated."(#1)*
		(3) *"If I have a good argumentation for something new, than the management will give me support and stimulation. (#2)*
		(3) *"The manager sales give his attention to this market and thus support the employees which are involved in this project."(#3)*
		(2) *"At this project the payback period is longer and on one hand I get support for this project because everybody knows that it is important however if results are taking too long we fall back in old projects."(#4)*
Culture-workdis	-	(3) *"Our organization provides a lot of freedom to find new ideas. If you can define these ideas in a good way, you have the possibilities to work on it. There is no obstacle for proposing ideas."(#1)*
		(3) *"There is a lot of freedom to perform your job" (2)*
		(3) *"Our department is very autonomous."(#3)*
Culture-LTorien	(1) *"There is long-term*	-

	orientation but there is priority on the short-term so that often gives stagnation on long-term projects." (#2)	
Culture-Storien	(3) *"The focus is on the short term and therefore there is not a lot time and money left for projects and ideas on the long-term."*(#1)	-
	(3) *"The focus is mainly on the short-term orientation and results from an investment company being on top of our group structure. So the focus is on financial controls. This is also a result because there is a possibility for us to go public and then financial facts are key."*(#1)	
	(3) *"The projects with a short payback period get priority."*(#1)	
	(2) *"On this moment the time orientation is on the short-term but our strategy is for the long-term"*(#2)	
	(3) *"There is more focus on short-term financial goals than on strategic long- term goals.* (#4)	
Structure-organic	-	(3) *"It is not only the stimulating management, but also the flat structure is an important factor because therefore there can be quickly switched and things can be realized very fast"*(#1)
		(3) *"Working in teams with different disciplines and a product champion stimulates the velocity of a project or idea in or organization"*(#1)

		(3) *"The flat structure result in fast feedback and al lot of communication about my project or idea"(#1)*
		(3) *"The structure of our organization is very flat, there are short lines and there is a lot of decentralized decision making and that stimulates projects because there is a lot of communication and therefore you can switch very easy". (#2)*
		(3) *"It is easy to walk in by other employees to communicate and you do not have to ask permission to managers and that simulates because you can be very fast."(#3)*
		(3) *"We have a very flat structure, short lines and the door of the CEO is always open, so that simulates the development of projects."(#4)*
Structure-systems	-	(1*"There is not a rigid system for evaluating ideas, I make a business case of my idea and then I evaluate it with the CEO and my manager, and mostly the criteria circle around the low-hanging fruit potential"#(2)*
		(1) *"Ideas are evaluated with the CEO's but there is no such system for it or key factors to evaluate them." (#1)*
		(1) *"There are no very rigid key factors for the evaluation of ideas or projects, it depends on the project, but we evaluate it with different disciplines like marketing, sales and R&D." (#3)*
		(2) *"We work here with NP introduction; this is a structured approach for project with*

		milestones. We call is game plan." (#1)
		(2) *"There are milestones in the project where we evaluate whether it is useful to go on"* (#1)
		(2) *"We work here with game plan, which plans how we going to develop initiatives and described what is needed from who."*(#3)
Reward-Finrew	-	(2) *"Projects should generate additional turnover, if that additional turnover is achieved, I will receive a part of my bonus structure."*(#1)
		(1) *"There are no additional financial rewards at BuilderCo, and that is also not necessary"*(#2)
		(1) *"There is not a certain bonus structure, by high exception you can get an extra bonus, but that is not project related."*(#3)
Reward-Nonfinrew	-	(3) *"I get verbal compliments when I do something good for the team or project."*(#1)
		(3) *"It is not always practical to give people more responsibility because at some point you will reach the management chair, but you get more freedom in your own ideas and track record."*(#1)
		(3) *"There is verbal recognition for my work. And you can get more responsibility if you appreciate that."* (#2)
		(2) *"We get compliments over here."*(#3)
Resources-TimeAv	(1) *"There is not a lot of time to work on NB projects."*(#1)	-

