Leading Innovators in Large Organisations

*Enablers and Barriers for Intrapreneurship*

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Abstract

Innovation is considered by many to be a driver of organisational performance and growth. A key factor to consider for competitive edge is the utilization of the companies’ innovative capabilities. The bureaucracy often involved with large companies could limit the utilization of the inherent innovative ability and new business development.

The commissioner for this study, a large Swedish multinational technology company, has in a previous study raised the importance of innovators to be properly recognised and rewarded. Moreover, they have identified a need to better identify, track and train their innovators in order to utilise their full potential. With this in mind, the research question, “How can the company’s innovative capabilities be further utilised?” was formulated. The research question was further complemented with sub-questions narrowing the field of study and allowed for a more systematic approach.

Three methods were used in this study, interviews, a questionnaire and a workshop. The interviews were conducted in order to capture the company specific context and factors influencing the company’s innovators to verify and complement the literature study. Secondly, the questionnaire was done to add an additional perspective on the topic including quantitative data verifying the extent of the found factors and exploring their importance throughout the organisation. Finally, the aim of the workshop was to let innovators in the company form specific actions targeting the most pressing issues discovered from the questionnaire.

The findings suggest recommendations regarding what obstacles that are most important to address, how to motivate innovation efforts, identify innovators and how to enhance the utilisation of the company’s innovative capabilities. The proposed actions from the workshop, concluding the preceding data collections were to implement a strategy facilitating innovation execution, create an incubation team supporting innovators in realising innovations, and to foster an experimental culture.

Keywords: Intrapreneurship, Innovation Enabler, Innovation Barrier, Innovator Motivation, Innovative Capability
**Sammanfattning**

Innovation anses av många vara en drivkraft som ofta medför konkurrensfördelar och starkt bidrar till organisationers positiva resultat och tillväxt. En nyckelfaktor är att nyttja företagets innovativa förmåga. Dock kan byråkratin och trögheten ofta förknippad med stora företag begränsa nyttjandet av innovationsförmågan och utvecklingen av nya marknader.


I studien användes tre metoder, intervjuer, en enkät och en workshop. Intervjuerna genomfördes för att fänga kontexten och samla in vilka specifika faktorer som påverkar innovatörer på det studerade företaget, som en verifiering och komplement till litteraturstudien. Enkäten undersökte generaliserbarheten i de tidigare funna faktorerna samt verifiera deras existens och betydelse i hela företaget, genom det kvantitativa resultatet. Workshopen syftade slutligen till att låta ett antal av företagets innovatörer forma åtgärdsplaner, specifikt anpassade för företaget utifrån de tydligast framträdande hinder för innovation funna från enkäten.

Studien har resulterat i rekommendationer gällande vilka hinder för innovation som är viktigast att adressera, hur man motiverar och identifierar innovatörer samt hur företaget kan öka nyttjandet av sin innovativa förmåga. Workshopen, vilken binder samman resultatet från de tidigare datainsamlingarna, resulterade i tre åtgärdsplaner. Första åtgärden var att införa en strategi för realisering av innovationer. Andra åtgärden rekommenderade skapandet av en grupp som hanterar inkubationen av innovationer och hjälper idégivare att driva dessa mot realisering. Slutligen föreslogs att implementerandet av en experimentell kultur skulle gynna innovationsklimatet.

**Nyckelord:** Intraprenörskap, Innovationsförutsättning, Innovationshinder, Innovatörs motivation, Innovationsförmåga
This report constitutes a master thesis that was conducted by two students during spring 2014 at the Royal Institute of Technology within the master of Product Innovation. This study was commissioned by a large Swedish multinational technology company and conducted within the framework for an Institute for Management of Innovation and Technology (IMIT) project.

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Thanks to Jennie Björk (Researcher at Royal Institute of Technology) and Magnus Bergendahl (Innovation Manager, Collaboration, at SCA) for help in designing and interpretation of the questionnaire. Thanks to Isabelle Landberg and Linn Back for their valuable input and opposition of the report. Moreover, we would like to send our best regards to the interview and workshop participants and questionnaire respondents for sharing your valued time and experiences.

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Fredrik Ringård

Carl Segerlund
1. **INTRODUCTION**  

1.1 **Problem Statement**  
1.2 **Thesis Outline**  

2. **THEORETICAL FRAMEWORK**  

2.1 **Intrapreneurship**  
2.2 **The Innovator**  
2.3 **Motivation for Innovators**  
2.4 **Barriers to Innovators**  
2.5 **Enablers for Innovators**  

3. **METHODS**  

3.1 **Methodological Approach**  
3.2 **Research Process**  
3.3 **Methods for Data Collection**  
3.4 **Methods for Data Analysis**  
3.5 **Discussion of Methodology**  

4. **RESULTS**  

4.1 **Initial Interviews**  
4.2 **Questionnaire**  
4.3 **Workshop**  
4.4 **General Patterns**  

5. **DISCUSSION**  

5.1 **Utilisation of Innovative Capabilities**  
5.2 **Characteristics**  
5.3 **Motivation**  
5.4 **Barriers**  
5.5 **Enablers**  
5.6 **Priority Actions**  

6. **CONCLUSIONS**  

6.1 **Identifying Innovators**  
6.2 **Motivating Innovators**  
6.3 **Main Obstacles to Address**  
6.4 **Improving the Utilisation of Innovative Capabilities**  
6.5 **Future Research**  

APPENDIX A – INTERVIEW GUIDE  
APPENDIX B – QUESTIONNAIRE  
APPENDIX C – RESPONDENT CHARACTERISTICS  
APPENDIX D – MOTIVATION, BARRIER AND ENABLER CORRELATION
1. **INTRODUCTION**

Remaining competitive in today’s industry requires constant innovation and developing new capabilities. Already in 1990, Porter (1990) stated that the increasing competition between companies forces a constant renewal and improvement in product quality, added features and production efficiency. Christensen (1997) further described how many large companies failed even when doing everything right, with the exception of missing that disruption or discontinuity in a niche-market too small to be interesting at first but that turned out to revolutionise an industry. Innovation, defined as the actualisation of inventions (Fagerberg, 2003), is key in remaining competitive.

Responding to change is problematic in many companies. The simple fact that expressions such as ‘structural inertia’ or ‘bureaucracy’ have been coined indicates that this is an issue for organisations. Hedlund (1994) argues that large firms have disadvantages in the creation of novelty in relation to small firms, especially in R&D, due to bureaucracy. This problem does not exist in several large Japanese firms, where roles are not as specified and it is easier to engage in projects that does not exactly fit the company profile (Hedlund, 1994). Tushman and O’Reilly (1996) argue that it is hard for companies to handle disruptive markets and make the transition into the development of new technologies, often from fear of cannibalising the present business and the risk in pursuing a new technology before it has proven to be profitable. What drives short-term performance often amplifies structural inertia making changes harder, more time-consuming and expensive (Tushman & O’Reilly, 1996), and in extension slow to respond on environmental changes (Hannan & Freeman, 1984).

Amabile (1998) reviewed a real life example of a previously very innovative company undergoing a big reorganisation due to rapid growth. During this reorganisation the company were exposed to many barriers decreasing creativity. By changing processes and goals, managers reduced the autonomy of employees. Initially, several workgroups performances were positively affected by new time and resource limitations, but eventually the effect wore of when the rush proved insignificant. What probably finally killed creativity was managers’ critical attitude towards new ideas and initiatives, evaluating upon deficiencies instead of potential. By doing this, management enacted a policy that ideas were to be assessed sceptically. The result of this company’s reorganisation was a gravely damaged creativity.

“When creativity is killed, an organisation loses a potent competitive weapon: new ideas.” (Amabile, 1998, p. 87)

There are however successful examples of how to manage both incremental and radical innovation in companies like Hewlett-Packard, Johnson & Johnson and ABB, which have succeeded to preserve the agility of the small firm through partitioning into small autonomous groups (Tushman & O’Reilly, 1996). Incremental innovation is defined as improvements or added features to an existing product or process, whereas radical innovation is the creation of a fundamentally new product or process. One strategy for creating new business ventures in smaller autonomous projects driven as independent companies within the firm is corporate entrepreneurship (De Jong & Wennekers, 2008). This is a strategy to leverage the innovation capability in a large firm using all employee resources, as everyone is a valuable source for innovation. Fry (1987) claim that ideas and breakthrough innovations seldom comes from top management. Novel creations require new information, perspectives and associations, regarding trends, possibilities and use of products and services, which is often unavailable to executives.
This makes the innovators very important, it has for example been shown that 70 percent of successful entrepreneurs got their idea during a previous employment (Chamorro-Premuzic, 2012). Consequently, for a company to be innovative it must capitalize on the employees’ ideas (Govindarajan & Desai, 2013).

Corporate entrepreneurship is a top-down strategy that aims to foster more improvement efforts or initiatives among the employees (De Jong & Wennekers, 2008). Utilising the company’s innovative capabilities, defined as the ability to create innovations, is a way to drive change rather than adapt to it. Corporate entrepreneurship has been found to support growth and profitability in large firms (Covin & Slevin, 1986; Zahra, 1991), in both short and long-term (Zahra & Covin, 1995). Zahra’s closing statement is:

“The study’s encouraging results show that corporate entrepreneurship contributes to superior corporate financial performance.” (Zahra, 1991, p. 281)

An alternative term to corporate entrepreneurship is intrapreneurship, which is a bottom-up process of self-started employee initiatives to renew and improve the company business (De Jong & Wennekers, 2008). Corporate entrepreneurship is essentially a strategy to induce intrapreneurship. An early appearance of intrapreneurship can be found in a quote by Steve Jobs:

“The Macintosh team was what is commonly known as intrapreneurship; only a few years before the term was coined — a group of people going, in essence, back to the garage, but in a large company.” /Steve Jobs (1985)

De Jong and Wennekers (2008) state that the intrapreneur is an individual driven by a strong will that takes initiative and pursue exploration and exploitation of opportunities. This will often involve the company having to mobilise resources and planning to manage risks and obstacles. Without a strategy for utilising employee creativity there is a risk of losing these talented individuals who could contribute to the growth of the firm (Govindarajan & Desai, 2013).

1.1 PROBLEM STATEMENT

The study is commissioned by a large Swedish multinational company that is world-leading in their field. The company have a major market share and stress innovation as an important driver for competitive edge.

The company has asked the question how their innovators can be better supported, recognized and made more visible, as well as what might be the implications for the organisations recognition system. Innovators are, in this study, defined as people driving innovation and initiatives aimed towards the exploration and exploitation of new opportunities. This means that the company’s innovators are what literature has defined as intrapreneurs. Furthermore, smart failures, with the objective to learn from failure, can be better promoted in parts of the organisation. As a result, the participation in uncertain entrepreneurial activities can in some cases be considered a career risk.

Management of the innovators’ talents and being able to take care of and utilise the creative employees’ skills and insight is a challenge. The company has an increasing need to systematically identify, track and train their internal entrepreneurs/innovators to increase the company’s entrepreneurial capabilities. Moreover an incentive system including rewards and recognition of intrapreneurial initiatives might be considered.

This study aims to explore the factors influencing the company’s intrapreneurial climate, the factors consequences and ways towards improvement. The theoretical contribution of this study
is mainly focused at the identification of barriers, enablers and motivation for innovators, the associations between these aspects, and how they affect the innovator in a company setting. These factors will be evaluated by their direct influence on the innovator, on micro level, compared to many previous studies, which have been considering factors impact on the overall innovative climate. This gap was identified in previous research concerning creative firms. Most attention has been directed at determining variables influence on the creative firm at macro-level, whereas micro-level factor influence on performance is still to be studied (Mellander, 2010). This topic includes the role of the intrapreneur and its effect on organisational performance. The outcome will provide recommendations regarding how to best emphasise the innovators within the firm and actions needed to modify their climate and conditions to allow for maximum utilisation of their innovation talents. The actions related to improving the innovator climate involve amplification of enablers and reduction of barriers for innovators. The study will also contribute in bridging the two theoretical fields of innovation management, relating to the organisation, and entrepreneurial characteristics, relating to the person. Both are examined to get their different perspectives as they have a clear relationship in this situation of intrapreneurial activities and supporting the innovator within the organisation.

**Purpose**

The purpose of this study is to explore the motivation, barriers and enablers influencing innovators at the company, which is to result in recommended actions and indications of aspects to consider when managing innovation in a large company. The purpose of the recommended actions is to give managerial support of how to amplify the enablers and reduce or remove the barriers. The enablers will be generally defined as means to improve the utilisation of innovation capabilities and barriers as organisational obstacles for innovators and intrapreneurship.

**Research Question**

The following research questions are defined:

- How can the studied company’s innovative capabilities be further utilised?
  - How can companies identify and track innovators?
  - What motivates intra-corporate innovators?
  - What obstacles do intra-corporate innovators perceive?
1. **INTRODUCTION**

The aim of this chapter is to introduce the reader to the context, which is considered throughout the study. In the introduction, the research scope is set, problem statement is described, purpose is stated, and the research questions are formulated.

2. **THEORETICAL FRAMEWORK**

In the theoretical framework, literature in relevant topics are reviewed and summarised. The chapter mainly comprises the subjects of intrapreneurship, the innovator, and barriers and enablers for innovators.

3. **METHODS**

The aim of this chapter is to explain the used research methods to give the reader insight into the procedure. The methodology approach and the methods for data collection and analyse is described and discussed. The used methods for data collection are interviews, a questionnaire and a workshop.

4. **RESULTS**

This chapter concludes the objective results from the data collection. It includes summaries of the nine initial interviews, data from the questionnaire and insights from the workshop. The aim of all data collections is to underpin, form a context and find solutions regarding how to improve the innovative capabilities and climate for the studied company’s innovators.

5. **DISCUSSION**

The focus throughout the discussion will be to connect previous literature to the results from this study and find patterns in correlations between different factors. The discussion in comparison with the result does contain some degree of subjective interpretations done by the authors.

6. **CONCLUSIONS**

In the conclusion, the main findings are summarised and the contributions to theory and practice is reviewed. Throughout the conclusion it is ensured that the research questions are answered and the purpose is fulfilled.
2. THEORETICAL FRAMEWORK

In this chapter, reviewed literature in the fields of innovation management, intrapreneurship, innovator and entrepreneur characteristics will be summarised. The chapter starts by explaining the general concept of intrapreneurship. Then, to get the full picture for increased utilisation of the innovative capabilities, both the intrapreneur and its environment are studied. For a full understanding of the intrapreneur and identification of intrapreneurs, their characteristics, motivation and behaviour will be reviewed and summarised. In this section, both innovator and entrepreneur characteristics will be included, as intrapreneur's possess both. Finally, to find out how to incorporate and further amplify the utilisation of innovation capabilities and analyse the situation, previous research on barriers and enablers are included. The entrepreneur within a company setting is in literature referred to as an intrapreneur, but throughout this study, intrapreneurs are sometimes referred to as innovators, since this is the term used for these persons at the researched company.

2.1 INTRApreneUShIP

In-tra-pre-neur. A person within a large corporation who takes direct responsibility for turning an idea into a profitable finished product through assertive risk-taking and innovation [intra(corporate) + (ENTRE)PRENEUR]. (American Heritage Dictionaries, 1992)

The first appearance of the word intrapreneurship can be found in a 1978 article by Pinchot and Pinchot (1978), defining it as intra-corporate entrepreneurship. Intrapreneurship is described as a theory regarding how corporations can improve their responsiveness to new challenges by using internal entrepreneurs that are closer to the market and less affected by politics, than top-management. In this article, it is also suggested that this might be more appealing to R&D personnel, who are not necessarily motivated by economic rewards, but rather being able to pursue self-fulfilling targets. If these persons are not allowed to pursue these goals, this might drive them into entrepreneurship and instead competing with previous employers.

Further, corporate entrepreneurship is a strategy to enhance and encourage intrapreneurship. It is an alternative term for intrapreneurship with the difference that intrapreneurship is defined as employees initiatives resulting in a bottom-up process for exploitation of new opportunities, whereas corporate entrepreneurship is the top-down management strategy that can be used to foster intrapreneurship (Amo, 2006).

Govindarajan and Desai (2013) assert that for a company to be innovative, it must capitalize on ideas from inspired employees. They state that intrapreneurs exist in companies whether discovered or not, some companies just need help identifying them. Intrapreneurs are defined as ‘self-motivated free thinkers’ and experts at avoiding bureaucratic inertia. Findings show that within a large firm, 5 percent of the employees are ‘natural innovators’ whereas 0.5 percent are ‘great intrapreneurs’, who ideally fit the new business development role, this ratio is shown in Figure 2.1.
2.2 THE INNOVATOR

The aim of this chapter is to provide an explanation of the company innovator, by reviewing literature on intrapreneurs, innovators and entrepreneurs. Moreover, the intrapreneurial role is called innovator within the researched company. De Jong and Wennekers (2008) describe intrapreneurs as entrepreneurial innovators and summarise previous definitions of intrapreneurs from a number of shared features. Intrapreneurs are described as strong individuals who are prone to take actions on innovative initiatives, often without regard of permission or the needed resources. The authors describe intrapreneurship as a special case of entrepreneurship that shares many key behavioural aspects with the general concept. Key behavioural differences are the specific limitations that the business hierarchy and internal business environment could inflict, together with the possibilities for support that might be available from the existing business.

Douglas and Shepherd (2000) claim that persons seeking an entrepreneurial career, employee career or a mix between these two choose a career based upon the perception of mental fulfilment. They investigate the aspects involved with entrepreneurial decisions, such as whether to raise innovations within the company or leave the company and start their own ventures. Individuals who desire independence, are risk tolerant and can cope with hard work are also possible to keep within the company by either increasing their salary, giving them an intrapreneurial role, or allow for higher autonomy.

Govindarajan and Desai (2013) have in their work with different companies identified six different ‘patterns of successful intrapreneurs’. Intrapreneurs are mainly motivated by autonomy and influence rather than financial winnings. They are ‘change agents’ working actively to predict and drive change. Intrapreneurs are, visual thinkers who visualise different solutions, continuously nurturing ideas and refining them until they are good enough to be presented. They are modest persons with confidence who do not oppose taking risks when there is a potentially successful business opportunity.

An intrapreneur is a mixture of entrepreneur and innovator (De Jong & Wennekers, 2008), which is why the two sections below review the characteristics and behaviours of entrepreneurs and innovators separately. Many of the characteristics and behaviours presented as adhering to an innovator can as well be found as entrepreneur characteristics and behaviours and vice versa. The intrapreneur in this case is innovators within a company setting, which will often be presented with intrapreneurial challenges and possess intrapreneur characteristics. In many cases, the innovator is an intrapreneur described from a different perspective. Additionally, innovation has been identified as a core aspect of entrepreneurship (Drucker, 1985).
Entrepreneurial Characteristics and Behaviour

The specific behavioural patterns of entrepreneurship described in previous literature are studied to better understand the intrapreneur. The structure of this section is based upon the summary of key entrepreneurial characteristics and behaviour provided by De Jong and Wennekers (2008) shown in Table 2.1. To further strengthen the structure provided by De Jong and Wennekers (2008), the factors proposed are compared with related findings by other authors.

Table 2.1. Early-stage entrepreneurship: activities and behavioural aspects (De Jong & Wennekers, 2008).

<table>
<thead>
<tr>
<th>Activities</th>
<th>Behavioural aspects</th>
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<tbody>
<tr>
<td>A2. Designing the new product or concept</td>
<td>B2. Taking initiative</td>
</tr>
<tr>
<td>A3. Exploring the market</td>
<td>B3. Overcoming obstacles</td>
</tr>
<tr>
<td>A4. Resource acquisition</td>
<td>B4. Getting the job done</td>
</tr>
<tr>
<td>A5. Organising the new business</td>
<td>B5. Bearing uncertainty and risk</td>
</tr>
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</table>

Opportunity Perception and Creativity

Successful new entrepreneurs have commonly started up in a sector where they were previously employed (De Jong & Wennekers, 2008). The previous employment will give necessary information of market and performance gaps. This relates to opportunities being perceived as more valuable if not shared, meaning that intrapreneurs or entrepreneurs “must either possess different information than others or interpret the same information differently” (Shane, 2003, p. 41). Creativity and ability to understand causal links and patterns are crucial to make use of the information in new combinations (Gaglio & Katz, 2001; Shane, 2003). Opportunities can both be discovered or created where there is no previous demand, in a discovered performance gap or recognized through market exploitation (Sarasvathy, et al., 2003).

Quinn (1985) identified successful inventor-entrepreneurs as need or achievement oriented. As entrepreneurs are often lacking resources they tend to work in close relation with their customers in the development of ideas. In innovative companies the vision is tied to practical realities in the market, from the top to the bottom levels of the companies, managers focus on customer needs.

Creativity is an eminent trait of the entrepreneur according to Cromie (2000), stating that entrepreneurs think in non-conventional ways and challenge the status quo. Moreover, Pinchot (1987) describes that entrepreneurs constantly think of possible implementation plans.

Designing the New Product or Concept and Taking Initiative

New business initiatives often build on a new good, service, or process. These new enterprises will then include a product or concept development phase, which is processes requiring abilities that the entrepreneur possess (De Jong & Wennekers, 2008).

Exploring the Market and Overcoming Obstacles

A primary challenge for the entrepreneur is to identify the target audience. The target audience is the customer group that has the biggest need and thereby are most likely to invest in the new business. Market exploration will therefore include an investigation of the needs and characteristics of the target audience. (De Jong & Wennekers, 2008)

It is important for new entrepreneurs to believe strongly in their idea to find the motivation to convince new customers, investors and to overcome obstacles (De Jong & Wennekers, 2008). When reviewing success factors for innovation, Quinn (1985) describes founders of new initiatives as experts and pioneers in their area with a strong drive. This helps them push through roadblocks and overcome obstacles on the way of realising innovations. Pinchot (1987)
considers problem solving as a key characteristic of the intrapreneur and describes them as dreamers with drive. When developing the post-it at 3M, Art Fry (1987) met many obstacles, which was seen as a good thing, by everyone but the production department, and resulted in the quotation below.

“Problems are opportunities in disguise. The tougher they are the better. If the problems are easy to solve, your competition will soon be making it too.” /Art Fry (1987, p. 7)

Resource Acquisition and Getting the Job Done
Entrepreneurship can be viewed as the pursuit of opportunities without regard of the controlled resources (Stevenson & Jarillo, 1990). This makes the acquisition or mobilization of resources one of the most important activities (De Jong & Wennekers, 2008). Schumpeter (1934) describes ‘will to succeed’ and ‘satisfaction of getting things done’ as key motivational factors for entrepreneurs.

Organising the New Business and Bearing Uncertainty and Risk
Starting up a new enterprise will involve organising to create routine and structure to be used in the recombination of resources for the product or service (Shane, 2003). Organising a new business involves uncertainty but careful planning can reduce it, and provide a factual foundation for decision making (De Jong & Wennekers, 2008). Research has shown that entrepreneurs are more positive to risk-taking than other groups (Van Praag, 1996; Cromie, 2000).

Proactive behaviour
Proactiveness relates to the first three parts of entrepreneurial behaviour and characteristics, opportunity perception, taking initiative and new market exploration (Lumpkin & Dess, 1996). Proactiveness in organisations refers to corporations will to lead the new development of products, services and processes (Covin & Slevin, 1986). Bateman and Crant (1999) claimed that a proactive behaviour will increase organisational effectiveness. Frohman (1997) advises companies to revise policies and systems that might hinder individual initiatives. Research has revealed a clear relationship between proactiveness and several entrepreneurial behaviours, like starting a business, entrepreneurial attitude (Becherer & Maurer, 1999) and organisational innovation (Parker, 1998).

De Jong and Wennekers (2008) derived four proactive behaviours from the organisational behaviour literature: personal initiative, taking charge, voice and issue selling. Personal initiative is defined as self-started (proactive) work behaviour to overcome hinders and achieving a certain goal (Frese & Fay, 2001). Taking charge is a voluntary and constructive effort towards organisational improvement, which challenge the status quo and brings constructive change (Morrison & Phelps, 1999). Voice is a behaviour that promotes new ideas to change and improve standard procedures even when others disagree (Van Dyne & LePine, 1998). Issue selling is an attempt to influence the organisational strategy formulation by bringing issues to the attention of supervisors (Ashford & Dutton, 1993). The proactive behaviours are related through their common view of the work role and focus on actualizing improvements in the company (De Jong & Wennekers, 2008).

De Jong and Wennekers (2008) state that there is a difference between proactive and innovative behaviour as studies of proactiveness do not explore the first opportunity exploration stage of the entrepreneurial process and studies of innovative behaviour does not fully explore the subject of implementation. There is however an overlap in behaviours referring to overcoming barriers and forming an implementation plan.
Innovator Characteristics and Behaviour

Dyer, Gregersen and Christensen (2011) state that there are five specific discovery skills that are significant for innovators. Discovery skills adhere to innovation whereas delivery skills adhere to execution. Through these skills, persons can identify their profiles, whether they are an innovator, an executor or, a mix between these two, called developers. The skills pertaining to innovators and executors are listed in Table 2.2.

Table 2.2. Discovery and delivery skills (Dyer, et al., 2011).

<table>
<thead>
<tr>
<th>Innovator (Discovery)</th>
<th>Executor (Delivery)</th>
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<tbody>
<tr>
<td>Associating</td>
<td>Analysing</td>
</tr>
<tr>
<td>Questioning</td>
<td>Planning</td>
</tr>
<tr>
<td>Observing</td>
<td>Detail-oriented</td>
</tr>
<tr>
<td>Networking</td>
<td>Implementing</td>
</tr>
<tr>
<td>Experimenting</td>
<td>Disciplined executing</td>
</tr>
</tbody>
</table>

From the innovative skills, associating could be seen as the overarching key cognitive skill. Generating innovative ideas could both spur from an associational mind or a behaviour relating to the remaining four discovery skills. Questioning, observing, networking and experimenting could be seen as the catalysts for associative thinking. To achieve innovative business ideas, you need to think associative and engage in the four other discovery skills. These activities are driven by the individual’s courage to innovate, see Figure 2.2. These behavioural patterns evolve over time to form a discovery habit.

![Figure 2.2. The innovator's DNA model for generating innovative ideas. (Dyer, et al., 2011)](image)

De Jong and Wennekers (2008) derive four innovative behaviours from organisational behaviour literature, namely, opportunity exploration, idea generation, championing and application. Opportunity exploration relates to how the actualization of something new always begins with an individual identifying an opportunity (Basadur, 2004). Searching for improvements or think of current solutions in alternative ways also fall under the concept of opportunity exploration (Zaltman, et al., 1973). Idea generation is the step following after discovering an opportunity. Kanter (1988, p. 175) states that: “Awareness of a need (opportunity) is one element; ability to construct new ways to address the need is a second”. Successful idea generation comes from combining and reorganising new knowledge and existing solutions to fit the discovered opportunity (De Jong & Wennekers, 2008). Champions are as described by De Jong and Wennekers (2008) as individuals who promote and put effort into selling ideas, often without being formally selected. Champions are often self-appointed promoters feeling strongly about an idea. Championing includes negotiating and seeking support for ideas (Zaltman, et al., 1973). Application refers to the behaviours of forming a practical proposition and finding a way to
exploit the opportunity (De Jong & Wennekers, 2008). Additionally, application includes developing the new product or process, testing and altering the concept (Kanter, 1988).

### 2.3 Motivation for Innovators

One area of research in improving the utilisation of innovation capabilities within a company is motivation. To truly be able to utilise the innovative capabilities of the firm, the employees must be motivated to do so. Amabile (1998) explains that managers unintentionally suppresses the organisations inherent creativity. This is mostly done trying to boost coordination, productivity and control, hence curbing creativity. Either of these business dimensions or creativity can be set aside, but Amabile (1998) assures that these are not mutually exclusive.

Amabile (1996) derives a definition of entrepreneurial creativity from definitions of creativity, innovation and entrepreneurship: “Entrepreneurial creativity is the implementation of novel, useful ideas to establish a new business or new program to deliver products or services” (Amabile, 1996, p. 2). There are three components of creativity, namely; expertise, creative thinking skills and motivation, see Figure 2.3. ‘Expertise’ refers to a person’s area of knowledge, regardless of how this knowledge is acquired. By ‘creative thinking skills’ is meant how flexible and imaginative the technique is by which a person approaches a problem and how a person associates existing knowledge to create new solutions. These two components constitute the employee’s raw materials whereas the third factor ‘motivation’ determines what actions you will get from people. An employee may have great expertise and creative thinking skills, but these will remain unused if the person is not properly motivated. (Amabile, 1998)

![Figure 2.3. Three components of creativity. (Amabile, 1998)](image)

Motivation can further be divided into intrinsic and extrinsic motivation, where the first has shown to better stimulate creative work. Managers can affect all three components to creativity, where expertise and creative thinking skills are the components that are most difficult to influence. Managers can still try to influence them but trying to influence intrinsic motivation will show more direct outcomes. Research has shown that there are mainly six categories of managerial practices affecting creativity, which will be further explored in the section 2.5 Enablers for Innovators. (Amabile, 1998)

“It is a very grave mistake to think that the enjoyment of seeing and searching can be promoted by means of coercion and a sense of duty.” (Einstein, 1949, p. 19)

To explain the difference of being extrinsically or intrinsically motivated Amabile (1998) gives an example of passing a labyrinth. The extrinsic motivated person seeks the reward on the other side and forces through the labyrinth, as quick as possible, probably in the footsteps of someone before. The intrinsic motivated person might walk around in the labyrinth exploring different paths, which lead to several failures but also higher probability of finding the ideal path. The extrinsically motivated person finds the quick solution to collect the reward, whereas the
intrinsic motivation will try to find the best solution from finding enjoyment in the task itself. Ryan and Deci (2000, p. 56) define intrinsic motivation as “the doing of an activity for its inherent satisfaction rather than for some separable consequence”. According to Ryan and Deci (2000) most activities are however not motivated intrinsically but different extrinsic levels. They give an example of two extrinsically motivated students; one doing the homework from fears of sanctions and one sees it as a tool to the wanted career. Neither of these student study from interest (intrinsic motivation) but with different levels of self-determination. Ryan and Deci (2000) identified four types of extrinsic motivation as shown in Table 3.3.

Table 2.3. Four types of extrinsic motivation sorted upon degree of self-determination. (Ryan & Deci, 2000)

<table>
<thead>
<tr>
<th>Degree of self-determination</th>
<th>Extrinsic motivation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>‘External regulation’</td>
<td>Rewards to satisfy external demands.</td>
</tr>
<tr>
<td></td>
<td>‘Introjection’</td>
<td>Performing with the feeling of pressure to avoid negative effects.</td>
</tr>
<tr>
<td></td>
<td>‘Identification’</td>
<td>The person has identified herself with the importance of the behaviour and hence feels as if the choice of action were her own.</td>
</tr>
<tr>
<td>High</td>
<td>‘Integration’</td>
<td>The regulations converge with the persons needs and values</td>
</tr>
</tbody>
</table>

Herzberg (2003) has conducted research in the field of motivation, where some of the findings regarding factors affecting job satisfaction are concluded in Figure 2.4 below.

Herzberg (2003) has found that achievement and recognition are factors that lead to satisfaction, whereas the lack of good work conditions and salary lead to dissatisfaction. The factors leading to satisfaction is referred to as ‘motivators’ and the factors whose absence leads to dissatisfaction as ‘hygiene factors’. These factors do comply with the factors proposed by Ryan and Deci (2000) for intrinsic and extrinsic motivation, where extrinsic motivation corresponds to ‘hygiene factors’ and intrinsic motivation to the ‘motivators’. This together with Amabile’s (1998) theory that intrinsic motivation is necessary for creative work, implies that in order to enable for creative work, hygiene factors such as good salary and work conditions must first be in place and thereafter, ‘motivators’ enhances the environment for creative work.

Dyer et al. (2011) found two factors motivating innovators, namely a continuous desire to change the status-quo and making change happen through smart risk taking. Innovators are achievement focused (Quinn, 1985), which connects to the studies by McClelland (1961) who
propose a needs theory that explains three different human motives, namely ‘need for achievement’ (N\text{Ach}), ‘need for affiliation’ (N\text{Aff}), and ‘need for power’ (N\text{Pow}). Persons having a N\text{Ach} are explained as to “having an interest in getting ahead in the world” (McClelland, 1961, p. 43). Persons having a N\text{Aff} “indicates a concern in fantasy and in action for warm, close relationships with other people” (McClelland, 1961, p. 161), whereas those having a N\text{Pow} find relevance “with the control of the means of influencing a person” (McClelland, 1961, p. 167). Persons having a N\text{Ach} are particularly suited for an entrepreneurial role since it fits their desired motivation.

The needs theory from McClelland (1961) does present similarities with Maslow’s (1943) hierarchy of needs, where N\text{Aff} does correspond to social needs, N\text{Pow} to self-esteem and N\text{Ach} to self-actualisation, see Figure 2.5.

![Figure 2.5. Comparison between the hierarchy of needs by Maslow (1943) and need theory by McClelland (1961).](image)

The base of the pyramids in Figure 2.5 does match the ‘hygiene factors’ proposed by Herzberg (2003), as the top matches the ‘motivators’. Hence, the persons having a N\text{Ach} desire intrinsic motivational factors (Ryan & Deci, 2000) suitable for creative work (Amabile, 1998). This is further supported by findings presented by McClelland (1961) who states that entrepreneurs have a high level of N\text{Ach}.

In a motivational study done by Capgemini Consulting in Innovation Leadership, the different innovation motivational factors for executives and employees were examined. 25 interviews were done to identify adequate perspectives of innovation on which a survey was based. Answers were collected from 260 innovation executives from different geographical locations and industries. The two main motivational factor for executives was found to be the extrinsic factors “Accountability for realizing growth” and “Feel responsible for advancing innovation in the organisation”, whereas the top two motivators for employees were the two intrinsic factors “Innovation is considered to be exciting work” and “Desire to improve things”. (Miller, et al., 2012, pp. 20-21)

Psychological ownership is a way to create a sense of responsibility (Pierce, et al., 2001), which can strengthen the innovative initiative (De Jong & Wennekers, 2008). This sense of responsibility can in turn be seen as an incentive or motivator since it can spur individuals to work harder. For example the 15 percent time 3M employees are allowed to spend on their projects of interest is a result of a senior manager who recognised that people put their best effort in their ‘own’ projects (Fry, 1987).
Psychological ownership is separated from legal ownership, as it is merely a state of mind where the individual feel as if in possession of an object or project (material or immaterial) (Pierce, et al., 2001). Pierce et al. (2001) suggests three factors leading to psychological ownership; the first is control of your own work, the second is the investment of time, energy and/or ideas and third is through obtaining deep knowledge of the object.

The researcher Daniel Pink (2009) has identified autonomy, mastery and purpose as the main factors for human motivation. Monetary rewards have shown to only improve simple mechanistic tasks but when the task requires higher cognitive skills, it has the opposite effect. Pink (2009) also derives two types of people in the study: Type I and Type X. Type X are people motivated by extrinsic factors like awards or punishments, whereas Type I people are motivated by intrinsic desires like challenge, freedom and purpose. Other gains are likely to affect Type I but are primarily seen as a bonus. According to Pink (2009), the Type I people almost always perform better than Type X, the intrinsic motivators are renewable and the behaviour improve both physical and mental health.

Fry (1987) state that, for an intrapreneur, the opportunity to make something happen is often a stronger driver than conventional incentives like money or power. This is reaffirmed in Dyer, et als’ (2011), and would imply that innovators are driven by a need for achievement (McClelland, 1961). Intrapreneurs are thereby primarily driven by intrinsic motivation (Amabile, 1996).

**Autonomy**

Individuals acting with autonomy are better motivated and capable to actualize innovative ideas, as they are in control and therefore able to deal with roadblocks during implementation (De Jong & Wennekers, 2008). Independence is an acknowledged motive to become an entrepreneur according to Shane (2003). Douglas and Shepherd (2000) argue that individuals seeking independence are possible to keep within the company by increasing their salary or allowing higher autonomy through for example intrapreneurship. But in general, people who desire autonomy and are tolerant against hard work and risk are likely to prefer a situation of self-employment. In favour of autonomy, Pink (2009) refer to a study by McGregor (1985) including 320 small companies, where half practised top-down management and half granted the workers autonomy, where the businesses granting autonomy grew at four times the rate of the others and had one third of the employee turnover.

"Hire good people, and leave them alone." /William McKnight, former 3M president and chairman. (Pink, 2009, p. 44)

Pink identified four work-aspects of autonomy: what is done (task), when it is done (time), how it is done (technique), and whom it is done with (team). At the software company Atlassian intrinsic motivation was found through giving employees control over all aspects. (Pink, 2009)

**Task**

The first aspect, what is done, refer to what project the employee is engaged in. An example of this is 3M’s idea of allowing employees fifteen percent of their time for their own projects, which has resulted in many new products like the post-it note for example. The software company Atlassian, tried out the concept through something called the ‘FedEx day’. Every quarter, the employees gets one day to do develop whatever they want as long as it is not their ordinary job. The next day, the result is presented to the colleagues, meaning that many employees work through the night to get finished, which also gave the event’s name as employees have to deliver overnight. This was great success, with many new product
developments, why the Atlassian founder decided to give employees twenty percent time to work on their own projects. The most well-known company adopt this model is Google, which has resulted in a tremendous amount of new products and services like Gmail, Google News, and Google Translate. The Google engineer Alec Proudfoot states in a TV interview that: “Just about all the good ideas here at Google have bubbled up from 20 percent time.” (Pink, 2009, p. 44)

**Time**
Having control over your time is essential in order to achieve autonomy. In work that does include a close relation between time and output (e.g. a factory), time autonomy is less important, but for work without this relation, total time control can be devastating. Trying to exert total time control over such employees might result in employees coming in to do their hours rather than to accomplish something. (Pink, 2009)

**Technique**
Autonomy over technique, how things are done, can possibly restore some freedom in an otherwise degraded work where the employer have tried to make the employees expendable. Pink (2009) brings up an online shoe-retailer, Zappos, as example. The founder hired personnel for the telephone customer service but instead of putting them under constant observation, with measurements of call-length and strict manuscripts to follow, the personnel was educated and allowed to choose how to best help their customer. The result was almost no turnover in personnel and high rankings at customer-service, in an industry where a high turnover is otherwise standard. Other companies that tried the same approach with letting the employees choose how to help the customer and where to work, have reported a significant reduction in recruiting costs as people are now applying to work for them. (Pink, 2009)

**Team**
Selecting the team in which an employee work is more difficult to implement but also important in some cases. Working for a collective cause can be a strong driver as the Atlassian founder discovered when checking the time employees spent on their own project. This time was often well under twenty percent, as the employees did not want to let-down the team in on-going projects. (Pink, 2009)

**Mastery**
An example of mastery is the reason why many learn to play guitar. Learning how to play a guitar is fun and an opportunity to get better and continually learn something. When playing, many people experience that the goal is self-fulfilling, which means that the activity is the reward (Csikszentmihalyi, 2000). Csikszentmihalyi (2000) claim that the most satisfying experience for a person is to be in ‘flow’. Flow is defined as a state where the goal is clear, you get immediate feedback and the difficulty of the task is perfectly balanced to the persons skills, meaning that the challenge is neither to hard nor to easy. The goal is possible to reach but it will take some effort, and reaching the goal is enough reward in itself. Being in flow, makes the sense of place, time and self melt away.

Not utilizing flow will give high costs in both employee satisfaction and organisational health (Pink, 2009). According to Pink (2009), a vice president tried implementing this through encouraging managers to give clear goals and ways to get feedback in work assignments. The employee-supervisor meetings were also changed from performance-reviews once a year to having discussions about the personal development towards mastery and the employee’s engagement six times per year. This worked so well that it was implemented in all the company’s offices all over the world. It is easier to find flow in work than in free time, according
to Csikszentmihalyi’s (2000) observations. This is because of the structure of well-balanced challenges, clear goals and immediate feedback that work often provides. This can be utilized to reach both higher productivity and achievements as well as greater satisfaction among employees.

Furthermore Pink (2009) brings up how extrinsic rewards can turn play into work, but also that it can be reversed. By allowing employees some degree of freedom even mundane jobs can be modified to include mastery in some degree.

The path to mastery has been studied by different researchers and three laws have been found that help define the different aspects of mastery. The first law states that the pursuit of mastery is a mind-set, with a target to learn something in full and not to the level of a fixed goal. The second law establish that mastery is pain, and that reaching mastery is a struggle, which will take hard work and much willpower. The third law claim that it is impossible to reach mastery. Learning efforts increase the skills but it is impossible to finish the work. The pleasure must be in the pursuit rather than in the accomplishment of the goal. (Pink, 2009)

**Purpose**

Pink (2009) describe the different factors of autonomy, mastery and purpose as interlinked. Purpose sets a direction to the other two. Autonomous people who strive towards mastery show very high performance, but with a purpose they can reach even further. Pink (2009) paraphrases Hewlett (2009), and describes how two major generations, one entering and one on the verge of leaving work-life have redefined success. The goal of these generations is not to earn lots of money but rather to contribute to society, which requires a different set of incentives. This search for purpose gives way for new business models and companies like ‘TOMS Shoes’, which give one pair of shoes to a child in a developing country for every pair of shoes sold. The goal in this company is not to get rich but to make a contribution to the world. (Pink, 2009)

### 2.4 Barriers to Innovators

Barriers are in this study defined as the factors or practices impeding innovators within the company. Amabile and Gryskiewicz (1987) note in a study regarding environment for creativity that the opposites of factors improving creative environments pose barriers to creativity. The barriers found were experienced in project with low creativity features. Sykes and Block (1989) identified obstacles to corporate venturing that often arises when companies reach their maturity phase and focus shifts from exploring and capturing opportunities to defending and exploiting acquired resources. They found that a conflict is created between the requirements from new venture initiatives that oppose this matured company setting. For large companies to continuously be successful, they need to understand the difference between the managerial practices within a matured company and those desired for new venture creation.