	(1) *"Time is a problem if you want to go 100% for something, then you need investment in new people and that does not happen often."(#2)*	
	(1) *"There are brainstorm sessions for new ideas, however the priority is on the short-term projects so there is not enough time to work on these long-term ideas."(#3)*	
Resources-Money	(1) *"There is not a lot of money to work on new things with high uncertainty and a long-term orientation"(#1)*	(2) *"A part of the marketing budget I can spend to this market".(#3)*
	(1) *"There is never enough money, so when there is money needed, it is always well considered."(#2)*	
	(1) *"Money is here an issue sometimes." (#3)*	
Resources-Networking	-	(3) *"There is a great possibility to network here if you need additional knowledge, e.g. I have a lot of ideas and I can make good practical pictures of it. Yet the marketing department helps me to get a nice story out of it, while I ask R&D for technical support." (#1)*
		(3) *"We have enough capacity and knowledge at our disciplines and therefore we can easily network if we need something"*
Resources-Other	-	(2) *"Investing in a manager who is dedicated busy with this project or market and employees see that also as a sign that it is important."(#3)*
		(3) *"R&D has a lot of knowledge*

		and that stimulates the development of a project. There are no obstacles in terms of knowledge." (#4)
Strategic- leg	(1) *"There is more strategic legitimation for short-term projects and that is also stimulated by the BuilderCo group. Despite the fact that this location is free in a lot of choices, short-term facts and controls are important for the BuilderCo group"(#1)* (1) *"It is not the case that NB are not strategic legitimized, but the focus is on the short-term so there will be the priority and that result in short of money and time for NB ideas or projects"(#1)* (1) *"There is no strategic legitimation if the pay-back period takes too long (short-term."(#1)* (1) *"If there is an idea or trend with a high chance potential than there is strategic legitimation, however this is mostly the case if there are results on the short-term, even if other projects on the long-term are more promising. This is also the result of that we are part of a larger company, which is led by an Investment Company."(#3)*	-
Other:	(1) *"The organizational culture can work obstructive. There are a lot of people who work here for a long time with their own work principles and thoughts, so getting the attention that we have to think about other*	-

products and markets is very difficult because they do not know the background or they think that doing in the way we are used to is the best way of doing it."(#3)

(1) "Some employees still think in terms of the early years and that works obstructive, because those people are not open for new developments. For them everything has to be very rigid."(#4)

Table 18. Codebook ErgoCo.

	Obstructive:	**Stimulating:**
Factors/code:		
Culture-mngtsup	-	(3) *"The CEO is open, and enthusiastic about new ideas and new projects. He takes the input from others serious."(#2)*
		(3) *"The CEO stimulates new ideas and technology push."(#3)*
		(2) *"I get support from the management, but not in a very pro-active way. However, creativity is supported."(#4)*
		(3) *"The CEO stimulates to come with creative ideas and these ideas can be integrated in the roadmap."(#5)*
Culture-workdis	-	(3)*"The CEO always asks how I think about a chance or a project, there is a lot of space to make mistakes if you learn from it."(#1)*

(3) *"I get a lot of freedom, I have my own responsibilities, two times in week we discuss the situation but I think that everyone can work independent."(#2)*

(3) *"We have a lot of freedom in our work and that is a result of the experience of employees."(#3)*

(3) *"I have a lot of freedom in my work, of course I have goals, but I have freedom to archive these goals and works stimulating for me, because it enhances creativity."(#4)*

(3) *"We have a job description and responsibilities, but also a lot of freedom to perform you tasks and do other things."(#4)*

Culture-LTorien -	(2) *"There has always been an focus on the long-term, however recent is shifted more to the short-term"(#1)*
	(2) *"There is a good balance between long-term and short-term orientation, the owner of this organization has a long-term vision and NPD's are in line with that vision, therefore we invest time and money in that kind of projects which do not deliver fast money."(#3)*
	(2) *"The focus is more on long-term, all the NPD is for the long-term"(#4).*
	(3) *"This organization is a family organization and the owner is interested in long-term profit, and to enhance long-term profit, innovation is needed."(#5)*
	(2) *"There is balance between the long-term and the short-term. In our roadmap we choose for short-term*