The barriers found in previous studies have been divided into organisational level and managerial level, depending on what level these are most suitable to address. For example, barriers that needs to be addressed, limited or removed at organisational level, like the general company structure, is sorted into that section. A brief summary and description of the barriers is shown in Table 2.4 and presented in detail below.
Table 2.4. Barriers to innovators.

<table>
<thead>
<tr>
<th>Level</th>
<th>Barrier</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisational Level</td>
<td>Innovation Hostile Climate/Culture</td>
<td>Company norm/status quo opposing innovators.</td>
</tr>
<tr>
<td></td>
<td>Inflexibility</td>
<td>Institutionalisation hindering the agility needed for new opportunities.</td>
</tr>
<tr>
<td></td>
<td>Lack of funds</td>
<td>Underestimation of funds required for innovation.</td>
</tr>
<tr>
<td></td>
<td>Divisional Organisation</td>
<td>Low transparency in the organisation due to a separation of division/functions.</td>
</tr>
<tr>
<td></td>
<td>Financial Measures</td>
<td>Relying on financial measures, which might not reveal the positive aspects of some innovations.</td>
</tr>
<tr>
<td></td>
<td>Risk Aversion</td>
<td>The organisations unwillingness to engage in unfamiliar or risky initiatives.</td>
</tr>
<tr>
<td></td>
<td>Lack of Manager Authority</td>
<td>Lower management having little authority, hence unable to act upon ideas.</td>
</tr>
<tr>
<td></td>
<td>Inadequate Reward Systems</td>
<td>Rewarding all employees uniformly, this may not appeal to all individuals.</td>
</tr>
<tr>
<td>Managerial Level</td>
<td>Scepticism</td>
<td>Manager reviewing new initiatives by its flaws.</td>
</tr>
<tr>
<td></td>
<td>Lack of Autonomy</td>
<td>Managers constraining employees work process.</td>
</tr>
<tr>
<td></td>
<td>Unreasonable and Unclear Targets</td>
<td>Too high or low expectancies or unclear goals.</td>
</tr>
</tbody>
</table>

Organisational Level Barriers

In this section, barriers that pose a barrier on an overarching organisational level are described. This includes barriers that extend over the whole organisation or regarding operational questions in general in comparison to managerial level barriers that are best addressed by the manager at unit level, which is reviewed under Managerial Level Barriers below.

Innovation Hostile Climate/Culture

The organisational climate refers to characteristic behavioural tendencies, attitudes and feelings (Nystrom, 1990). Groups can apply great pressure on an individual to alter their behaviour to fit the collective. Tushman and O’Reilly (1996) refer to a ‘cultural inertia’ developing through established norms, values and expectations of how things should be done. This constitutes that if intrapreneurship is wanted it will be promoted and vice versa.

People with strong initiative and entrepreneurial attitude are often viewed as troublemakers and not team-players in big companies (Quinn, 1985). In general people have a tendency not to like changes in their environment since many initiatives ‘rocks the boat’ and force others to constantly adapt to new situations (De Jong & Wennekers, 2008).

MacMillan et al. (1986) paraphrase Kanter (1983), who claims that modern organisations hinder entrepreneurial initiatives since these infer an extreme specialisation of lower-level employees. This specialisation hinders employees from achieving an overall view of crossovers and possible combinations.

Inflexibility

Some degree of institutionalisation is necessary in larger firms to enable delegation and control, but the enforcing of these procedures in new ventures will severely handicap new businesses in which you need to be very responsive (Sykes & Block, 1989). Govindarajan and Desai (2013) state that employees constituting the company’s intrapreneurs are eager to fight internal inertia. This corresponds with the findings of Amabile and Gryskiewicz (1987) who state that overemphasis on status quo implies that everything should be carried out in the same way throughout the whole organisation and entails a risk averse behaviour. Furthermore, the long-term time-plans are another obstacle that could infer firms to follow strict plans with distant
objectives and not responding to a changing environment or industry (Sykes & Block, 1989). Additionally, bureaucracy creates very long decision paths, which makes the company miss important opportunities because of its sluggishness (Quinn, 1985). Organisational inflexibility might result in problems with companies’ budget processes which hampers the realisation process for innovators (Kuratko, et al., 1990). Fry (1987) describes that a flexible company setting enables different development units to borrow materials from each other and hence save significant costs.

**Lack of Funds**
A direct mirror of Resource Availability in section 2.5 Enablers for Innovators below is the lack of funds (Kuratko, et al., 1990). MacMillan et al. (1986) found underestimation of funds required as a serious obstacle for start-ups and corporate ventures.

**Divisional Organisation**
Features of organisational climate that can hurt the creativity are for example lack of cooperation within and between units or complicated processes and structures which cause employees not to know where to report or contribute (Amabile & Gryskiewicz, 1987).

**Financial Measures**
Managing resources for efficiency and Return on Investment can, according to Sykes and Block (1989), result in managers relying on financial measures and hence being pessimistic to new ventures, since these seldom show positive financial result initially. The authors mean that the focus should be on the needed changes rather than financial efficiency, in highly technical industries, market share and penetration can be more important targets than rate of return. Quinn (1985) raises the same problem and means that the short time-horizons of several financial measures and the requirement to quarterly report profits can conflict with the longer timespans that innovations often require. Fry (1987) explains that the company 3M have incorporated a measure, which promotes innovation instead of analysing initiatives by its near time revenues, namely that 25 percent of 3M’s sales must come from products younger than five years. This is done to not risk becoming obsolete by relying on products that have shown to be profitable in the past.

**Risk Aversion**
Avoiding moves that risk the base business refers to a restrained attitude towards engaging in risky initiatives not conforming to the core business. This is an attitude that is most common in matured industries. Another factor contributing to companies being dubious to new initiatives is that the decision makers of new investments might be unfamiliar with the new business area. Since in most cases prior experience does not exist within this business because it is unexplored, this could imply incorrect actions to a new business. (Sykes & Block, 1989)

**Lack of Manager Authority**
Managing in a functional way leads to specialisation, meaning that managers seldom acquire multi-functional understanding until they have reached a higher level in the hierarchy. This translates to that the lower level managers put in charge of new ventures do not have sufficient competence or authority but have to move decisions up the chain of command. New ventures are often small projects and consequently the managers are allocated small workgroups and limited authority. Furthermore, since the workgroups are small and the manager is often a technical expert, the inherent competences may in some cases be inadequate for the objective of developing a new venture. Without a good mix of business and technically oriented people it might lead to technical success but market failure. (Sykes & Block, 1989)
Inadequate Reward Systems
One barrier is noted to be a malfunctioning reward and recognition system. Either rewards are distributed unequally, or there is too much focus on rewards. Rewards in form of promotions to a manager position send the wrong signals because it would imply that managers are higher in rank than specialised employees. (Amabile & Gryskiewicz, 1987)

“The problem is that there is a tendency to drive people toward management— that is the way to move up— and no drive to keep them in the technical side. There is a dual ladder system, but it is clearly not an equitable situation. One ladder is shorter than the other.” (Amabile & Gryskiewicz, 1987, p. 21)

Not rewarding the higher risk and increased effort often needed in new ventures is considered a barrier. Another barrier related to reward systems is to only promote ‘compatible individuals’, which could result in innovators not being considered for promotions since entrepreneurial behaviour can be seen as radical and uncontrollable. (Sykes & Block, 1989)

Managerial Level Barriers
This section describes barriers that exist on team level and should be addressed on manager level as opposed to the aforementioned organisational level barriers. Many of the organisational level barriers will apply on this level as well, as they are present in the whole organisation.

Scepticism
Managers can kill creativity by meeting new initiatives with scepticism. There are many cases where new ideas encounter harsh reviewing processes instead of an open mind-set. (Amabile, 1998) Another perspective of this barrier is organisational indifference, which refers to the organisations intolerant attitude towards new ideas or being satisfied with a sufficiently good product. (Amabile & Gryskiewicz, 1987) Amabile (1998) explains that there in many cases during evaluation of ideas have been managers searching for reasons why not to proceed with an idea instead of looking at its benefits. She proposes that this phenomenon is explained by a psychological dynamic, where employees believe that their managers will see them as smarter if they have a critical attitude. Several companies see it as professionally rewarding to act critical upon new ideas.

Lack of Autonomy
Whilst freedom over how or what to do something implies a sense of control and leads to improved creativity, a lack of freedom could have the opposite effect. Lack of freedom or constraints to follow a specific process without flexibility to influence leads to less intrinsic motivation and a monotonous work environment, thus limiting creativity. (Judge, et al., 1997)

Unreasonable and Unclear Targets
Evaluation pressure means that the management could have too high expectancies or applies pressure to continuously perform. Challenges can, when provided at sufficient level, trigger individuals to perform better. In contrary, when challenges are at too high level or when creating win-lose situations between teams trying to achieve the same goal, this creates an unfavourable relationship. (Amabile & Gryskiewicz, 1987)

Another barrier to creativity discovered by Amabile and Gryskiewicz (1987) pertaining to project management is the absence of clear goals. Without a clear and common goal in mind, it is hard to establish effective cooperation in teams.

Judge et al. (1997) find a mutual aspect of highly innovative firms is the emphasis on reasonable goals and not stressing deadlines. Managers in these firms try to minimise the number of projects
employees are assigned to, since working on several projects makes it harder to focus. Reasonable time pressure is an important aspect of assigning projects and setting deadlines. This relates further to the Assignment Matching in the section Managerial Level Enablers below.

2.5 ENABLERS FOR INNOVATORS

Corporate Entrepreneurship is a strategy to enable for intrapreneurship. Enablers are defined as organisational prerequisites for a good intrapreneurial climate to allow for maximal utilisation of innovation capabilities. This chapter aim to highlight and summarise the enablers for intrapreneurship and innovation found in previous research.

The enablers found in previous studies have been divided into organisational level and managerial level, depending on what level these are most suitable to address. A brief summary and description of the enablers is shown in and presented in detail below.

Table 2.5 and presented in detail below.

<table>
<thead>
<tr>
<th>Level</th>
<th>Enabler</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisational</td>
<td>Structure</td>
<td>Organisational structure supporting innovation.</td>
</tr>
<tr>
<td></td>
<td>Culture for Innovation</td>
<td>Organisational behaviour accepting and encouraging innovation.</td>
</tr>
<tr>
<td></td>
<td>Process Autonomy</td>
<td>Freedom over how to solve a task.</td>
</tr>
<tr>
<td></td>
<td>Resource Availability</td>
<td>Supplying innovation work with sufficient resources.</td>
</tr>
<tr>
<td></td>
<td>Personalised Recognition</td>
<td>Personal recognition of the individual and rewards matched to the person.</td>
</tr>
<tr>
<td></td>
<td>Ideation Tools</td>
<td>Tools supporting idea submission and collaboration.</td>
</tr>
<tr>
<td>Managerial</td>
<td>Management Support</td>
<td>Managers actively promoting the innovation and assisting the innovator.</td>
</tr>
<tr>
<td></td>
<td>Recognition</td>
<td>Understanding what motivates innovators.</td>
</tr>
<tr>
<td></td>
<td>Assignment Matching</td>
<td>Matching employees with sufficiently challenging tasks.</td>
</tr>
<tr>
<td></td>
<td>Team Composition</td>
<td>Assembling teams with right candidates and diversity.</td>
</tr>
</tbody>
</table>

Organisational Level Enablers

Amabile (1998) exemplify a chemical research organisation that excels in innovation. The employees were no different from those of other companies and the company was not doing unusually well financially, what was notable in this company was the leadership quality in both top- and team-level management. The assignment matching, goal formulation, team autonomy, communication and team composition was excellently practiced. The employees were kept working, in small diverse teams with great autonomy, at the edge of their individual abilities and all towards clear goals set by managers in collaboration with the teams. The organisation was also keen to reward scientists for their creative efforts, even if the road towards the success was bordered by failures. Furthermore cross-unit collaboration within divisions was highly encouraged and recognised. The general manager set an example himself by offering technical and strategic help, thus showing that it was expected that everyone did so.

In the following section, sets of organisational enablers mentioned in previous literature are listed. The focus is put on organisational level and what must be emphasised on this level to be reflected on the lower levels.

Structure

Quinn (1985) found that the most innovative companies are those who keep the organisation flat with small project teams. The teams in development optimally consist of six to seven people, who are committed to the team and together possess the necessary skills for their assignment. Further, the divisions are kept small, below 400 people. This enables managing each unit with a
maximum of two layers of managers. In larger units, Quinn (1985) claims that employees might lose touch of their product or process. Moreover, development projects have to pass many formal screens where a positive answer is required, but only one negative response might end the process, which makes it hard to survive. Kuratko et al. (1990) further strengthen the theory that small experimental project teams enhance the innovative capabilities. Additionally, providing authority and decision-making power to management is proposed to enable for innovative initiatives.

Establishing both formal and informal networks is vital for enabling the cooperation needed for improving a company’s innovative capabilities. Formal networks could be for example forums or lectures, whereas informal networks appear on coffee breaks and in recreational clubs. (Fry, 1987)

**Culture for Innovation**
Kuratko et al. (1990) proposes that if managers show support for and encourage risk-takers, this in turn positively affects the intrapreneural climate. De Jong and Wennekers (2008) further state that in order to improve the innovative capability, it is of great importance to foster a culture for innovation within the organisational climate. Groups can apply great pressure on an individual to alter their behaviour to fit the collective, meaning that if intrapreneurship is wanted it will be promoted and vice versa.

Kanter (1985) recognise that innovative companies put high value in their employees and expect high potential in return. Innovative companies invest a lot in their employees and culture, since it is assumed and expected to pay off in great achievements. This sort of culture is generally created through rich praise, public acknowledgement and awards of recognition, which set a standard and inspires others.

Kuratko et al. (1990) identified three organisational enablers related to fostering an innovative culture. Two of these are related to organisational learning and acceptance for failure, namely to use mistakes as learning experiences and to grant second chances after mistakes. The third enabler is concerned with the innovators work description, where it is recommended to define turf for employees. Moreover, Fry (1987) proposes that not allowing failures will make the entrepreneurial spirit disappear.

**Process Autonomy**
It is necessary to involve some degree of freedom in work in order to appeal to the creative side of employees. The employee should be able to decide how to solve a problem, not necessarily the outcome, but the process used to reach it. To have a clearly specified goal is, as mentioned before in section 2.3 Motivation for Innovators, one part of achieving flow (Csikszentmihalyi, 2000). It is important that the goal is clear, communicated to the organisation and that the goal is constant for a period of time, since it is hard to work towards a moving target. Freedom over your work process increases intrinsic motivation and sense of ownership, which in turn increase creativity. The management challenge in this is to define a clear goal and allow for autonomy, which requires trust. (Amabile, 1998)

Judge, et al (1997) are strengthening the previous paragraph and found a clear relation between autonomy and innovation performance. Judge et al. (1997) paraphrase Bailyn (1985) who divided autonomy into two areas: operational and strategic autonomy. Operational autonomy refers to deciding your own means of how to tackle a problem or task, which offer a feeling of achievement upon project completion and is motivating the entrepreneurial spirit. Strategic autonomy refers to deciding the goals of work, and was suggested to be restricted to
management to align the aim of the organisation with those of the individual. Judge et al. (1997) have found that the most innovative firms stress the importance of freedom over the process, operational autonomy, but restricted the strategic autonomy to top executives, thusly finding a good balance of autonomy. Judge et al. (1997) paraphrasing Woodman et al. (1993) claim that too strong management supervision and control smother innovation, whereas Judge et al (1997) found that too little control from management causes misalignment and confusion. It is therefore important to find a balance of autonomy.

Resource Availability
The availability of resources is another recognised key for intrapreneurship (Kuratko, et al., 1990). Resources like funding, time and personnel are necessary for opportunity exploitation and for keeping involved individuals devoted (De Jong & Wennekers, 2008). As an example 3M allow research personnel to spend 15 percent of their time on projects that they find interesting, thereby giving them extra resources in time (Fry, 1987).

Amabile (1998) state that time can affect creativity in both a positive and a negative way. The urgency of a task can increase the sense of importance or challenge, thusly increasing creativity stimulation. But if there is obviously too little time or the deadline is set without reason, it will be demotivating for people feeling controlled and unfulfilled. In general, exploration and creative work is time-consuming. Quinn (1985) describe the usually long periods of time needed for implementing more radical innovations with delays of three to twenty-five years between innovation and commercialisation. This promotes a more step-by-step approach rather than formal time-plans. Kuratko et al. (1990) have moreover discovered that providing different options for financial support can improve the intrapreneurial capabilities.

Furthermore, Quinn (1985) found that highly innovative firms have teams working in a ‘skunkworks’-like manner. This is described as a small team of expert engineers working together with someone who have the needed resources and someone who can promote it, for example a champion, in order to solve a problem.

In the process of realising innovations, funding must be sufficient for completing the task, but pouring more money on a project will not increase motivation. Low funding will though increase creativity in terms of finding additional resources, but it will not increase creativity in development or research. Physical spaces with a creative atmosphere are perceived as important, though there are other far more important aspects to spend the resources on. (Amabile, 1998)

Personalised Recognition
For great improvements in creativity, organisational support is needed. Amabile (1998) states that supervisors’ encouragement surely foster creativity but true improvements can be accomplished with support from the whole company. Top management must implement systems or a procedure that clearly communicates that creativity efforts are of top priority.

Amabile (1998) argue that organisations should reward creativity, but avoid financial incentives as it makes people feel controlled, thus strengthening the findings by Judge et al. (1997). Amabile (1998) claim that not recognising creativity can make people feel unappreciated and exploited for their efforts. One of the most important aspects is to support information sharing and collaboration. The exchange of ideas will increase the overall knowledge and the employees’ enjoyment in work.

In a study, Judge et al. (1997) found that the less innovative entities almost exclusively used extrinsic rewards of a relatively impersonal nature, whereas the most innovative entities
emphasised highly personal intrinsic rewards to give credit to single employees’ and teams’ accomplishments. It is not recommended to exclude extrinsic rewards, though. Furthermore, Judge et al. (1997), paraphrasing Pittman et al. (1982), claim that extrinsic rewards rather result in misdirecting employees’ energy instead of directing it in creativity efforts as intrinsic rewards. Some companies do show appreciation and recognition by promoting successful innovators to managers. Fry (1987) explains that a more adequate way to show this appreciation is to establish a ‘dual ladder policy’, where the innovators can increase their salary without becoming a manager. This enables successful innovators to continue innovating and instead be compensated by refined skills.

**Ideation Tools**

Karlsson (2010) describe the idea management system of the Swedish information and communications technology company Ericsson, which sort ideas into idea boxes corresponding to certain innovation needs. All employees can access the system and post new ideas or comment on existing ideas and the next evolvement is said to be inviting customers and partners to collaborate. Karlsson (2010) claims that there are five reasons why collaborative idea tools are needed in today’s organisations. Studies have shown that companies’ best ideas are produced internally and the collaboration tool helps gathering all good ideas from the employees. Innovation has been shown to be a result of collaboration over time and combining employee diversity and functions, which is utilised through the tool. The initial stages of innovation is essential, hence a tool facilitating and systematising the front-end is beneficial. The new era of technology enables a new platform, which simplifies cooperation and building on collective knowledge, which facilitates collaboration tools and makes them more useful. Finally, idea management tools have existed for some years and have come to a point where they are starting to formalise into a useful tool, which have gained through years of previous experience.