		projects to earn money, but we also working on long-term projects to have sustaining business.”(#5)
Culture-Storien	-	-
Structure-organic	(2) *“There are a lot of procedures because we deliver to the medical industry. Sometimes this works obstructive because is cost a lot of time to test everything.”(#1)*	(2) *“There is a very flat structure, therefore we can shift easily, however, there is a hierarchy, the boss decides.”(#1)*
		(3) *“The decision power is decentralized, we work in teams with independent employees so if decisions have to be made, we can do that by ourselves and that will be appreciated. This stimulates the velocity of a project because a team can be more decisive and does not have to wait on the CEO”(#1)*
		(3) *“Our organization is very flat, informal and that stimulates the development of the NP project.”(#3)*
		(3) *“the structure is also very open, financial facts are openly discussed and presented to the employees.”(#3)*
		(4) *“We have a flat organization with three layers. (#3)*
Structure-systems	-	(2) *“We have an digital idea system, where I can upload an idea and the CEO evaluate these ideas and start them up.”(#1)*
		(1) *“We try to structure our project, but in reality it does not work that way, because sometimes we have to deliver faster. It is hard to maintain de structure till the end of the project”(#1)*

		(2) *"There is a digital idea systes, these ideas are evaluated by the CEO. It works like a sort of safety net for ideas and it creates approachability"(#4)*
Reward-Finrew	-	(1) *"There is no financial compensation, besides my salary."*
		(1) *"There is a yearly financial compensation for the whole organization, but not specified for projects or ideas."(#3)*
		(1) *"There is no financial compensation."(#4)*
		(1) *"There is a profit sharing compensation, but that is not connected with projects or milestones."(#5)*
Reward-Nonfinrew	-	(2) *"I got sometimes compliments, but I do not get more responsibility."(#1)*
		(3) *"If I come up with something new such as a product, I get recognition."(#2)*
		(3) *" I get sometimes compliments but they are more indirect, that fits to the northern culture but I can notice that they appreciate my work."(#3)*
		(3) *"I get recognition if I do my work outstanding."(#4)*
Resources-TimeAv	(2) *"Time can sometimes be an obstructive factor because employees are very busy, for example the R&D department is planned for the next two years".(#1)*	(3) *"For NPD such as multiple functional ergo metric bicycle, time is reserved to work on it."(#3)*
	(2) *"Capacity and thus time can*	

	be an obstructive factor, because everyone is busy and therefore time to think sometimes is lacking."(#2)	
	(2) *"For every discipline is one employee, so if there is a problem I have to make a choice and that will lead to less time for NPD."(#3)*	
Resources-Money	-	(3) *"In our roadmap, a certain amount of money is determined for the development of this NPD project. "(#3)*
Resources-Networking	-	(2) *"I get all the space to network, this organization is informal, all the disciplines are present so I can easily walk by the person I need for getting knowledge."(#1)*
		(3) *"It is easy to network here, I can get knowledge in every corner of the organization, for example, our developers often walk into the production to ask things about the nature of a raw material, this will help to identify problems before they occur."(#2)*
		(3) *"Networking is easy, that can be a result of the small organization, but employees can often gain knowledge at other disciplines if they need it. An example is that development employees often communicate with the production employees."(#3)*
Resources-other	-	(3) *"There are enough raw materials to experiment with, however if we do not have something, we can buy it." (#3)*
Strategic- leg	-	(3) *"There is also strategic*

legitimation for projects which do not belong to the core-business of ErgoCo, because we are part of a holding, which has a broader scope."(#1)

(3) *"There is strategic legitimation for long-term projects such as NPD because the owner has a long-term vision, and therefore time and money is reserved."(#3).*

Other:	(1) *"I think that this organization can use more junior employees with a new, bright perspective."(#2)*	-

Table 19. Codebook LightCo.

	Obstructive:	**Stimulating:**
Factors/code:		
Culture-mngtsup	-	(3) *"Although, there is no focus on this NB project, I get support in terms of pro-active reactions, for example, if there are resources needed. Also in terms of repairing broken things for the project is pro-active covered."(#3)*
		(2) *"There is a lot of management support, they are the most stimulating in this NB project, this has resulted in 2 internships recently, however we need someone who is dedicated involved. On the other side the same management is supporting the short-term projects because we want to be the last men standing."(#4)*
		(3) *"Searching for NB is stimulated a lot, if there are chances, I get a lot*