Karlsson (2010, p. 6) and Hassan (2010) explains challenges and problems of ideation and idea collaboration tools. The first challenge is to create a system to cope with the vast amount of feedback and managing of ideas (Karlsson, 2010; Hassan, 2010). Secondly, there are difficulties with how to define the innovation need to get a common understanding (Karlsson, 2010) and direction for innovation throughout the company making it possible to include in the business (Hassan, 2010). Moreover, the tool is not just a digital platform, accompanying processes and organisational support is also needed (Karlsson, 2010). Another challenge is how to inspire the employees and motivate them to share and contribute with their ideas. The idea collaboration must prove successful with benefits from the collective contribution, not just provide vast amounts of second-rate ideas (Karlsson, 2010). Hassan (2010) further explains that employees sometimes do not have the proper training or prerequisites to generate valuable innovations, resulting in that these untrained employees tend to generate mostly incremental process improvements related to their surrounding environment. Furthermore, there is a need to show the ideas progress in the system, to not demotivate innovators who desire to realise their own ideas. If there is one person reviewing the ideas, there is a risk that this person does not realise the ideas full potential if it provides value in an unaccustomed area.

**Managerial Level Enablers**

This section constitutes a set of enablers on managerial level. The following enablers are essential for each manager in order to improve the innovative climate and amplify innovation performance.
Management Support
The support of superiors is a strong trigger for innovation efforts at the individual level (De Jong & Wennekers, 2008). The management’s willingness to facilitate entrepreneurial projects is a key enabler to an effective organisational environment for actualisation of entrepreneurial ideas. Managers can help fostering an innovative climate by encouraging bending rules and taking calculated risks. The climate is further enhanced if top management have experience from innovative projects and are willing to sponsor promising initiatives. (Kuratko, et al., 1990) Fry (1987) state that if managers are not willing to set aside previous plans to seize an opportunity, there is little encouragement for intrapreneurs. Moreover, executive champions are suggested as a way to help innovators cut through corporate politics and receive funding.

Recognition
The recognition system, mentioned under Organisational Level Enablers, must be considered on managerial level as well. Kuratko et al. (1990) mention additional rewards or compensation as leading to improved intrapreneurial capabilities.

One form of managerial support is verbal encouragement (Krause, 2004). In verbal encouragement it is important to encourage both successful and unsuccessful creative efforts. Too sustain the passion in work people need to feel that it matters to the organisation or some people of importance, otherwise there is no point in putting effort at work. It is important to meet new ideas and initiatives with an open mind rather than with careful evaluation, criticism or a late response signalling indifference. In successful organisations, managers seldom offer extrinsic rewards for good results, but are rather known for generous recognition of employees and teams, which are often recognised even before any market impact have been shown. (Amabile, 1998)

Assignment Matching
As mentioned by Amabile (1998) and Csikszentmihalyi (2000), sufficient challenge is one of the most effective ways to stimulate creativity. If tasks can be matched to the employees skill-set, the assignment will trigger an intrinsic motivation. The goal is to find a task that stretch just beyond the employee’s abilities, if the stretch is too small it will cause tediousness but if it is instead to big the employee will give up. The real manager task in this case is to get to know his or her team well enough to conduct this matching.

Team Composition
To allocate time for problem solving with co-workers does improve the intrapreneurial climate (Kuratko, et al., 1990). The composition of the team is an important aspect and building creative teams takes careful attention. The group must be supportive and include certain diversity in terms of perspective and background to build a collaborative team that can find new solutions drawing on different knowledge and experiences. (Amabile, 1998) Judge et al. (1997) also concludes that the most innovative firms put a strong emphasis in fitting the candidate into the team context during their recruitment process. It is important that the team members have a shared excitement over the common goal, are willing to collaborate and help each other, and that the diversity in knowledge is recognised throughout the team. Constructing these teams is another management challenge. A common fault is to assemble too homogenous teams, which will find quick solutions with less conflict, but not increase the knowledge or widen the perspective of its members. (Amabile, 1998) Moreover, a manager with unmatched skill-set can undermine the creativity and have negative result on innovative capabilities (Amabile & Gryskiewicz, 1987).
3. METHODS

The aim of this chapter is to explain the used research methods to give insight into the procedure. The research is constructed to fit the task given by the commissioning company and to make a valuable contribution to the research area of innovation management. The goal of the research method is to gain a deep understanding in the subject and provide an answer firmly anchored in empirical research.

3.1 METHODOLOGICAL APPROACH

The study collected both qualitative and quantitative data, where the qualitative data was collected from interviews and quantitative data from questionnaires. The qualitative studies are aimed to get a deeper insight in the area of research whereas quantitative research collects more data for statistical analysis. (Collis & Hussey, 2009)

A case study process inspired the approach of this research. The approach incorporated elements of different methodologies to find the best fit for this specific research. Case studies aim to explore a single phenomenon in its natural setting through a set of methods, and is used to gain deep insight in the studied phenomenon in relation to the specific context (Collis & Hussey, 2009), which is why it was chosen for inspiration. The area of research was regarding how the company’s innovative capabilities can be further utilised and what hinders or enablers that need attention. As Yin (2009) argues, a case study is most suitable for research trying to answer how or why a specific social phenomenon occurs. It is advised to conduct a case study for researching underlying reasons of certain outcomes or phenomena. Though, the case study was used for inspiration it is not really a case study, since the study specialises in one case.

Collis and Hussey (2009) list five main stages for a case study: case selection, preliminary investigations, data collection, data analysis and report writing, see Figure 3.1.

![Figure 3.1. The five stages of a case study (Collis & Hussey, 2009).](image)

Case selection refers to the selection of a suitable setting to conduct the research, which has already been done in this case since it is a company request. The preliminary investigation was done to get familiar with the research context including topic and setting. In the data collection step the research methods was determined and data for analysis was collected. The study included a combination of data collection methods, as advised (Eisenhardt, 1989). Data analysis refers to the step of interpreting the data and investigating correlations. The final step of report writing is to present the process, observations and findings in a good comprehensible manner. A use of quotations and diagrams for better understanding was recommended for the report (Collis & Hussey, 2009).

A proposed iterative process (Yin, 2009), shown in Figure 3.2, is included for strengthened validity. The iterative model basically contains the same steps as the preceding model. The difference is the loop that is added from data collection and data analysis back to research design, which corresponds to preliminary investigation in the previous model. This creates feedback loop so that if something is missing, after the data collection or in the analysis, it is possible to loop back and alter the design of the next data collection.
Moreover, a combination of research methods called ‘methodological triangulation’ is incorporated, which means using more than one method to collect and/or analyse the data (Collis & Hussey, 2009). It is applied to conduct exploratory interviews, identifying the main issues and collecting a good base of data to give insight prior to the questionnaire. Jick (1979) further states that that triangulation can reduce bias in methodology, sources and researchers, as well as aid in identification of divergent patterns. Triangulation additionally gave more confidence to the results (Jick, 1979), as well as increased validity and reliability (Denzin, 1978). The separate data-collection methods are standalone studies but applied on the same subject for increased validity.

## 3.2 Research Process

The research process, found to be most suitable for this study was a combination of the suggested processes from Yin (2009) and Collis and Hussey (2009). The steps included in the research outline are described in Figure 3.3 below. The arrows on the right indicate the feedback loop to improve and repeat previous steps in between the different data collections such as interviews and questionnaire.
Figure 3.3. Research process description.

Research Design

The process of data collection and analysis, see Figure 3.4, was divided into four more detailed sub-steps created to fit the examined topic and methodology. Step 1 served to gather primary and secondary data whereas Step 2 and Step 3 produced primary data. This is followed by an analysis, which resulted in recommendations and conclusions.

Figure 3.4. Process for data-collection and analysis.

The process converging the factors into a final action plan can be described in four steps:
1. A literature study in previous research and initial interviews within the company were conducted to set the scope and gather more nuanced data for the analysis, by identifying the different factors influencing the innovators’ climate.

2. A questionnaire was then created, around the factors found in the first step, to collect quantitative data for statistical analysis on the subject. The quantitative data additionally served to validate the factors effect on innovators and their existence throughout the whole organisation.

3. The last step in the data collection was to conduct a workshop with individuals offering different perspectives regarding the organisational requirements for improving innovator conditions. The aim was to get deeper insight into the actions and enablers that are central for increasing the utilisation of innovation capabilities.

4. Lastly, the collected data from preceding steps was analysed and condensed into a conclusion.

The described feedback loop exists between each step, where the aim was to improve and cover up eventual errors from the preceding data collection. This was possible since the data collections were following each other in time and not conducted as parallel processes.

3.3 METHODS FOR DATA COLLECTION

There is a range of alternative research methods for conducting this kind of study. As recommended by Collis and Hussey (2009) paraphrasing Eisenhardt (1989) this study used several different methods, including: investigations in previous research, interviews, a questionnaire and a workshop. The methods are explained and motivated in following sections.

Interviews

Interviews are good for obtaining information from selected participants as it allows for the respondents to express what they think, do or feel (Collis & Hussey, 2009). Interviews are preferred as they obtain the employee’s view, which is one of the research goals. The interviews are directly focused on the topic, but might have given biased answers from poorly expressed questions or a specific employee’s point of view. It is important to be careful with reflexivity, meaning that the interviewee only answers what the interviewer want to hear. (Yin, 2009)

The initial interviews were semi-structured, as they were exploratory, and based on the problem defined by the organisation and findings from the literature study. If possible, the interviews were held face-to-face, but due to geographical dispersion some were conducted via phone calls. During the interviews, probes were used to let the interviewees elaborate further (Collis & Hussey, 2009). The questions were carefully formulated in collaboration with two senior researchers, ensuring a high quality that minimizes misunderstanding or reflexivity throughout the interview guide. The used interview guide can be seen in Appendix A.

The sampling of respondents to the initial interviews was decided together with the commissioning company supervisor. The samples were chosen to give different perspectives of innovator support. Nine semi-structured interviews, in accordance with the structure in Figure 3.5 were conducted in this phase of initial investigation.
Questionnaire

The questionnaire was used for collecting quantitative data adding another perspective on the same topic, which additionally verify the factors affecting utilisation of innovation capabilities discussed in the interviews. The aim was to gather information on the perception of different factors, as widely as possible, why a questionnaire was chosen as research method.

The questionnaire was constituted of a list carefully selected and formulated questions to obtain trustworthy answers from a specified group of people. The questionnaire was used to elicit respondent feelings, actions or thoughts. The process used for designing the questionnaire is shown in Figure 3.6. (Collis & Hussey, 2009)

1. Design the questions and instructions
2. Determine order of presentation
3. Write accompanying letter/request letter
4. Test questionnaire with a small sample
5. Choose method for distribution and return
6. Plan strategy for dealing with non-responses
7. Conduct tests for validity and reliability

The questions in the questionnaire were synthesized through literature in the Theoretical Framework and the initial interviews with employees in the studied company. The idea was to gather influencing factors from previous studies through the literature study and possible company specific factors from the initial interviews to survey further. To aid in the construction of the questionnaire a framework for the analysis was created. The framework consisted of different sample groups for analysis, including the samples, innovator and executor profiles, organisational levels (employees, line-managers and senior managers) as well as different demographic comparisons. These sample groups were then evaluated for their perspective on comparisons in the different questions to aid in construction of the questionnaire. If the question is regarding the perception of conditions for innovation, the evaluation was done on what a comparison within a specific sample group would give. Following, was the construction of the first draft containing all questions of interest, to ensure all areas were covered. The questionnaire was then discussed and revised with two senior researchers, the company supervisor, and tested on a group of students in various fields of study, to ensure relevance and quality. The questionnaire was then streamlined to be as compliant as possible, through elimination of overlaps and setting up a strategic disposition, to facilitate a higher response rate.
The questionnaire was used for gathering information regarding the respondents’ profile, the innovation conditions, what they perceive as motivating in regard of innovation and what factors that constitutes barriers or enablers influencing the intrapreneurial climate. The full questionnaire is found in Appendix B. The respondent profile was evaluated using a compressed version of Innovator’s DNA (Dyer, et al., 2011), where a number of questions related to innovator and executor behaviour and actions were ranked on a Likert scale. The resulting profiles were calculated using a formula based on the relation between the participants’ innovator and executor characteristics.

The scales used throughout the questionnaire were mainly five-level Likert scales. Collis and Hussey (2009) recommended that when using Likert scales, the lowest rate should be allocated to the lowest level of agreement (e.g. 1=strongly disagree and 5= strongly agree), since this will simplify the interpretation of your results. A positive effect of using Likert scales was that it minimises the space needed since the same scale were be used for several different statements, which also lessens the effort of answering the questionnaire.

Selecting the participants for the questionnaire included some important aspects to consider for generalizability of the results. The participants (sample) were chosen to represent an unbiased subset of the population, which is a group of people or items used for statistical purposes. The respondents within a population suitable for the research are defined in the sampling frame. It is important that the sample is picked randomly from the population, but if the population is small it can include the whole population. Another aspect to consider is minimum sample size to allow for generalizability and response rate, which in some cases can be as low as 10 percent. This is important since the sample size in relation to population will determine the accuracy and confidence level of conclusions. (Collis & Hussey, 2009)

The questionnaire was distributed to four different populations. The two first populations were derived from a previous study, investigating team performance related to an innovation index. This innovation index is based on a company-wide employee survey, indicating teams’ innovation climate. The first population included teams who had shown high results in the innovation index 2013, henceforth to be referred to as ‘Top innovation index’, was chosen to represent a setting with an innovation friendly environment. From the population ‘Top innovation index’ including 194 teams, a sample comprising 15 teams from different business units and 15 teams from regional units have been randomly selected to include 385 employees including managers. The second population contains teams who scored an average performance on the innovation index 2013 and will be referred to as ‘Average innovation index’. The population ‘Average innovation index’ includes 168 teams, containing 577 employees including managers, from which a sample with 15 teams from business units and 15 teams from regional units have been selected. These populations were selected in order to derive what characterises the more favourable innovation climate. A business unit refers to the different developing units and regional units to the regionally responsible offices including sales, logistics and similar functions.

The other two populations were derived from the company’s idea management system, which is used to collect and collaborate on ideas. The third population, called ‘Attractive contributor’, consist of people who have submitted two or more ideas, marked as ‘implemented’ or ‘claimed’ in the tool, during the past two years. The questionnaire sample includes the whole population of 209 ‘Attractive contributors’. The fourth population called ‘Average contributors’ consist of those who have submitted one idea during the past two years, which has not been marked ‘implemented’ or ‘claimed’. This sample includes 219 randomly selected employees from a
bigger population. The purpose of selecting the populations attractive and average contributors were mainly to compare the incentives desired by renowned innovators (‘Attractive contributors’) and those who show interest in innovation but have not gotten them implemented (‘Average contributors’). These populations were chosen to examine what characterise a great innovator.

The chosen samples were all provided with a unique link to the questionnaire to facilitate tracing of sample answers. The questionnaire was to be completed within eight days and a reminder was sent four days before the last day for completion to increase the response rate. A summary of the populations is shown in Table 3.1. There were 1390 invited participants in total. The samples were also given an index (Q#) for convenience.

<table>
<thead>
<tr>
<th>Index</th>
<th>Population</th>
<th>Population size</th>
<th>Sample size</th>
<th>Responses</th>
<th>Response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>Top innovation index</td>
<td>194 teams</td>
<td>385 (30 teams)</td>
<td>96</td>
<td>24.9 %</td>
</tr>
<tr>
<td>Q2</td>
<td>Average innovation index</td>
<td>168 teams</td>
<td>577 (30 teams)</td>
<td>114</td>
<td>19.8 %</td>
</tr>
<tr>
<td>Q3</td>
<td>Attractive contributor</td>
<td>1090</td>
<td>209</td>
<td>55</td>
<td>26.3 %</td>
</tr>
<tr>
<td>Q4</td>
<td>Average contributor</td>
<td>4600</td>
<td>219</td>
<td>48</td>
<td>22.5 %</td>
</tr>
</tbody>
</table>

**Workshop**

The final data collection method was a workshop, in which a group of people were gathered with the task to explore what actions are most desired by the organisation’s innovators in order to improve their conditions. The workshop task was based on the results from previous data collection and the perceived need of more thoroughly described actions. By conducting the workshop with employed innovators it was ensured that the proposed actions were properly aligned with the innovators interests and feasible for implementation. The innovators were provided with a clear purpose and selected for their competence, profound knowledge of the topic and diverse perspectives, thusly satisfying all but one condition for workshops (Eliasson & Villför Larsson, 2011). The condition that was left unsatisfied was mandate to act on the decisions from the workshop (Eliasson & Villför Larsson, 2011), which was not crucial for the purpose.

Responsibility for the workshop involves leading the group through the process towards a common goal in a way that engages all participants, creates a sense of ownership and spurs creativity (Sibbett, 2002). This includes encouraging all individuals in participation, to ensure mutual understanding and to give emphasis to the common responsibility of the result. It is the facilitator’s responsibility to make sure everyone is aware of and follows the workshop structure, as well as providing the needed material. In this study the participants’ got to document their findings themselves, which is a good way to support engagement and sense of ownership. (Eliasson & Villför Larsson, 2011)

A senior manager within the company supported the sampling for the workshop. Having a more profound insight into the different employees, meant that more suitable participants were selected. The group consisted of thirteen innovators, from different departments and functions, which constitute the group that is to be targeted by the proposed actions. Managers were not included, even though they would have given an extra perspective, as they might have hampered the results.

The purpose of the workshop was to identify needed actions and to formulate a viable action plan. With this in mind some different methods was reviewed, where the most suitable was
found to be ‘Strategic Visioning’, why it was used for inspiration. Strategic Visioning includes a seven-step process (Eliasson & Villför Larsson, 2011):

1. Prepare the journey
2. Explore the history and current situation
3. Establish a common view
4. Open up for a vision
5. Formulate strategies
6. Involve
7. Live in the vision

Since there was limited time for the workshop, the first four steps were presented in the introducing presentation to speed up the process. The presentation gave the structure of the workshop, followed by the problem statement and results from the two preceding data collections, thusly establishing a common view of the problem area. Further the purpose of the study was presented to give a direction for the desired workshop outcome. To formulate the solutions, the participants were divided into workgroups of four to five people, to engage several driving forces but still give room for everyone’s opinion (Eliasson & Villför Larsson, 2011). The workgroups brainstormed and engaged in group discussions to find ideas regarding how to improve innovator conditions. These ideas were also sorted by three different relations, namely organisation to manager, organisation to innovator/team, and manager to innovator/team. The workgroups then met with each other and presented four to six ideas per group, which were clustered with similar ideas presented by other groups. The participants then got to decide which actions to proceed with by grading the idea clusters, which was done to integrate more perspectives and find the solutions most important to implement. Then, new groups were formed to give more detail to each prioritised action and formulate action plans satisfying the whole organisational spectra. Finally, the new groups get to present their results of suggested actions, which are shown in 4.3 Workshop. The above described approach worked well and provided a valuable outcome, which was consistent with the previous data collections.

3.4 METHODS FOR DATA ANALYSIS

For a case study, Collis and Hussey (2009) suggest within-case analysis. For within-case analysis it is important to get familiarised with the data to build separate descriptions of phenomena, opinions and events to identify patterns. This research sought connections to previous research, but did mainly build on within-case observations of the whole company setting, since there is limited access to similar cases. Below is an explanation of the methods used for analysis.

Data Reduction and Restructuring

The aim of data reduction is to sort the data and discard irrelevant parts to gain a sharp focus as stated by Collis and Hussey (2009) paraphrasing (Miles & Huberman, 1994). Restructuring refers to sorting the data to gain a better overview of each topic or question (Collis & Hussey, 2009), which was utilised for both the interviews and questionnaire.

Pattern Matching

Pattern matching is one of the most appropriate techniques for a case study. It aims to identify coinciding patterns between for example empirical data and predictions drawn from literature or from different cases on the same topic (Yin, 2009). This was one of the foremost used methods where viewing the different data collections as separate cases. The data collections in the study were examined for support or rejection of proposed statements between each other.
**Explanation Building**

Explanation building is described by Yin (2009) as a more demanding form of pattern matching, with the goal to analyse the case through the gradual building of explanations that satisfies all the cases’ evidence. The procedure is thereby mainly applicable to explanatory cases trying to find casual links to ‘how’ or ‘why’ something transpire. The process of explanation building is described as an iterative process in five steps to be repeated as needed:

1. Formulating an initial theoretical statement or proposition.
2. Comparing the initial findings of a first case to the statement.
3. Altering (improving) the statement.
4. Further (more detailed) comparison of the altered statement.
5. Comparing the altered statement to additional cases.

The method was used for inspiration in the discussion of results where the initial statements were building on the first data collection and then tested by the following. The cases mentioned in the process above were thereby represented by the different data collections.

**Statistical Analysis**

A statistical analysis was conducted on the quantitative data from the questionnaire, where data was analysed for differences between participant groups. The difference was tested through Analysis of variance (Anova), and checked for statistical significance. Anova is a test to see if there is a difference between the means of two data sets, with the null hypothesis that there is no difference. The statistical significance can be shown on different levels, see Table 3.2, and is tested by a randomisation test. In this study, the lowest level of statistical significance was set to five percent, which is the most common value for business research. This sets the minimum value of risk for the difference to be a result of chance. If the probability is higher the variance in the data sets might be so high that the apparent difference could have been coincidental.