		of support and freedom to work on it". (#5)
Culture-workdis	-	(2) *"I have the freedom to work on the NB project if I do not neglect the other activities."(#1)*
		(3) *"I have a lot of freedom, I do not have any limits."(#2)*
		(3) *"I have a lot of freedom, I make appointments with my supervisor but I get the freedom to try and that works stimulating."(#3)*
		(3) *"Everyone has a lot of responsibility and freedom in their work."(#3)*
Culture-LTorien	(1) *"There is no focus on NB creation projects because short time earnings are more important."(#2)*	-
Culture-Storien	(3) *"We are the cash cow for the corporate organization"(#1)*	-
	(3) *"There is a strong focus on winning the end game, otherwise we lose"(#1)*	
	(3) *"We give short-time projects the priority and therefore NB creation is not present in this list."(#1)*	
	(3) *"The focus is on the short-term, on financial targets, because we have to survive and we are a cash cow for the corporate organization."(#1)*	
	(3) *"The focus of the organization is on the short-term which means that projects for cost-prize*	

reduction get the priority."(#2)

(3) *"The investments are more on the short-term, we are more a cash cow than a strategic SBU."(#2)*

(3) *"There is no focus on this NB project because it is not the most important project, we focus more on cost price reduction because we want to win the end game."(#3)*

(3) *"I think the focus is on the short-term because projects are based on keeping the customers and this kind of projects get more priority than long-term projects. This works obstructive because I do not have time for this NB project."(#3)*

(3) *"The corporate organization focusses on KPI's and they are not interested how our division conditions are over 15 years."(#4)*

(3) *"The focus is on the short-term, we have a top ten win battles defined and that will help us to win the end-game."(#4)*

(3) *" We try to start projects which can deliver the most money in a short time, therefore our project leaders are busy with that instead of NB on the long-term."(#5)*

Structure-organic	(3) *"The backside of this flat organization is that there is no discipline which is dedicated responsible for this NB project."(#1)*	(3) *"We have flat organization, we look broader than or disciplines so there is a lot of knowledge sharing and shared vision and that stimulates"(#1)*
	(2) *"We have a flat structure, but*	(3) *"The structure is very flat and*

	sometimes also bureaucratic with a lot of rules and that can work obstructive."(#5)	*the lines are short even with the CEO of the SBU and that stimulates because we can switch fast and there is fast feedback on questions."(#2)*
		(3) *"If I have ideas, it is not the case that I have to go to my supervisor and that he has to go to his supervisor. Therefore we can switch fast because we can ask easily support and that works stimulating"* (3)*"I can even easily talk with the plant manager for feedback and compliments"(#3)*
		(3) *"We have a very flat structure and therefore everyone knows the project."(#4)*
		(3) *"For NB ideas or projects we do not get obstructed by procedures."(#4)*
Structure- systems	-	(3) *"There is a system for evaluating and selecting ideas, first we have to make a plan with a budget etc. and we have to score it with the MT based on the success rate."(#1)*
		(3) *"There is a structured process for new projects"(#1)*
		(3) *"Projects are carried out by a commission , where a milestone structure is used and where every time the progress has to be reported."(#2)*
		(3) *"We work with project charts and based on that we rank them and decide which projects we are going to do."(#3)*
		(2) *"We have a good project structure where ideas get evaluated and selected, however we do not used something similar for NBC. We were used to do it in the same way,*

		but since the NB department is decomposed, we do not use it anymore."(#5)
Reward-Finrew	-	(1) *"There is not a reward structure for projects, however I can get a bonus if my work was excessive."(#2)*
		(1) *"Rewards are present, but not for milestones in projects or projects, more in terms of personal development."(#3)*
		(1) *"There is not a financial reward system, at least I do not know that someone had earned special recognition". (#4)*
Reward-Nonfinrew	-	(2) *"Not very direct, however that depends on the department, but they let me know that they are happy with my work, and that works stimulating."(#2)*
		(2) *"We get verbal recognition, but not in terms of more responsibilities."(#3)*
Resources-TimeAv	(1) *"The problem is that this NB project is for everyone on top of their normal work"(#1)*	-
	(1) *"We do not have capacity to assign someone dedicated to the NB project"(#1)*	
	(1) *"Time is a problem if the project is on the long –term, then there is no focus."(#2)*	
	(1) *"Capacity is a problem, because if there are NB ideas we cannot perform them". (#2)*	
	(1) *"Sometimes there are so much projects, that I do not have the time to do everything, projects are then categorized with priors, but*	