<table>
<thead>
<tr>
<th>Coefficient, P</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>p &gt; 0.1</td>
<td>Null hypothesis true</td>
</tr>
<tr>
<td>p ≤ 0.05</td>
<td>*</td>
</tr>
<tr>
<td>p &lt; 0.01</td>
<td>**</td>
</tr>
<tr>
<td>p &lt; 0.001</td>
<td>***</td>
</tr>
</tbody>
</table>

In addition, the correlation coefficient between different variables and statistics was calculated. The correlation coefficient indicates the relationship and association between different factors. The correlation coefficient is measured in the range +1, representing a perfectly linear correlation, to -1, representing a perfect negative correlation, where 0 represents a complete lack of linear association (Collis & Hussey, 2009) as shown in Table 3.3.

<table>
<thead>
<tr>
<th>Correlation Coefficient</th>
<th>Correlation Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.90 to 0.99</td>
<td>Very high positive correlation</td>
</tr>
<tr>
<td>0.70 to 0.89</td>
<td>High positive correlation</td>
</tr>
<tr>
<td>0.40 to 0.69</td>
<td>Medium positive correlation</td>
</tr>
<tr>
<td>0 to 0.39</td>
<td>Low positive correlation</td>
</tr>
<tr>
<td>0 to -0.39</td>
<td>Low negative correlation</td>
</tr>
<tr>
<td>-0.40 to -0.69</td>
<td>Medium negative correlation</td>
</tr>
<tr>
<td>-0.70 to -0.89</td>
<td>High negative correlation</td>
</tr>
<tr>
<td>-0.90 to -0.99</td>
<td>Very high negative correlation</td>
</tr>
</tbody>
</table>
3.5 DISCUSSION OF METHODOLOGY

The proposed methodology did function well except for some delays to the initial time-plan. The used process, including several steps of data collection, was perceived suitable for this type of research.

Validity and Reliability

In this study, several methods for data collections were used to constitute methodological triangulation for increased validation of findings. Through the use of several research methods the findings of each method was additionally validated through the other. Moreover, the different methods allowed both a deeper understanding from interviews and a broader perspective of the perception among respondents through the questionnaire. The validity was further increased by the use of two researchers in interviewing and analysis. This reduced the bias by having two perspectives in both interpreting and analysing the data.

A literature study examining documentation and archival records helped building a frame of reference from previous research. Since searching literature by keywords might result in missing some articles and findings in other literature, the reference lists of the articles read were also scanned for useful publications. This ensured that as much as possible of the researched area is covered. Additionally, some of the publications in the literature review on intrapreneurship consist of research conducted on small businesses, which may not be applicable. These sources have therefore been used with extra care, to not be affected by the difference of a small versus large corporation. All works cited are found in References, to ensure a high reliability.

The aim of the initial interviews was to discover the factors influencing the studied phenomenon, and to ensure that no company specific aspects were missed. The interview guide were also discussed and revised in collaboration with two senior researchers to make sure that all aspects were captured. This was reflected in that all respondents felt that the questions were appropriate and that everything of interest to the topic had been covered at the end of the interview.

Furthermore the interviews gave a more nuanced view compared to a survey, helping to capture all correlations of interest between factors. The interviews also gave some guidance in the overall perception through body language and intonation from the respondent. Pattern matching between the interviews and literature has increased the validity of the interviews, since the perceived effects of certain actions have been verified. The interview technique improved over time, as the topic and questions became more familiar. The follow-up on answers improved and as a result reached more depth in each question. A higher level of familiarity with the research setting initially might have improved the interview efficiency to allow even more depth.

The questionnaire result validated and ranked the factors in a wider audience compared to the interviews. The aim of this wide scan was to eliminate possible errors in the selection of respondents for the initial interviews that might cause bias. A main goal was to scan for differences in opinion and perception between sub-sets. To limit the risk of biased answers, trigger words with positive connotations was avoided throughout the questionnaire. Feedback on the questionnaire was acquired from a test group, to see that it was easily understood, and from the company supervisor, to ensure correct definitions and a language familiar to the participants. The questionnaire validity was also supported by the other data collections, by using methodological triangulation, where the questionnaire lack nuance, this was covered by the interviews and workshop. The initial interviews gave quite a uniform picture, which improves both validity and reliability since they interpret the questions in a similarly.
The questionnaire might show some redundancy and lack of nuance in some aspects. For example an overlap was found in the mirroring of some barriers and enablers, which then show similar results in average rating. Additionally the enabler “Increased manager authority to approve and allocate time and budget for innovators” from the questionnaire, does not indicate if it was rated the highest for increased manager authority or just that someone can allocate time and budget. It was therefore very beneficial to conduct several data collections, as there was additional data that can be used for more detail where there was a gap in other data collections.

Regarding the statistical analysis there were two cases where an analysis of variance (Anova) leads to an incorrect result, namely Type I error and Type II error. Type I error refers to when the null hypothesis is rejected although it was true, whereas Type II error means that the null hypothesis is accepted but it was false. To avoid these errors, the significance level for implying statistical significance is set at an adequate and recommended level. In business and management research, a significance level of five percent is acceptable, meaning that the result is statistically significant if the probability statistic, $p$, is less than 0.05 ($p \leq 0.05$). (Collis & Hussey, 2009)

The purpose with the concluding workshop was to find solutions drawing on the contextual experiences of the company’s employees with help from the results of preceding interviews and questionnaire. When executing the workshop, it was crucial to find the right participants to ensure a high validity. This was achieved, as all were eager to participate, engaged in the task and had a strong relation to the subject. The workshop’s concept is described in detail, under 3.3 Methods for Data Collection, for a high reliability.

The ability to generalise the research might suffer from the specific context under which the research was committed. The company setting gave time-specific organisational conditions, which most certainly will change, affecting the reliability over time. Moreover the generalizability was positively affected by the randomization, since the bias of the studied samples in the questionnaire was limited. The study is generalizable within the company, but due to the specific setting findings will have to be carefully applied in other settings. (Collis & Hussey, 2009)

**Delimitations**

The questionnaire was addressed to the company’s innovators identified by a previous innovation study and the idea management system, as these were already existing and accepted measures at the studied company. This was done to provide settings where it was possible to compare variances within these settings signifying good and worse innovation climates. The delimitation lies in the exception of innovators not discovered through these platforms or possible limitations of the tools. It is for example unclear if innovators selected through the idea management system have contributed with an incremental or radical idea.

The study relied on literature from two different fields, namely innovation management, relating to the organisation, and entrepreneurial characteristics, relating to the person. This generally hinders the depth of the study, which was kept on a more general level in the attempt to bridge two fields.
4. **RESULTS**

This chapter concludes the results from the empirical research. It includes summaries of the nine initial interviews, which help define the context for the rest of the study. This is followed by the data from the questionnaire for the overall view constituted by answers from 313 employees. For further insights, a workshop was conducted with people of special perspectives and insight, to provide solutions anchored with what is viable within the organisation. The aim of all data collections is to form a context and find solutions regarding how to increase the utilisation of the company’s innovative capabilities and the climate for innovators.

4.1 **INITIAL INTERVIEWS**

This chapter presents the results from the initial interviews with different respondents from within the company. The organisational level and division of each respondent is presented in Table 4.1.

*Table 4.1. The organisational level and division of the initial interviews respondents.*

<table>
<thead>
<tr>
<th>Object</th>
<th>Position</th>
<th>Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Employee</td>
<td>Product</td>
</tr>
<tr>
<td>2</td>
<td>Manager</td>
<td>Product</td>
</tr>
<tr>
<td>3</td>
<td>Senior Manager</td>
<td>Product</td>
</tr>
<tr>
<td>4</td>
<td>Employee</td>
<td>Product</td>
</tr>
<tr>
<td>5</td>
<td>Employee</td>
<td>Product</td>
</tr>
<tr>
<td>6</td>
<td>Employee</td>
<td>Service</td>
</tr>
<tr>
<td>7</td>
<td>Manager</td>
<td>Service</td>
</tr>
<tr>
<td>8</td>
<td>Senior Manager</td>
<td>Service</td>
</tr>
<tr>
<td>9</td>
<td>Employee</td>
<td>Sales</td>
</tr>
</tbody>
</table>

This section is structured with headings indicating different segments of the interview. At the beginning of each section, a short summary of what was discussed in the interviews is presented, which is followed by a more detailed description for more nuance and precision.

**Utilisation of Innovation Capabilities**

This section describes the respondents' view on the utilisation of innovation capabilities, which all respondents considered to be low and by some additionally described to have decreased over the years. Object 6 explained this decrease as a cause of the increased market competition and weak economic climate, which results in low profit margins and thereby less resources to invest in innovation. Object 3 described that the low utilisation is mainly an effect of trying to streamline the organisation so that the ways of working become a competitive advantage. Unfortunately, it leaves little margins for innovation activities.

Object 9 explained that some of the company’s innovators cannot be utilised since their managers are not compensated for their employees doing something else than what they are employed to do “it is good for the company but not for his reports”.

Object 1 exemplified that, the collaboration between product development units and research units is generally poor and in departments where the collaboration is better, they have troubles putting research results into practise. The respondents unit worked together with the research unit in one part of a project, which was very valuable, but when that specific part was finished the collaboration ended since they had to continue with their five-year-plans and the respondents...
unit needed to finish working on their product. There is a misalignment between research units and other departments, since there is no one who proceeds with the results from their work and transform it into something that can be sold. Research needs to collaborate closer with business units. Additionally, innovation is also nothing that we work with actively, but it is up to each individual to push for new innovations and ideas.

Object 5 explained that the innovative capability has been better but it is decreasing. The respondent’s general experience is that the company’s culture supports innovation. However, how this culture supported innovation before differs from how it is done today. Earlier the innovation culture was based on personal contacts and networking, compared with today’s flattened structure where anyone can access and submit ideas to an ideation tool.

According to Object 5, the level of utilisation of innovative capabilities depends on the department. In the respondent’s product design unit, innovation is starting to get official recognition and the ideas and innovative power of people are put to use. Other departments have not come this far and this is mainly depending on the management. The innovation standpoint can easily be detected by examining who is appointed the innovation driver role and whether this is a formal role or not. What also benefits the respondent’s department from an innovative perspective is that they have got a more or less standalone product. This entails limited dependence for the department and high control over the whole product lifecycle. Departments with a setting of high dependence on other units or only internal customers have fewer possibilities to innovate.

Object 9 described that the company need to better take care of their innovators. We should create an environment where innovators can identify themselves. If you are a person having a need for achievement, NAch, you are quite alone in this organisation. The company does not appreciate high achievers since they have a tendency to ‘rock the boat’.

**Characteristics**

The aim of this section is to summarise the respondents’ collected view regarding innovator characteristics. The most outstanding innovator characteristics are a burning passion for their interest and a desire to improve things. Moreover, innovators can sometimes be hard to handle as they have a strong drive and may take on roles of leadership or become informal leaders. Additionally, several respondents express that it is easy for managers to identify innovators and they might be identified both through their contribution and by their persistence. Innovators aiming at radical innovations are easier to identify whereas innovators with an incremental focus are harder to recognise.

Object 1 claimed that there are two different groups of innovators. The first group consist of people that come up with new ideas and strive for improving current solutions. The second group is comprised by business people, who are creative in coming up with new business opportunities and collaborations with other companies. The best innovator got both perspectives, knowing how to solve a problem and how to turn a profit. This is confirmed by Object 7 who means that as an innovator you must be able to, “put yourself in the customer or investor shoes and question, is this the right thing to do?” Object 7 also stressed the importance of creating a diverse team sharing knowledge and challenging each other. As a manager, it is important to inspire, and be able to identify the right talent and put together a team that complement each other’s and your own strengths, “The innovation capability is a function of all the strengths that many people bring together as a team. So you need to find people that complement each other but also have the right attitude.” The importance of diversity in innovation is also highlighted by Object 1 and
Object 9, who characterises a good innovator as having a wide network involving different functions in order to maximise the probability of realising innovations. Moreover, Object 6 explained that an innovator is a person who might be good at linking things together into new combinations, why an innovator might benefit from having experience from different areas. Moreover, Object 5 stated that innovators have three characteristics; they foresee needs, find personal interest in what they do and are not amused by routine work.

Object 9 said that an intrapreneur is a person saying, “OK, I have an idea. I’m not sure that I’m right, but the upside if I am correct is so significant that I’m 100 percent prepared to take the shot”. Further, an innovator has a “willingness to be wrong and a determination to execute”. When an innovator has an idea, the innovator is more interested in executing and proceeding with the idea rather than filling in the proper documentation required when for example filing a patent. Object 4 said that innovators are enthusiasts, who want to learn and become better at their job similarly to any hobby.

**Motivation**

This section includes the observations from the discussions regarding encouragement, stimulation and incentives. All respondents were familiar with and aware of the monetary incentive system, but almost uniformly mean that financial rewards do not stimulate innovation. Object 4 and Object 5 stated that the engineer is not interested in extrinsic motivation; it does not motivate creative work related to the right side of the brain.

Object 2 described that there are innovation competitions where the best ideas and innovator of the year are rewarded. This give some recognition to the innovator, but the ideas are seldom implemented which is really the ultimate reward. Object 3, also stated that the best innovation reward would be to work on your idea for a year. The respondent stated that the company needs to allocate time for realisation and that it has been a great experience for the realised projects. This is also agreed upon by Object 8 who stated that to get to take part of innovation work is motivating and returned in form of employee engagement.

Object 1 and Object 7 explained that motivation in innovation is about who you are and what you feel passionate about. The motivation comes from inside the individual. Object 4 further claimed that it is intrinsic interests that drive the engineer to innovate and create great things. Innovators want recognition, a purpose, and role models to look up to. The incentives are compared to the incentives of pursuing a hobby. Every achievement is satisfaction enough in itself and will motivate the innovator to continue. Object 5 claimed that a suitable motivation for innovation would be bigger authority or bigger degree of freedom, such as having authority over daily routines or how to realise specific features, alternatively, to take part in activities changing the society.

Object 6 liked the feeling of a sustaining contribution like a patent and felt appreciated from the financial incentives. The most motivating though, is recognition from colleagues and other groups in the company. Object 8 similarly stated that the main motivation for employees is that the importance of innovation is clearly communicated, and there is a strong focus on recognition.

Object 6 explained, regarding manager motivation, that his manager is very interested in innovation and gets satisfaction from helping the team. The achievements of the team are reflected upon the manager who also gets recognition from the innovation contributions of the team. Object 7 stated that for a manager, “… the team are all the rock stars and what is then their success is my success.” The manager needs to understand the raised ideas and help connect
different people who can make a difference. Object 7 is a manager but referred to himself as an innovator rather than an executor. Object 8 meant that for the managers, the main motivation for innovation is that they are held accountable for meeting their innovation performance targets.

**Barriers**

The barriers discussed during the interviews are summarised in this section. One of the most commonly brought up barriers was the lack of funding. There is also a high delivery pressure forcing a high utilisation rate in customer projects, leaving little or no margin for testing new concepts or driving a side-project. Furthermore there is a high avoidance of risk, meaning that very few projects are tested, why no procedure for handling failures are in place.

Moreover, the respondents describe that the idea management system seem to have loosed traction and have become overloaded. The clutter of ideas that are of no relevance makes the good ideas disappear in the masses. Since it is hard to recognise and evaluate the great ideas the idea management system have lost some of its point.

Object 9 explained that within the company, the same question is repeated for every initiative, “How are we going to make money out of it?” By that question, the organisation has misinterpreted the foundation of innovation, meaning nobody is interested in successful long-term projects; everybody is focused on the numbers. The main focus is kept within three key areas; net sales, orders booked and product contribution. If you are innovative and succeed to get funding for an idea, you will experience a bottleneck when implementing the innovation. The organisation will try to adjust your project to fit the traditional system, because that is what they are accustomed to. The respondent refers to this as “death by a thousand cuts” in the organisation. “I can’t kill you by scratching you, but if I scratch you a thousand times, you’ll bleed to death.” This is what happens to an innovation project in a large organisation when your defined goal is reshaped to comply with the organisational expectations.

Object 3 claimed that big corporations cannot compete with new businesses in the same way small entrepreneurial businesses do, since they are driven by other key performance indexes. Since the company is looking at the return of investment in a shorter time frame it is hard to facilitate some projects. Having over one hundred thousand employees creates different requirements compared to a company with twenty employees. Object 7 described that innovation really happens in small clusters but the company’s body is so large that it is hard to do any real innovations. Another source of competition is mentioned by Object 1 who claimed that one barrier to realising innovations is that it is hard to get acknowledgement and interest from someone with a lot of money. This is because these innovations are always competing against existing, already paid for, products.

Object 4 described a lack of role models and champions within the company. Moreover, some managers do not have proper technical understanding and innovation skills to decide on these initiatives, and are rather appointed for their leadership skills, which results in that these managers do not promote innovations. Object 2 described another aspect of competence lack, namely that some employees do not know how to file a patent, which is a necessity for some innovations. Object 5 explained that innovation is undervalued in some departments, which contributes to “… innovation remaining on a buzzword level, which is contra productive … having it on a buzzword level makes the people disbelief in the whole concept”.

There are several respondents who mention deficiencies regarding different aspects of funding innovation. Object 7 said that the innovation capability is limited by a strong operationalization. Object 5 explained the situation that as an employee, you must develop the idea in your own
time, since there is no time available for innovating. As a manager, you may never ask, “… in what time we made the prototype, for example, it is not a good question, you must never ask this”. Object 3 explained that the manager of a team where an idea is created will have to give up resources, which can be hard since it does not fit the original plan. Further, since the employees will always request more time and money for innovation, it is hard to say exactly how much time and money that should be allocated. The difficulties regarding how much resources to allocate does, according to Object 2, result in underestimation and lacking persistence in funding of innovation and there is no perseverance to take the initiatives all the way to realisation. Object 6 described that spending time on innovation results in a low utilisation level, since there are no way to report time spent on innovation, it is reported as a cost, “… of 40 hours of work, if I charge 20 hours with innovation, so my utilisation goes down to 50 percent, that will create a red mark to me and to my manager also.” This reflects poorly on the manager and the team in the individual performance measures. Moreover, Object 7 explained, “It is sad for me as a manager to see that on a Monday morning, this person, as an expert, he comes and tells me: you know what, I have spent time on this great thing and its valuable, but you know what, I don’t have a network number for some of these aspects, because those were not something that was agreed with the project managers and I don’t have a network number to book them.”

Object 1 explained that product specifications include out-dated, sometimes obsolete, features, which results in expensive products. When a lesson learned is concluded and submitted, there is no one who can take it further and improve the processes. Moreover, Object 3 further emphasised the lack of feedback on failed project, which can be very demotivating. The real problem is regarding the administration of assessing all the submitted ideas, which has become better. Object 7 stated that the sharing of information would also connect different similar projects in different countries. Today units might work on the same thing without knowing of it, due to the siloed organisation. In order to support this information sharing the object stated that, “I do my best to connect people, in different parts of the world or other teams or to the right talent to facilitate them.” Object 8 also claimed that the organisation are siloed, leading to difficulties when funding innovation bridging several units.

Object 5 explained the importance of having failures, “If you do not have failures, it means that you did not try enough” and “you must start with 1000 ideas and at the end you can select one idea and then you will have 999 failures … in this case, failure is a good thing”. Moreover, the company should handle the failures better, “… some kinds of coaching, some kind of support, explanation why a certain idea failed or at least follow-up the situation of the idea”. Furthermore, Object 7 stated that the company culture needs to be less risk-averse. “We have to have a culture where it’s ok to learn from mistakes. We have to encourage people to take the risk.” Object 9 described that it is hard to establish a procedure for learning from failure in Sweden. This is a result of the Swedish ‘consensus management’; nobody owns an idea or a product, it is collectively owned, hence it is hard to sort out the root cause of failure. Object 6 additionally states that a root cause analysis of failed projects could be very fruitful, for example showing that the funding was insufficient, meaning that additional funds could be allocated for next year.

**Enablers**

The observations from the discussion regarding what enables a higher utilisation of innovation capabilities are presented in this section. A common view is that a setup handling requests of and allocation of funds is needed. Object 8 claimed that the easiest way to get around the lack of resources, funding and the problem of silos would be to have an organisational practise one level
up. This unit would be responsible for driving innovations across the organisation with its own separate budget. Additionally, Object 2 and Object 7 expressed that there must be a functioning setup for innovation, containing a budget and resources to facilitate innovation projects.

The process of realising innovation is described by Object 3 who explained that in their department there is a management meeting every other week where improvement investments are discussed. If an employee or a group of employees come up with an idea they are asked to package the idea, create a business case, so that the management can make a decision regarding it in the next meeting. If the idea moves on to testing, the group receive ownership and can start working on the project.