	this NB project does not have a prior, so I had no time to work on it and that does not stimulate." *(#3)*	
	(1) The capacity is a problem because we have a restricted group of employees who have to focus on our production, then we also have incremental innovation on products, so then there is not much time left for NB."(#5)	
Resources-Money	*(2) "There is no enough money for the NB project, the money we invest in the project depends on the financial results."(#1)*	
	(1) "Money is a problem if the project is on the long –term, then there is no focus."(#2)	
Resources-Networking	-	*(3) "We can easily network with each other."(#2)*
		(3) "I can walk into every department to gain knowledge"(#3)
		(3) "Networking is very easy in this organization, if I need knowledge, I can easily go to other departments, the most employees work here for a long time and even if someone has switched in his function, I can find them. "(#4)
Resources-Other	*(1) "We miss a lot of knowledge for this NB project because the person with a lot of knowledge about this project, is not there anymore."(#3)*	*(3) "Resources by means of raw materials are not the problem, and if something is not available than we buy it."(#4)*
Strategic- leg	*(1) "There are fixed rules, a project gets strategic legitimation if we invest in project with a payback period of two years, that does not work for NB" (#1)*	-

(1) *" We do not get the possibility of the corporate organization to work on this NB project so we have to work under the radar"(#1)*

(1) *"Projects with a lot of uncertainty but potential high profits on the long-term do not get a lot of support. There is more support for low hanging fruit."(#2)*

(1) *"There is more strategic legitimation for short-time projects because they deliver fast money, therefore we do not have much time for long-term projects such as this NB project."(#4)*

(1) *"Our goal is to win the end game thus short-term projects are more stimulated, and that takes all our time. NB projects for the long-term is difficult because our corporate organization will not provide us with the needed resources."(#5)*

| **Other:** | - | - |

Appendix VII: Total quantitative results

Table 20. Quantitative results management support.

Case	Mean	Standard deviation	N=
TechServCo	8.88	.144	4
BuilderCo	3.09	.527	4
ErgoCo	2.72	.668	4
LightCo	3.21	.496	5

Table 21. Quantitative results work discretion/autonomy.

Case	Mean	Standard deviation	N=
TechServCo	4.43	.309	4
BuilderCo	4.21	.360	4
ErgoCo	4.32	.486	4
LightCo	4.34	.577	5

Table 22. Quantitative results structure (organic)[5].

Case	Mean	Standard deviation	N=
TechServCo	6.39	.137	4
BuilderCo	5.14	.655	3
ErgoCo	4.75	1.084	4
LightCo	5.49	0.404	5

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[5] The organicity scale is measured with a 7 point Likert scale; therefore quantitative scores can vary from 1 till 7.

Table 23. Quantitative results administrative mechanisms.

Case	Mean	Standard deviation	N=
TechServCo	2.38	1.109	4
BuilderCo	2.67	1.155	3
ErgoCo	2.75	.957	4
LightCo	3.30	1.483	5

Table 24. Quantitative results non-financial rewards.

Case	Mean	Standard deviation	N=
TechServCo	3.75	.443	4
BuilderCo	3.65	.772	4
ErgoCo	2.30	.739	4
LightCo	3.76	.654	5

Table 25. Quantitative results financial rewards.

Case	Mean	Standard deviation	N=
TechServCo	1.80	.283	4
BuilderCo	2.40	1.071	4
ErgoCo	1.15	.100	4
LightCo	2.04	.607	5

Table 26. Quantitative results resources.

Case	Mean	Standard deviation	N=
TechServCo	3.90	.529	4
BuilderCo	2.90	.600	4
ErgoCo	2.92	.400	4
LightCo	2.40	.460	5

Table 27. Quantitative results resources (networking).[6]

Case	Mean	Standard deviation	N=
TechServCo	5.97	.229	4
BuilderCo	4.67	.327	4
ErgoCo	4.47	.389	4
LightCo	5.05	.859	5

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[6] The network scale is measured with a 7 point Likert scale; therefore quantitative scores can vary from 1 till 7.