Although it is possible for the extremely committed employees to spend their free time prototyping, Object 5 expressed that, “if we can have this sort of garage work in a more formal and a more accepted way that would be good.” Object 3 explained a related pilot that was just initiated in the department. The aim with the pilot is to surface interesting ideas that a development team can sign up on to test. The team works on the idea for ten days to see if it is feasible and what would be needed for realisation. Then there is a gate to see if the idea should be realised, saved for later or thrown away. There is seldom a loss of ideas but the ideas must be put in a business context, which needs to be done more systematic. The idea is for teams to be able to announce that they want to try out a new concept for one week and see if it is feasible.

Resource availability is described as an important enabler in the literature. Object 8 seem to have applied this and described that they have freed up 5 percent of the employees time for them to be able to work on value creating activities. Normally employee utilization is at 90 percent, leaving 10 percent to education and similar activities. The utilisation was then lowered to 85 percent (on average) to make room for value-creating activities like innovation, giving the employees some time to really develop their ideas and prepare a business case to seek additional funding internally. Also relating to resource management, Object 6 suggested introducing a third alternative for reporting work hours, in addition to today’s alternatives of reporting time as spent on a customer project or as a cost. The third alternative would be to allocate time to ‘value creating activities’, such as innovation projects that are yet to receive funding.

Collaboration between business units is another brought up enabler that would constitute a tool nurturing innovation, since many ideas come from the combination of knowledge in known areas. Object 1 expressed that there needs to be a natural way of collaboration between research, design and product unit. The respondent stresses that collaboration between different functions is important, but when cross-functional groups are assembled, it usually do not work out very well. It needs to be a more natural part of the work process with channels where interaction emerges, because that is where innovations are created. Object 7 additionally stated that collaboration needs to be made easy. We need something less complex that connect ideas and utilise the many different skills in the company. Object 5 relatedly stated that “information sharing is also very important, it’s a value” and that if you have information, you can do more, you can work easier and your situation is generally better.

Active manager support is another strong enabler, where the immediate manager supports the applying for funds and uses his or her more extensive network to help reach people needed for realisation. Object 1 explained that the managers must encourage innovations and that it is crucial to not kill off innovations at an early stage. Since the company is a hierarchical organisation the motivation and support for innovation must come from the very top, where your manager must have the support of his or her supervisors. Object 9 relatedly expressed that it would enhance the innovation performance if the board of directors and higher management
would give more attention to innovation, for example by attending innovation events, “when managers does not show, it gives the impression of innovation, schminnovation”. Object 3 further stated that it is very hard to decide about a certain amount of money or time that can be spent on innovation and what is really needed is a culture that allows innovation and that managers’ can make their own decisions of what is feasible. The company should build integrity and heart in leaders, to empower them, so that they dare to believe in these innovations and dare to make such decisions. Innovation needs to take the form of a bottom-up process rather than rules, processes and structures. Object 6 gives a good practical example of strong manager and team support where they often discuss discovered opportunities or ideas and collaborate to come up with a good concrete proposal, which the manager then promotes in different forums seeking funding for realisation. The respondent expressed that the manager tries his best to realise the team’s ideas. A manager, Object 7, also explained that when an idea is raised in the team, they do not wait for external support, but try to realise it within the team. If the first pilot works, they can move on to try and secure funding for it, but since resources are scarce they are careful to make sure that it adds value. The respondent further stated that people need to have the authority to drive ideas as far as they can and trust that their manager will support them, and the manager needs to trust the team members. This trust is additionally mentioned by Object 5 who see it as a very important as innovation involves a certain degree of freedom and helping others.

Object 7 claimed that an open culture is essential to facilitate innovation. People need to be able to share knowledge and feel rewarded and recognised for their ideas. Object 9 explained that in order to enhance the company’s innovative capabilities it is not a concern of how to identify those within the organisation who carry the innovative gene, but to create an environment that attract and retain innovators. The organisation has tried some initiatives to take in such competences, but which have resulted in that the company has formed the new employees to comply with the organisation instead of taking advantage of their new perspectives. The company has to create a culture where NAcH, those motivated by achievement, receives some sort of feedback loop. The organisation must be able to publicly highlight and celebrate those unconventional thinkers who swim against the tide, and people who have successfully run innovation projects.

Another mentioned enabler was external collaboration and the use of venture companies for experimentation. Object 9 for example stressed the importance of working with external actors in order to assure an intellectual input. The company’s internal R&D is great at incremental innovations, but not as good at disruptive innovations, because they have no gain in that. It would be an effective collaboration to have business oriented employees connected to smaller companies with a hunger but without connection to the industry. Previous attempts to integrate smaller companies have though resulted in complications, since it is hard to incorporate them into the existing corporate model. It is therefore important to keep them operating as small companies. Both Object 9 and Object 7 expressed that the company would benefit from the fostering small satellite companies for innovations, which have been tried before, but been unsuccessful because of the company’s tendency to run everything internally. Object 7 emphasized that it is essential in some cases to be able to operate like a small company to meet the customer needs.

Regarding existing processes related to innovation, Object 6 suggested a better filtering of ideas for the ideation tool, which is too cluttered today. There needs to be a board, consisting of experts in technology and business, who evaluate these final ideas to see which ideas are the best and goes in line with the company’s growth strategy. In addition, Object 2 stated that there is a
need for a basic knowledge of what can be patented and how to do it, which could increase the amounts of filed patents. Object 3 brought up the involvement of customers in development and bringing the customer into the front-end work of innovation, as a success factor. The respondent stated that to work in an agile approach together with the customer allows continual looping and testing of ideas to make sure that the customer gets what they want.

4.2 QUESTIONNAIRE

The initial interviews were followed by a questionnaire, which was conducted to obtain a broader perspective and to validate the interview findings. The overall response rate of the questionnaire was 22.5% percent and Table 4.2 shows the response rate distribution between the different groups. The characteristics for the respondents who completed the questionnaire can be found in Appendix C.

<table>
<thead>
<tr>
<th>Group</th>
<th>Response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 Top innovation index</td>
<td>96/385 = 24.9 %</td>
</tr>
<tr>
<td>Q2 Average innovation index</td>
<td>114/577 = 19.8 %</td>
</tr>
<tr>
<td>Q3 Attractive contributor</td>
<td>55/209 = 26.3 %</td>
</tr>
<tr>
<td>Q4 Average contributor</td>
<td>48/219 = 21.9 %</td>
</tr>
<tr>
<td>Total</td>
<td>313/1390 = 22.5%</td>
</tr>
</tbody>
</table>

Because of Quinn’s (1985) statement that innovative companies work in small project teams, the samples’ average team size is also compared to examine if it is an influencing factor. The comparison of team sizes show that Q2 (‘Average innovation index’) had on average 50% more team members with 19.23 members, than Q1 (‘Top innovation index’) with 12.83 members. This shows that the high scoring teams are smaller on average.

To examine the statistical significance between the responses from different groups, an Analysis of Variance (Anova), described in 3.4 Methods for Data Analysis, have been used. This ensures that the results are not coincidental and provides an objective verification of the differences. To additionally explore the associations between motivational factors, barriers and enablers, their correlations have been calculated. The findings from the correlations are presented at the end of each section. For an index and complete table from which values are retrieved see Appendix D.

Innovators and Executors

The questionnaire included both a question where the respondents got to subjectively rate their innovator and executor skills from a short description, and an optional self-assessment evaluating the same skill-set. The subjective rating was done using a Likert scale ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (5). The optional self-assessment was based on the book Innovator’s DNA (Dyer, et al., 2011) and determined whether the respondents were an innovator or an executor. The respondents were assigned a profile corresponding to their subjective evaluation of their innovator and executor skills as well as a profile from the self-assessment. The five different profiles are retrieved from The Innovator’s DNA (2013), and range from focused innovator to focused executor, see Figure 4.1.
A comparison between the subjectively estimated profile and the profile that the optional test indicated where compiled from the responses of the 166 persons who chose to take the optional self-assessment, see Figure 4.2.

Drawing on the answers of the respondents’ subjective perception of their innovator and executor skills an average profile of the different samples was created, see Figure 4.3. When comparing the averages, the only sample that produces a statistical significant difference between innovator and executor skills is Q3 ($p=0.00163^{**}$).

When comparing the subjectively graded innovator skill between samples, it was found that the ratio of participants in Q3 that strongly agreed to be innovators, was considerably higher than the other samples, see Figure 4.4.
Correlations
The calculation of correlations for innovator or executor skills and the other responses show the two strongest correlations between innovator skill and two enablers. The correlations are found between innovator skill and the enablers “Cross-functional networking, internally and externally” at 0.254, and “Increased manager authority to approve and allocate time and budget for innovators” at 0.235.

Current Climate and Conditions
The questions regarding climate and conditions were used to survey the current situation at different levels, namely organisational, unit and individual level. The general perception regarding the organisational innovation climate where measured by three questions. The answers on these questions, which showed statistical significance between the samples, are presented in Figure 4.5.

The answers to these three questions regarding organisational innovation climate were sorted by organisational level as displayed in Figure 4.6. In this case it is only the statement “Given the current conditions for innovators in my unit/organisation, I feel:” that shows a statistically significant difference ($p=0.009\ast\ast$). It is important to notice the big differences in sample size though. The different samples include 279 employees, 27 line-managers and 7 senior managers.
Unit conditions

The more general questions were followed by a set of more specific questions regarding the environment in the participants’ units. There were distinct differences between Q1 and Q2 with the biggest difference found in “We are good at implementing/commercializing ideas” and “We are good at generating new ideas”. When comparing Q3 and Q4, Q4 seemed to have the better conditions in general, with the biggest differences in “We have a strong focus on understanding customer’s needs” and “We are good at understanding customer needs”. The figure display the average response on each question divided by sample, sorted on highest average result. An Anova confirmed a strong difference between the answers from different samples in all questions.

As shown in Figure 4.8, the senior managers rated the conditions as better than managers and employees. Though, in this case the managers, instead of the employees, were most critical. There are clearly visual differences between organisational levels, but Anova calculations show
no statistical significance. The bars are sorted on the difference between senior managers and employees in a descending order.

![Figure 4.8. Average response regarding unit conditions related to innovation divided by organisational level. [1 (Strongly Disagree) – 5 (Strongly Agree)]](image)

Furthermore, as a control, the perception on the organisational conditions was compared between different characteristics: gender, organisational tenure and innovator or executor skills, but there were only small differences. It was mainly the different samples and organisational level that showed a difference in the average perception of conditions.

**Individual level conditions**

The individual level conditions divided by sample, shown in Figure 4.9. These responses also proved a statistically significant difference between samples.

![Figure 4.9. Average response regarding individual conditions related to innovation sorted by samples Q1-Q4. [1 (Strongly Disagree) – 5 (Strongly Agree)]](image)
Motivation

The respondents got to select and prioritise five motivational factors out of a set of ten factors proposed to motivate innovation, to indicate what they are most motivated by personally. The motivators have been divided into intrinsic and extrinsic by guidance from the Theoretical Framework, as shown in Table 4.3.

<table>
<thead>
<tr>
<th>Motivational factors divided into intrinsic and extrinsic affection.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intrinsic</strong></td>
</tr>
<tr>
<td>MI1: Self-satisfaction of seeing my own ideas become reality</td>
</tr>
<tr>
<td>MI2: Getting the opportunity (time and resources) to explore and develop my own insights and ideas</td>
</tr>
<tr>
<td>MI3: Contributing to the larger purpose of COMPANY (e.g. COMPANY VISION)</td>
</tr>
<tr>
<td>MI4: Flexibility/autonomy to choose what, when and how to do my work</td>
</tr>
<tr>
<td>MI5: Getting sufficiently challenging assignments</td>
</tr>
<tr>
<td>MI6: Opportunities to acquire new skills and experiences</td>
</tr>
</tbody>
</table>

The five top motivational factors for each profile are presented in Table 4.4. The profiles are based upon the respondents’ subjective rating of innovator and executor skills.

<table>
<thead>
<tr>
<th>Innovator top 5</th>
<th>Developer top 5</th>
<th>Executor top 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MI1: Self-satisfaction of seeing my own ideas become reality</td>
<td>1 ME1: Increased salary or other monetary rewards</td>
<td>1 MI6: Opportunities to acquire new skills and experiences</td>
</tr>
<tr>
<td>2 MI6: Opportunities to acquire new skills and experiences</td>
<td>2 MI2: Getting the opportunity (time and resources) to explore and develop my own insights and ideas</td>
<td>2 ME1: Increased salary or other monetary rewards</td>
</tr>
<tr>
<td>3 MI2: Getting the opportunity (time and resources) to explore and develop my own insights and ideas</td>
<td>3 MI1: Self-satisfaction of seeing my own ideas become reality</td>
<td>3 MI5: Getting sufficiently challenging assignments</td>
</tr>
<tr>
<td>4 ME1: Increased salary or other monetary rewards</td>
<td>4 MI1: Self-satisfaction of seeing my own ideas become reality</td>
<td>4 MI4: Flexibility/autonomy to choose what, when and how to do my work</td>
</tr>
<tr>
<td>5 MI5: Getting sufficiently challenging assignments</td>
<td>5 ME2: Promotion/advancement in the organisation</td>
<td>5 MI1: Self-satisfaction of seeing my own ideas become reality</td>
</tr>
</tbody>
</table>

A more detailed view of the rankings, sorted by innovators, developers and executors, are shown in Figure 4.10, which also indicate intrinsic or extrinsic affection. The difference between profiles is visible but only statistically significant for five factors, namely MI1, MI2, MI3, ME1 and ME2, according to an Anova calculation.
As previously mentioned, only five of the motivational factors proved a statistically significant difference in preference between the profiles. Two of these, MI1 “Self-satisfaction of seeing my own ideas become reality” and MI2 “Getting the opportunity (time and resources) to explore and develop my own insights and ideas” were most preferred by innovators. The third significant factor was MI3 “Contributing to the larger purpose of COMPANY (e.g. COMPANY VISION)”, which innovators rated second highest after developers. The fourth factor showing a significant difference was ME1 “Increased salary or other monetary rewards”, where innovators were the least interested. The last significant factor ME2 “Promotion/advancement in the organisation” was again rated lower by innovators in comparison with developers and executors.

Motivational factor ranking divided upon samples Q1-Q4 is shown in Figure 4.11.

**Motivation Correlated With Motivation**

The strongest correlation including motivational factors was a negative correlation between MI2 “Getting the opportunity (time and resources) to explore and develop my own insights and ideas” and ME1 “Increased salary or other monetary rewards” at -0.300. The second strongest correlation is also a negative correlation between MI2 “Getting the opportunity (time and resources) to explore and develop my own insights and ideas” and ME2 “Promotion/advancement in the organisation” at -0.280. The third strongest is positive and between ME2 “Promotion/advancement in the organisation” and ME1 “Increased salary or other monetary rewards” at 0.259.
Barriers

The barriers where posed as statements, which the respondents rated on a five-grade Likert scale from ‘Strongly disagree’ to ‘Strongly agree’. This was done to see what barriers most respondents perceived as hinders to innovation and if they differed between groups Q1-Q4.

An average of the answers from all samples was collected to show the barriers that were perceived to be the strongest throughout the whole organisation, see Figure 4.12.

A comparison between the barriers perceived in an environment recognised as favourable for innovation (Q1) and an average innovative environment (Q2) is shown in Figure 4.13 below. The barriers are sorted by the biggest difference to illustrate what separates the two environments. The seven barriers that show a statistically significant difference between the samples Q1 and Q2 are “Lack of flexibility, too rigid organisation, processes” \((p=0.001^{**})\), “Lack of boldness, too risk-averse organisation” \((p=0.001^{**})\), “Lack of time and budget for innovation” \((p=0.011^*)\), “Lack of path for implementing more radical ideas” \((p=0.009^{**})\), “Lack of cross-unit collaboration, organisation working in silos” \((p=0.015^{**})\), “Lack of customer and market insights” \((p=0.047^*)\) and “Lack of innovation goals, objectives and expectations” \((p=0.048^*)\).

The barriers perceived by an attractive contributor (Q3) and an average contributor (Q4), sorted by difference, is shown in Figure 4.14. According to an Anova it is only the factors “Lack of path for implementing more radical ideas” \((p=0.005^{**})\), “Lack of awareness and innovation skills among employees” \((p=0.026^*)\), and “Lack of customer and market insights” \((p=0.04^*)\) that show statistically significant differences though.
Figure 4.14. Perceived barriers in Q3 compared with Q4, sorted on biggest difference. [1 (Strongly Disagree) – 5 (Strongly Agree)]

A comparison between perceived barriers divided by innovators, executors and developers are shown in Figure 4.15.

Figure 4.15. Perceived barriers divided by Innovators, Executors and Developers. [1 (Strongly Disagree) – 5 (Strongly Agree)]

**Barriers Correlated with Motivational Factors**
The correlations between barriers and motivational factors are small and distributed both negatively and positively, as shown in Table 4.5. There are two values, showing a low positive correlation that stand out. These two values both stem from the barrier B5 “Lack of appropriate indicators and incentives”. The correlating motivational factors are ME1 “Increased salary or other monetary rewards” at 0.23 and ME2 “Promotion/advancement in the organisation” at 0.22. The third most outstanding correlation, which is also the most outstanding negative value stem from the same barrier and correlates to the motivational factor MI1 “Self-satisfaction of seeing my own ideas become reality” at -0.19.
Barriers Correlated with Barriers

The three strongest correlations between barriers, are at medium (coefficient of 0.40-0.69) level, and exist between B6 “Lack of boldness, too risk-averse organisation” and B4 “Lack of flexibility, too rigid organisation, processes” at 0.537, B7 “Lack of roles and responsibilities for innovation” and B5 “Lack of appropriate indicators and incentives” at 0.505, and B11 “Lack of innovation goals, objectives and expectations” and B8 “Lack of inspiring innovators as role models” at 0.500 as shown in Table 4.6.

<table>
<thead>
<tr>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>B5</th>
<th>B6</th>
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<th>B8</th>
<th>B9</th>
<th>B10</th>
<th>B11</th>
<th>B12</th>
<th>B13</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td>0.410</td>
<td>0.372</td>
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<td>0.336</td>
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<td>0.275</td>
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<td>0.362</td>
<td>0.319</td>
<td>0.317</td>
<td>0.358</td>
<td>0.346</td>
<td>0.346</td>
<td>0.302</td>
<td>0.275</td>
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<td>0.324</td>
<td>0.286</td>
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<td>0.259</td>
<td>0.286</td>
<td>0.322</td>
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<td>1</td>
<td>0.131</td>
<td>0.275</td>
<td>0.302</td>
<td>0.257</td>
</tr>
</tbody>
</table>

Enablers

When reviewing the desired enablers in the questionnaire, the respondents were asked about what actions they considered most important to support innovation and innovators. The actions, where, similarly to the barriers, posed as statements that the respondents rated on a five-grade Likert scale from ‘Not important’ to ‘Very important’. The on average most desired actions for improving innovator support are shown in Figure 4.16, sorted by the highest rating.
The different, sample specific, desired enablers are presented in lists of top five preferred actions, see Table 4.7. The lists are categorised by the different sample sources (column) and whether the sample is chosen to represent a good innovation sample or an average innovation sample (row), where the lists are sorted upon highest ranked action in descending order. A good or average innovation population refer to the sample selection, where the samples were chosen to represent a good and an average innovation climate.

**Table 4.7. Sample preference of enablers for improving the innovative climate.**

<table>
<thead>
<tr>
<th>Innovation Index samples</th>
<th>Idea management system samples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Q1</strong></td>
<td><strong>Q3</strong></td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
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<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Good innovation samples</strong></th>
<th><strong>Average innovation samples</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2</td>
<td>Q4</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>
The lists indicate the differences between samples, but it is important to notice that not all actions show a significant difference between samples. It is only the factors “Incentives and reward programs for innovators” (p=0.004**), “Annual COMPANY Top Innovator Award presented by the CEO” (p=0.012*), “Increased manager authority to approve and allocate time and budget for innovators” (p=0.016*) and “Recognition by managers and the company” (p=0.024*) that show a statistically significant difference between samples.

Calculating the statistical significance between innovators, developer and executor difference show only two differentiating factors. The most significant is “Annual COMPANY Top Innovator Award presented by the CEO” (p=0.0032*) which is most preferred by developers, secondly by innovators and least by executors. The second significant enabler is “Increased manager authority to approve and allocate time and budget for innovators” (p=0.014*) which is most preferred by innovators, second most by developers and least preferred by executors.

**Enablers Correlated with Motivational Factors**

The correlations between enablers and motivational factors are low as shown in Table 4.8. Though, the most significant values can be found adhering to the same motivational factors as those with the highest values in the barrier-motivation correlation, namely ME1 “Increased salary or other monetary rewards” at 0.226, ME2 “Promotion/advancement in the organisation” at 0.221, and MI1 “Self-satisfaction of seeing my own ideas become reality” at -0.19. These extrinsic motivational factors both correlate positively to the enabler E5 “Incentives and reward programs for innovators”. The third most significant value are also generated by the enabler E5 “Incentives and reward programs for innovators”, but this one is a negative correlation from the motivator MI1 “Self-satisfaction of seeing my own ideas become reality” at -0.190.

<table>
<thead>
<tr>
<th>Table 4.8. Enabler and motivational factor correlations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M16</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>E1</td>
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<td>E9</td>
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<td>E10</td>
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<tr>
<td>E11</td>
</tr>
<tr>
<td>E12</td>
</tr>
</tbody>
</table>

**Enablers Correlated with Enablers**

There are several medium correlations between the different enablers, as seen in Table 4.9. The three strongest correlations are: E5 “Incentives and reward programs for innovators” and E3 “Recognition by managers and the company”, at 0.528, E11 “Innovation as formal part of IPM with manager” and E10 “Innovation performance measures/targets at Group level” at 0.525, and E8 “Establish a career path for innovators” and E7 “Competence development and training programs for innovators”, at 0.485.
Table 4.9. Enabler correlations.

<table>
<thead>
<tr>
<th></th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
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<tr>
<td>E1</td>
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<td>0.140</td>
<td>0.116</td>
<td>0.108</td>
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<td>0.182</td>
<td>0.117</td>
<td>-0.011</td>
<td>0.084</td>
<td>0.026</td>
<td>0.083</td>
</tr>
<tr>
<td>E2</td>
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<td>0.000</td>
<td>0.070</td>
<td>0.140</td>
<td>0.109</td>
<td>0.143</td>
<td>0.106</td>
<td>0.149</td>
<td>0.032</td>
<td>0.137</td>
<td>0.087</td>
<td>0.071</td>
<td>0.075</td>
</tr>
<tr>
<td>E3</td>
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<td>0.054</td>
<td>-0.013</td>
<td>0.277</td>
<td>-0.009</td>
<td>0.119</td>
<td>0.154</td>
<td>0.088</td>
<td>0.068</td>
<td>0.086</td>
<td>0.088</td>
<td>0.056</td>
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<tr>
<td>E4</td>
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<td>0.239</td>
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<td>0.152</td>
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<td>0.090</td>
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<td>0.049</td>
<td>0.177</td>
<td>0.139</td>
<td>0.089</td>
<td>0.099</td>
<td>0.086</td>
<td>0.090</td>
<td>0.146</td>
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<tr>
<td>E6</td>
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<td>0.044</td>
<td>0.015</td>
<td>0.185</td>
<td>0.127</td>
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<td>-0.003</td>
<td>0.073</td>
<td>0.036</td>
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<tr>
<td>E7</td>
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<td>0.047</td>
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<td>0.048</td>
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<td>0.032</td>
<td>0.160</td>
<td>0.000</td>
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<td>0.040</td>
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<td>0.022</td>
<td>0.211</td>
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<td>0.170</td>
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<td>0.057</td>
<td>0.120</td>
<td>0.117</td>
<td>0.169</td>
<td>0.119</td>
<td>0.123</td>
</tr>
</tbody>
</table>

Enablers Correlated with Barriers

The correlations between enablers and barriers present stronger correlations than the two correlations including motivational factors, as seen in Table 4.10. The strongest correlation is a medium positive correlation between the enabler E5 “Incentives and reward programs for innovators” and the barrier B5 “Lack of roles and responsibilities for innovation” at 0.448. The enabler E8 “Establish a career path for innovators”, show the two next highest correlations with B7 “Lack of roles and responsibilities for innovation”, at 0.343, and B9 “Lack of awareness and innovation skills among employees”, at 0.327.

Table 4.10. Enabler and barrier correlations.

4.3 Workshop

The workshop was carried out to explore what actions that the invited innovators prioritised and suggested as most needed to improve the conditions for and to support innovators. This step of data collection was conducted as a workshop to ensure feasibility of implementation for the suggested solutions by including innovators from different parts of the organisation. The first step included brainstorming and group discussions of ideas related to three relationships affecting the innovator. The suggested relationships were organisation to manager, organisation to innovator/team and manager to innovator/team. After the group discussions, four to six ideas were presented, clustered with similar ideas and finally graded. Secondly, the ideas that were graded and the highest rated were taken further for detailing and suggestion of implementation plan. The ideas further described in the second part were a strategy fitted for innovation execution, implementation of an incubation team for innovations, and fostering an experimental culture. The ideas included in the second part are presented in this section.
The desired outcome from the workshop was actions facilitating the realisation of innovative ideas, making it easier to actualise innovations within the company by using the collective knowledge and creativity. The three prioritised actions for improving innovator climate within the company are presented below.

**Strategy for Execution**

To facilitate a strategy for innovation realisation there are certain actions needed. One suggestion overarching all organisational levels were the introduction of coaches dedicated to innovation, as an actual position. These coaches were defined as people who should know both the organisation and the business, have time dedicated to innovation, and be able to recognise, help and guide innovators.

There were some proposed actions for the organisation in order to support the managers in implementing this strategy. One was to create a clear strategy that emphasise the execution of innovation. The strategy must be broad enough to allow for more radical ideas, accept unknown outcomes and failures. There is also a need to give someone mandate to make things happen, and to make the decision to take it to a next step or not, both for lower-level managers in smaller projects and for radical ideas that might need to be isolated from the big organisation.

For decisions regarding bigger initiatives or radical innovations, another suggestion related to organisational support for the manager is to create an innovators board that are provided time and a budget. In order for these actions to be implemented it is necessary to provide tools, frameworks, and funding for innovation.

Further, an important action is to give some people in the product and development units responsibility for, and KPI’s related to, finding ideas outside their organisation. Additionally there is a need to provide a support structure for driving selected ideas within the organisation, which could include temporary roles and local management to support this.

In the relation between the organisation and the innovator, it is necessary to clearly define and communicate needs, problems, connections with the outside world and funds. The organisation should provide structures and an iterative way to identify, meet, discuss and work on selected new ideas and provide an eco-system with IPR communication. This should enable innovators to meet people in relevant product organisations and have enough face time to achieve understanding. To better allow and facilitate collaboration between units, a cross-unit hosting was suggested. The cross-unit hosting refers to that there is a need to establish a multi-unit work place, where different functions can meet and interact to discuss innovation adhering to detached areas.

**Implementation of a Strategy for Execution**

In order to implement a strategy for innovation execution, an organisation on group function level should be established. A mix of people with different backgrounds and organisational levels who are motivated and courageous should compose the new organisation. They should be allocated a budget for innovation, have a clear process in place, decision power and targets on what to achieve from innovations. This should be a cross-unit organisation, acting as a ‘Plug & Play’ unit with the right competencies to support innovators from different functions to realise their innovations.
**Incubation Team**

The incubation team would constitute a group of people supporting the development of new technologies and services. The idea spurred from a workshop group including a participant working as a programming competition coordinator who has found that many technically skilled people want exciting projects to work on, and that matchmaking of people with good ideas and the people who can realise them would be successful.

The idea is to create a network of technically skilled people whom you could contact to find help regarding the development of an innovation too technically advanced for yourself to develop. This is in line with the outcome of utilising in-house competence.

The main components needed from the organisation to support the team would be to set up the framework for this network and find a way for it to work. It would include recognition, tools, possibly hosting meetings to allow networking and finding the right talents for the start up. The team would preferably include some people who excel in the building of a business to help initiatives proceed towards realisation. There is also a physical component suggested for facilitating collaboration and for innovators to have a place to meet, namely a sort of garage for ‘skunkworks’.

**Implementation of an Incubation Team**

The suggestion for implementation of an incubation team includes some different key-roles, a collaboration framework and three main process steps. The three main steps are ideation, incubation and implementation. The key people included are the inventor/idea owner, and the incubation team, consisting of technically skilled people interested in finding new exciting projects to work on. Other people that need to be included for support are business people who can help with the business aspect and user experience. There is also a need for a unit that can decide which of these initiatives that should be taken further to realisation or implementation.

The incubation process would start with someone who has an idea, which can be raised in the incubation network for further help in the ideation process, concept development, and testing. This process will also include help from people that can create a strong business case or find the right customer connections. When there is a finished concept and an actual proposal for a new business opportunity, it is handled by a board that have mandate to decide on its commercialisation.

**Experimental Culture**

The fostering of an experimental culture is mainly aimed towards creating an acceptance of innovation. The first aspect needed, is for the organisation to start accepting failures and starting to try to learn from failures, and communicating this to managers. There is also a need for allocating resources for experimentation, in order to allow it to happen. Today there is also a long series of positive responses needed to allow an idea to continue to the next step, but only one negative response will kill it. There is also a need for a better balance between radical and incremental innovation, where both must be possible within the organisation. Lastly, creative thinking must be encouraged.

**Implementation of an Experimental Culture**

In order to implement or foster an experimental culture, the organisation must first realise the existence of two cultures, one formalist ‘system compliance’ culture based on status quo, and one nonconformist individual culture including entrepreneurs. To implement an experimental culture, the organisation must shift its focus more towards the nonconformist culture. Actions
associated with the formalist culture to allow for an experimental culture could for example be to allow for 10-20% experimentation time for ad-hoc teams, or for human resource departments to push for diversity. These initiatives should be visible for everyone in the company. Supporting actions related to the nonconformist culture should be to support teams with failed innovation attempts and celebrate failures in an ‘idea compost’ to facilitate learning from failures. Moreover, everyone should get the opportunity to experience how their products are used to allow for further improvements. To emphasise the experimental focus, the organisation should create internal ‘maker-spaces’ to allow for interaction and meeting between innovative people from different areas.

4.4 General Patterns

A pattern is found when examining the table of correlations between motivational factors, seen in Appendix D. The combination of extrinsic and intrinsic motivational factors, as previously divided in Table 4.3, is hypothesised to produce a correlation according to Table 4.11. Two similar, e.g. two extrinsic, factors give a positive correlation, whereas a combination of two different factors, e.g. extrinsic and intrinsic, factors result in a negative correlation.

<table>
<thead>
<tr>
<th></th>
<th>ME1</th>
<th>ME2</th>
<th>ME3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>ME</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>MI</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
</tbody>
</table>

To examine if the proposed relation from Table 4.11 is true. The motivational factor correlation coefficients higher than 0.2 or lower than -0.2, from Appendix D, is visualised in colour and marked with the suggested positive (+) or negative (-) relation in Table 4.12. The factors are given an index (M#) for easier comparison.

<table>
<thead>
<tr>
<th>Opportunities to acquire new skills and experiences</th>
<th>M16</th>
<th>ME1</th>
<th>M11</th>
<th>M12</th>
<th>M15</th>
<th>M13</th>
<th>M14</th>
<th>M15</th>
<th>M16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased salary or other monetary rewards</td>
<td>ME1</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-satisfaction of seeing my own ideas become reality</td>
<td>ME1</td>
<td>(+)</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Getting the opportunity (time and resources) to explore and develop my own insights and ideas</td>
<td>M12</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Getting sufficiently challenging assignments</td>
<td>M15</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contributing to the larger purpose of COMPANY (e.g. COMPANY VISION)</td>
<td>M13</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promotion/advancement in the organisation</td>
<td>ME2</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Flexibility/autonomy to choose what, when and how to do my work</td>
<td>ME4</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Recognition from direct and senior managers</td>
<td>ME4</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Recognition from colleagues, team members</td>
<td>ME3</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
</tbody>
</table>

The intrinsic and extrinsic motivations impact on correlations corresponds with the proposed relation in two of twelve cases that shows a correlation coefficient higher than 0.2 or lower than -0.2. Though, there are two cases, marked with parentheses in Table 4.12, which contradicts the proposed relation. In these cases, the colour does not match the proposed relation (+/-). The cause is uncertain and requires deeper analysis to be clarified.
Intrinsic or Extrinsic Enablers and Barriers

This theory of intrinsic or extrinsic association through calculating correlations is further applied to the enablers to examine whether there are specific enablers that appeal more to extrinsically or intrinsically motivated employees. The enablers are hence correlated with the motivational factors, where extrinsically appealing enablers are for example assumed result in negative correlations with intrinsic factors. There are three stronger correlations indicated for E5 “Incentives and reward programs for innovators” as seen Table 4.13, which is a cutting from the section ‘Barriers Correlated with Motivational Factors’ under heading 4.2 Questionnaire. In this table the colour is set in relation to the coefficient.

Table 4.13. Intrinsic (MI) and extrinsic (ME) correlation with enabler 5 (E5).

<table>
<thead>
<tr>
<th></th>
<th>MI6</th>
<th>ME1</th>
<th>MI2</th>
<th>MI5</th>
<th>MI3</th>
<th>ME2</th>
<th>ME4</th>
<th>ME3</th>
</tr>
</thead>
<tbody>
<tr>
<td>E5</td>
<td>0.024</td>
<td>-0.226</td>
<td>-0.190</td>
<td>-0.079</td>
<td>-0.018</td>
<td>-0.025</td>
<td>0.221</td>
<td>-0.073</td>
</tr>
</tbody>
</table>

The three strongest correlations, stemming from ME1, MI1 and ME2 all indicates that the enabler E5 is of extrinsic character. This is shown in the positive correlation with both extrinsic motivational factors and negative correlation to the intrinsic factor. The same relation is further confirmed by all other factors except MI6 and ME3.

The same relation is examined for the barrier that presents the strongest correlations, namely B5 “Lack of appropriate indicators and incentives”, as seen in Table 4.14. As in the example from Table 4.13 above, the strongest correlations stem from motivational factors ME1, MI1 and ME2, which indicate that B5 is of extrinsic character.

Table 4.14. Intrinsic (MI) and extrinsic (ME) correlation with barrier 5 (B5).

<table>
<thead>
<tr>
<th></th>
<th>MI6</th>
<th>ME1</th>
<th>MI2</th>
<th>MI5</th>
<th>MI3</th>
<th>ME2</th>
<th>ME4</th>
<th>ME3</th>
</tr>
</thead>
<tbody>
<tr>
<td>B5</td>
<td>-0.029</td>
<td>0.230</td>
<td>-0.194</td>
<td>-0.103</td>
<td>0.003</td>
<td>-0.069</td>
<td>0.221</td>
<td>0.011</td>
</tr>
</tbody>
</table>

To verify and prove the relation that the enabler E5 and barrier B5 is of extrinsic character, the correlation between these two extrinsic factors should also produce a positive correlation. The correlation between B5 and E5 is 0.448, as seen in Appendix D, implying a positive relation that confirms the proposed pattern.

The theory is further applied, as exemplified, on all barriers and enablers to examine intrinsic or extrinsic tendencies, which are presented in Table 4.15.
Table 4.15. Barriers (B) and enablers (E) by intrinsic or extrinsic tendency.

<table>
<thead>
<tr>
<th>B1</th>
<th>Lack of time and budget for innovation</th>
<th>Extrinsic</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2</td>
<td>Lack of cross-unit collaboration, organisation working in silos</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>B3</td>
<td>Lack of path for implementing more radical ideas</td>
<td>Intrinsic</td>
</tr>
<tr>
<td>B4</td>
<td>Lack of flexibility, too rigid organisation, processes</td>
<td>Intrinsic</td>
</tr>
<tr>
<td>B5</td>
<td>Lack of appropriate indicators and incentives</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>B6</td>
<td>Lack of boldness, too risk-averse organisation</td>
<td>Intrinsic</td>
</tr>
<tr>
<td>B7</td>
<td>Lack of roles and responsibilities for innovation</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>B8</td>
<td>Lack of inspiring innovators as role models</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>B9</td>
<td>Lack of awareness and innovation skills among employees</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>B10</td>
<td>Lack of support, interest and authority from immediate managers</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>B11</td>
<td>Lack of innovation goals, objectives and expectations</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>B12</td>
<td>Lack of customer and market insights</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>B13</td>
<td>Lack of process, tools and methods for innovation</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>E1</td>
<td>Increased manager authority to approve and allocate time and budget for innovators</td>
<td>Intrinsic</td>
</tr>
<tr>
<td>E2</td>
<td>Active support from managers to drive innovation projects</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>E3</td>
<td>Recognition by managers and the company</td>
<td>Intrinsic</td>
</tr>
<tr>
<td>E4</td>
<td>Cross-functional networking, internally and externally</td>
<td>Intrinsic</td>
</tr>
<tr>
<td>E5</td>
<td>Incentives and reward programs for innovators</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>E6</td>
<td>Clear channels for insights and ideas</td>
<td>Intrinsic</td>
</tr>
<tr>
<td>E7</td>
<td>Competence development and training programs for innovators</td>
<td>Intrinsic</td>
</tr>
<tr>
<td>E8</td>
<td>Establish a career path for innovators</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>E9</td>
<td>Established routines for learning from failures</td>
<td>Intrinsic</td>
</tr>
<tr>
<td>E10</td>
<td>Innovation as formal part of IPM with manager</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>E11</td>
<td>Innovation performance measures/targets at Group level</td>
<td>Extrinsic</td>
</tr>
<tr>
<td>E12</td>
<td>Annual COMPANY Top Innovator Award presented by the CEO</td>
<td>Extrinsic</td>
</tr>
</tbody>
</table>

This indicated pattern might be further utilised to encourage creativity and innovative behaviour, which according to Amabile (1998) is intrinsically motivated. The barriers and enablers correlating positively with intrinsic motivational factors can then be used to spur innovation.
5. DISCUSSION

The discussion will focus on finding patterns in the observations such as associations between barriers and enablers to find what actions can be taken to break the specific barrier. Furthermore the observations will be connected to previous literature to see if preceding studies can strengthen the findings. The discussion will be divided into sections from the topics: utilisation of innovative capabilities, characteristic, motivation, barriers and enablers. The sections include the analysis and discussion done on the initial interviews, questionnaire and workshop.

The study includes the four samples Q1, Q2, Q3 and Q4, where the samples Q1 and Q2 were chosen to reflect high respectively average performing teams or units in terms of innovation. As expected it was also reflected in the results where the sample Q1 rated both the innovation conditions better and innovation barriers lower than Q2, thusly indicating a better environment for Q1. In the comparison of Q3 and Q4, chosen to represent successful and engaged but not yet successful innovators, the purpose was to understand why some succeed and if there was a difference in barriers. But the comparison unexpectedly showed that the Q3 sample perceived their conditions to be worse, the barriers to be higher in general and in terms of motivation there were no outstanding characteristics. The biggest and most statistically significant difference in perception of barriers between these samples was the lack of path for implementing radical ideas, also indicating that a clear path for realisation is missing and strengthening the hypothesis of the innovators struggle to find their own way for realisation.

5.1 UTILISATION OF INNOVATIVE CAPABILITIES

All interview respondents agree that the utilisation of innovator capabilities is too low. The questionnaire participants additionally indicated that they 'Neither disagree nor agree' whether innovators potential are fully utilised. Moreover, the participants graded the innovation performance between satisfactory and good, with a slight increase with organisational advancement. According to a few interview respondents, this is a result of the competitive industry and weak economic climate causing low profit margins that leads to less funds being available for investments. A couple of respondents’ also mention that the utilisation of innovative capabilities differs between departments, which is further supported by the questionnaire sorted upon departments, although the difference is not statistically significant between all samples.

One respondent explains that innovation is more likely to happen in small clusters and that it is hard to realise innovations in large companies. When considering the sampling frame and in particularly the innovation index results, which separates Q1 from Q2, the team size was analysed for affection on the results. A larger team may lack agility and have coordination difficulties. In support of this theory, Quinn (1985) found that innovative companies work in small project teams. The calculation of the workgroup sizes showed that teams in the sample Q2 (‘Average innovation index’) had 50% more team members with 19.23 members on average, than Q1 (‘Top innovation index’) with 12.83 members, which might have affected the innovation index result. Further analysis is needed to secure the team size’s affection.
5.2 Characteristics

The most commonly mentioned characteristic is a strong passion or enthusiasm for the job, which is mentioned in four of the nine interviews. This have been found in the previous literature as well were innovators are described as very driven and passionate about what they do (Pinchot, 1987; Quinn, 1985).

Furthermore curiosity, stubbornness and a will to improve are mentioned in several interviews as well as previously mentioned in literature. The curiosity and will to improve traits correspond to the literatures ‘Opportunity Exploration’, which refer to how entrepreneurs and innovators continuously search for and explore new opportunities (Zaltman, et al., 1973; De Jong & Wennekers, 2008; Cromie, 2000; Pinchot, 1987). Furthermore, stubbornness, perseverance (Fry, 1987) and will to succeed (Schumpeter, 1934) are reflected innovator characteristics from the interviews but mainly derived from literature. Creativity and trying to solve problems in new ways is also mentioned in the interviews, and relates to the necessary ability of finding a way to exploit the occurring opportunities (Gaglio & Katz, 2001; Shane, 2003).

Strong initiative is also mentioned as an innovator characteristic and in some cases the innovator is acting as an informal or formal leader. Innovators challenge the status quo (Cromie, 2000; Dyer, et al., 2011) and are proactive (De Jong & Wennekers, 2008) with initiative and drive to pursue opportunities. Moreover, the innovator takes charge and promote issues to acquire resources for starting up a project and find solutions.

Two of the employee level interviewees also mention that innovators can often be identified and seen as troublemakers who want to achieve more and not follow the exact process. This have been brought up by both Quinn (1985) and De Jong and Wennekers (2008), who describe that the innovators are seen as non team-players and that people usually do not like change, why innovators might meet heavy resistance.

The only sample that produces a statistically significant difference between the participants’ perceived innovator and executor skills is Q3 (p=0.00163**) as shown in Figure 4.3. This confirms the assumed sample characteristic that Q3 contains ‘renowned innovators’, at least according to their own perception. The relation shown in Figure 4.4, where a larger proportion of the sample Q3 strongly agrees to be innovators, further endorses this assumption.

Self-Assessment

The self-assessment from the questionnaire testing the respondents profile on innovator and executor skills shows that there is a slight difference between the subjective perception and self-assessment result. According to many of the employees’ own perception they are in somewhere close to the middle with equally or nearly equally high skills in innovation and execution. The result from the self-assessment directs them more to the sides, proposing an innovator or executor profile, rather than a developer profile in-between.

Moreover, the general perception of being situated more in the middle of a profile spectra stretching from innovator to executor, see Figure 4.2, might be an effect from the function determining the profiles. Even though the same function was used for calculating the profiles, the perceived profile might result in less peripheral profiles as focused innovator and executor. In order to be assigned focused innovator or executor profiles, the conflicting skills must be rated low. Since the average skill perception is higher than what the skill level indicated by the test, as noted above, this might result in more interim profiles.
5.3 Motivation

The result on motivation follows the pattern of all previous studies in regards of intrinsic or extrinsic motivation. The aim of this section is to explain the associations of the findings with previous literature and between the different data collections.

Intrinsic or Extrinsic Motivation of Innovators

Four respondents claim that innovators are rather driven by passion, which is an intrinsic force also mentioned by both Quinn (1985) and Csikszentmihalyi (2000). Amabile (1998) further supports this intrinsic drive by claiming that creative work is motivated by intrinsic motivation. Additionally, this is in line with Govindarajan and Desai (2013) who define innovators as self-motivated. The questionnaire show several indications that innovators are motivated intrinsically and not extrinsically.

The questionnaire shows an apparent difference in motivation preferences between innovators (I and I+e), developers and executors (E and E+i), as seen in Figure 4.10. However the difference is only statistically significant in five of the motivational factors. The motivational factors are divided in intrinsic and extrinsic motivation where the innovators are clearly more affected by intrinsic motivation such as fulfilment. Increased salary is the only extrinsic motivator that makes the top five motivators for innovators, which can indicate an unsatisfied hygiene factor. Hygiene factors are factors that should be satisfied to a level of normality to enable creative work (Amabile, 1998) and not result in dissatisfaction (Herzberg, 2003). An observation though is that it is the developers that are most extrinsically motivators, who have ranked increased salary as the most motivational factor and promotion as the fifth most motivating. For the executors increased salary is the second most motivating factor whereas the intrinsic factor of acquiring new skills and experience is ranked the highest.

Furthermore, one respondent highlights that financial incentives does not motivate creative work related to the right side of the brain. Additionally four respondents clearly state that extrinsic forces do not motivate innovators. This is also reflected by the questionnaire where innovators where the group least motivated by increased salary or monetary rewards. The radar chart of motivational factors between the samples, see Figure 4.11 indicates that Q1 is sample most motivated by salary increases or monetary awards indicating a team of more executors or developers. This is contradicting the high innovator concentration in Q1, based on that Q1 is specifically chosen to reflect those in a ‘favourable setting for innovation’. It can instead strengthen the argument for diverse teams for a success in innovation, as mentioned by Judge et al. (1997) and Amabile (1998). Another indicator, from the questionnaire, against extrinsic motivation is the correlations of increased salary and promotion which both show a negative correlation with getting opportunity for exploration of ideas. It suggests that if salary or promotion is rated low the other is opportunity for exploration is rated high, and vice versa.

Top Motivational Factors

The most motivating factor, according to several of the interview respondents, is the possibility to realise your idea, to get to test your theories and get an outlet for creativity. It is further strengthened by the questionnaire response, which put “Self-satisfaction of seeing my own ideas become reality” at the top. Self-satisfaction is even used to define intrinsic motivation, which Ryan and Deci (2000) explain as something that is done for the satisfaction of doing it. The factor “Self-satisfaction of seeing my own ideas become reality” strongly relates to achievement,
which is acknowledged as highly motivating (Herzberg, 2003), a focus of successful innovators (Quinn, 1985) and found to be strongly related to entrepreneurial behaviour (McClelland, 1961).

The desire to improve one’s skills, which is raised by an interview respondent, ranked as the second most motivating factor for innovators and developers, and ranked as the most motivating factor for executors is an aspect related to mastery. The will to always learn and improve correlates with Pink’s (2009) theory of Mastery.

The respondents mention recognition as an important aspect for innovators, which correlates with Herzberg’s (2003) findings. It is however not as highly rated by the questionnaire participants, where recognition by superiors is ranked as the 7th most important motivation and recognition by colleagues 10th out of a total of 10 motivational factors. Innovator awards and an ideation tool are some incorporated methods for recognition, but sometimes the gained recognition is insufficient. A barrier to innovation noted by Amabile and Gryskiewicz (1987) is malfunctioning recognition systems. These systems may in many cases emphasize extrinsic rewards instead of the intrinsic motivation gained in the recognition itself. One respondent also mentions the importance of being flexible when rewarding employees so that the reward is suited to the individual, this is further confirmed by Judge et al. (1997). It is also stated by Amabile (1998) that, personal recognition is important and that the whole organisation must promote and encourage all creativity efforts, even those with a negative outcome. Personal recognition communicates the person’s importance to the company, which helps keep a high engagement. Publicly acknowledging an innovator also result in this innovator posing as a role model of successful innovation and show that it is possible to accomplish inspiring innovation efforts in the organisation (Kanter, 1985), by showing that innovation is prioritised. Judge et al. (1997) relate to this by proving that the most creative firms rely heavily on personal recognition and not as much on financial rewards. Judge et al. (1997) paraphrases Pittman et al. (1982), who claim that relying heavily on extrinsic rewards can misdirect employees.

Innovators ranked sufficiently challenging assignments on fifth place of the motivational factors from the questionnaire, which have strong support from the literature. Challenge is mentioned as a part in the struggle for mastery (Pink, 2009), a criteria for flow in which the goal is self-rewarding (Csikszentmihalyi, 2000) and as one of the most effective ways to stimulate creativity (Amabile, 1998)

One interview respondent mentions authority over daily routines and the work process together with a feeling that you are changing the society as the strongest aspects to motivating innovation. These aspects strongly match the two of the innovation motivating factors described by Pink (2009), namely autonomy and purpose. Further, Amabile (1998) mention process autonomy as a strong enabler. These are however not as highly rated motivational factors in the questionnaire.

As for the managers’ motivation, Miller et al. (2012) discovered ‘Accountability for realising growth’ as one factor. Several respondents mention that their managers do get recognition from the innovative contributions of the team and that they are motivated by it, which contributes to the above mentioned accountability for firm growth.

Motivation for innovation is handled in many different ways throughout the organisation. In some units the focus are solely on monetary rewards, whereas some units does emphasize the recognition of innovators. In general respondents express an opinion that the organisations incentive system is too inflexible, unable to provide the desired motivation. This could result in the organisation sending the wrong signals to the employees (Amabile & Gryskiewicz, 1987).
5.4 Barriers

In this section, the raised barriers from the data collection was concluded and matched with previous research. The discussion of barriers will mainly focus on the overall ranking of barriers and differences in perception between the different samples, since the comparison barrier perception divided by profiles indicated no difference, as shown in Figure 4.15. The goal with the comparisons, between samples Q1 and Q2 and the samples Q3 and Q4, was to explore the difference between the high and average scoring teams from the innovation index, and the difference between acknowledged innovators and those showing a strong interest and engagement in innovation, identified through the ideation tool. Where applicable, the following paragraphs were sorted upon the overall ranking of barrier perception.

Lack of Resources and Funding

The availability of funding and resources, together with the high delivery pressure were the most frequently mentioned barriers to innovation during the interviews. Additionally, a strong focus on customers, efficiency and performance was indicated as the most prominent conditions in the questionnaire. Some interviewees also expressed that this intensified operationalization had caused a decrease in innovation capabilities. The result is that the employees are fully allocated, leaving little time for experimentation or innovation initiatives. Sykes and Block (1989) relate to this barrier as ‘long-term planning’ that creates inflexibility to respond to occurring opportunities and possibilities. The delivery pressure directly relates to a lack of available resources, which is mentioned as a key enabler by several authors (Amabile, 1998; Kuratko, et al., 1990; De Jong & Wennekers, 2008; Fry, 1987). One senior manager mentions that this is something that they are actively working with and the employee utilisation have been lowered to 85 percent at their site. Further, one interviewee working for this senior manager were allocated 20 percent time to work on innovations, but could rarely use these 20 percent.

Lack of time and budget was also the highest rated barrier from the questionnaire, which the interview respondents also reflected when expressing that it is hard to secure funding and resources to actually realise ideas. One respondent further explained that the perseverance in funding is too low, and that the funding might run short just before commercialisation, mentioned by MacMillan et al. (1986) as an underestimation of funding. Several respondents also state that there are no budgets for innovations due to the low margins, cost-savings and inflexibility in budgets, which are allocated in the beginning of the year. Amabile (1998) relates to this and claims that sufficient funding is an important enabler, which is further discussed in the next section, 5.5 Enablers. Another funding barrier is expressed by a respondent explaining that innovation work is often funded by the different business units themselves, which result in that innovations covering more than one area rarely gets funding due to the conflict in responsibility.

Financial Measures

Several respondents express that it is very hard to realise innovations since it needs to be certain to provide a positive revenue generation before the project can start. One respondent further explain how innovation projects are always measured against already profitable business with a paying customer, which makes it hard to compete. This relates to the managerial pessimism to innovation, which is discovered to be a result of relying heavily on financial measures (Sykes & Block, 1989; Quinn, 1985). Sykes and Block (1989) state that a strong focus on profitability can be wrong for new initiatives in a highly technical industry, where measures like market share and
penetration can be far more important for innovations. Christensen (1997) does for example stress that the best possibilities for growth lies in small, often supposed insignificant, niche-markets about to flourish rather than big mature markets. It is further supported in the article on Blue Ocean Strategy (Kim & Mauborgne, 2004). Finding these niches requires a long-term target and patience, which large firms frequently deviate from in pursuit of short-term profitability (Christensen, 1997). Quinn (1985) explains the problem as a mismatch of the short cycles of financial measures and the long-term and much more flexible plans required for major innovations.

Several respondents mentioned that new initiatives are benchmarked against existing products or services. This measurement is unfair, since the performance of new initiatives commonly increase over time with the development of these initiatives. It is commonly described by the S-curve model of technological evolution. A new technology/product will often show lower performance initially but gain advantage over time, why other measures than financial indicators are more important when evaluating these start-ups.

**Lack of Cross-Unit Collaboration**

A problem raised by several interviewees, and second highest rated barrier in the questionnaire, is the problem that the company is split up into different business units today, making collaboration across different disciplines unnatural. There is no simple platform or way for collaborating between the divisions. Amabile and Gryskiewicz (1987) referred to this barrier as ‘Divisional Organisation’. Since a common way to create new innovations or opportunities lies in the combination of existing solutions (Dyer, et al., 2011), the elimination of this barrier would be beneficial. Large organisations working in several fields should have a high value in collaboration as the value of an opportunity is affected by how many that knows of it (Shane, 2003).

**Unclear or Absent Processes**

Both the senior manager respondents mention business cases as a part of the process for deciding on realisation and allocating funds, but it is not mentioned by any of the employees. This might indicate a gap in knowledge of the need to create business cases and the importance of them. It is also reflected by the questionnaire where “Lack of a path for implementing more radical ideas” is ranked as the third strongest barrier for innovation. The same barrier does also show the biggest difference when comparing Q3 with Q4, indicating that Q3 who have gone through the process of realisation have encountered roadblocks along the way. Moreover, this barrier showed intrinsic tendency in the proposed pattern in 4.4 General Patterns, meaning that this barrier would, if limited, enable for intrinsic utilisation.

One respondent’s example of the problem regarding innovation processes is that not everyone is familiar with how to write a patent or know what can be patented, meaning that important patents might be lost.

Another problem area is the lack of processes for learning from failures. Some respondents even claimed that there were no failures, and all the respondents who mentioned processes for failed innovation attempts explained that the process was not working. A respondent claimed that there was no structure concerning how to shut down projects and no one taking care of feedback from the project.
Inflexibility and Risk-Aversion

Respondents, and questionnaire participants, have expressed that the organisation is very operationalized with formal processes and set in its ways of doing things. This can lead to an unreasonably risk-averse behaviour where no one dares to step outside the procedures (Amabile & Gryskiewicz, 1987). New initiatives will be handicapped if they have to follow the same procedures as the routine work since they will have to be much more responsive to the market (Sykes & Block, 1989), to not miss out on important opportunities (Quinn, 1985).

Both interview respondents, questionnaire and workshop participants agree that the organisation is very risk-averse and discouraging to experimentation. Encouragement of experimentation is for example the lowest rated condition, and lack of boldness and flexibility the biggest difference between good and average climates for innovation. One respondent state that: “We have to have a culture where it’s ok to learn from mistakes. We have to encourage people to take the risk.” Christensen (1997) states that innovation will require taking unacceptable risks and relying on the vision and belief of how the future should be. The questionnaire questions on conditions and answers from the interviews infer a very strong customer focus, which according to Christensen (1997) could be fatal if it becomes the sole focus of the company. The underestimation of niche-markets and a total customer focus have previously caused other companies’ downfalls, as disruptive innovations often spring from these small niche-markets and not customer requests.

When comparing the barriers perceived by Q1 and Q2, the biggest difference, which also shows high significance, is found in the barriers "Lack of flexibility, too rigid organisation, processes" and the "Lack of boldness, risk-averse organisation". Both indicating that flexibility and risk-taking is vital for the innovation climate but also that it is something that differs between teams and thereby can be affected on manager level. Further, these two barriers showed intrinsic tendencies in the proposed pattern in 4.4 General Patterns, meaning that these barriers would, if limited, enable for intrinsic utilisation.

Additionally, there were no examples of procedures for learning from failures since in many of the respondents views there were no failures. Failures in development were expressed to not be an option. This relates further to risk-aversion, in the aspects that projects carrying some risk are never explored and that not exploring these opportunities is not considered a failure. A respondent explains, “If you do not have failures, it means that you did not try enough.” Reflecting that this high risk-aversion can lead to severe losses in missed opportunities, which are hard to put a value on until someone else discover that opportunity. A respondent states that, “you must start with 1000 ideas and at the end you can select one idea and then you will have 999 failures … in this case, failure is a good thing”.

Lack of Autonomy

Relating to the preceding paragraph on inflexibility, two of the employee level interviewees mentioned that innovators could be seen as troublemakers since they might not want to follow the exact process but want to achieve something more. One of them describe this as a result of the operationalisation specifying what, how and when thing should be done in detail. This clearly indicates a lack of freedom in the work process, which have been proven important, in previous research, for facilitating and stimulating creativity (Amabile, 1998; Judge, et al., 1997; Pink, 2009). To feel motivated, and in flow, in work it is important to have a clear goal and updates on the progress (Csikszentmihalyi, 2000), but to also to have a certain degree of freedom in the process of solving the task (Amabile, 1998).
Lack of Manager and Organisational Encouragement

Several respondents raise the problem of a lack of interest from managers. Managers risk to kill creativity by meeting initiatives with scepticism and harsh reviews instead of an open mind-set (Amabile, 1998). An organisational indifference and intolerant attitude towards ideas and not wanting to improve is discrediting creativity (Amabile & Gryskiewicz, 1987). Some respondents also mentioned that managers are not that frequently or not at all attending the innovation events, which also communicates an indifference from managers.

One respondent examplified that when allowed to set aside normal work and spend extra time on an innovation project just before a launch, the respondent’s manager was questioned for doing so. Thusly undermining the decision and implying that allowing time for innovation is wrong.

Overloaded Ideation Tool

According to the interviews, the ideation tool has gotten highly overloaded resulting in that the good ideas are hard to find. Hence, ideas very seldom reach implementation, which makes the ideation tool lose its credibility. This corresponds directly to Hassan’s (2010) article that mentions a problem in how the amount of ideas often becomes unmanageable. The interview respondents explain that this is probably a result of the performance reviews including a measure of submitted ideas, which makes employees enter anything.

A proposed solution to the cluttered ideation tool was suggested to be a filtering enabling a stronger impact of submitted ideas. It could either be a filtering through a regional or functional review so that the ideas are discussed in the idea providers region or team before it is submitted. It is also suggested to include a measurement of idea maturity, such as: “this idea is at 70 percent maturity to reach realisation”.

Lack of Role Models

One employee mentions a lack of role models. There are no company champions or people to look up to in innovation. The statement relates to the theory of not promoting innovative people since they are seen as radical and uncontrollable (Sykes & Block, 1989), which will result in a loss of innovators in higher positions that promote innovation and understand the innovators as well as a lack of role models. It can also relate to lacking recognition of innovators, causing them to remain unseen.

5.5 ENABLERS

This section deals with and correlates enablers from the interviews with previous literature. Desired actions and enablers were also rated in the questionnaire to provide a wider organisational perspective. The enablers were in many cases the opposite of the previously brought up barriers, thusly providing two perspectives, the problem and its solution.

Empowered and Supportive Managers

Empowerment of managers was mentioned as important in several interviews, and additionally the enabler “Increased manager authority to approve and allocate time and budget for innovators” was ranked as the strongest enabler in the questionnaire. This indicates a strong desire, from both interviews and questionnaire, to support the managers and strengthen them in the allowance of smaller projects and concept testing. Sykes and Block (1989) stated that managers must have sufficient authority to act upon initiatives in order for the organisation to be responsive to opportunities, which is also reflected throughout this study. One respondent
mean that the support for innovation must come from the top, so that the managers feel confident in their support of innovation. The respondent mean that it is crucial to not kill off ideas at an early stage, which is also reflected by Amabile (1998) stating that it is very important to not meet initiatives with scepticism. Another respondent mentioned that as a manager or senior manager, it is important to never ask where a prototype came from or in what time it was crafted, as it questions the initiative to do so. Sykes and Block (1989) have identified this lack of manager authority, in lower levels, to be a result of the managers’ limited competence and small specialised workgroups. The heavy specialisation leads to a lacking overview or transparency, which mean that it is harder to identify crossovers and possible combinations.

Furthermore, the employee who also was the most positive in regard of the innovator conditions raised one of the most mentioned enablers. This enabler was strong manager support and ‘championing’, which strongly relates to the second highest rated enabler “Active support from managers to drive innovation projects” from the questionnaire. The respondent explains that when an idea was raised, the manager brought it up in the team for a group discussion and then took action to seek funding for it. This can be related to innovation championing, which is previously described as an often self-appointed innovator characteristic that refer to the promotion (De Jong & Wennekers, 2008), negotiating and seeking of support for ideas (Zaltman, et al., 1973). Another employee respondent, given high autonomy by the manager, pushes trust as a strong enabler of innovation as this is what allows the respondent’s freedom.

The comparison of the top five wanted actions from each sample gives an indication of what separates a great from an average innovation climate. The comparison show that it is only the sample Q1, representing a great climate, that does not see “Increased manager authority to approve and allocate time and budget for innovators” and “Active support from managers to drive innovation projects” as top the most important actions for improving the innovator climate. This indicates that it is these two actions that can then be seen as the most important to enhance the innovation climate to the level of Q1. The enabler regarding active support from managers did also show intrinsic tendency in the proposed pattern in section 4.4 General Patterns, meaning that implying this action would appeal to intrinsically motivated employees.

Resource and Funding Availability

The most common enabler sought in the interviews was, as a response to the barriers, the availability of funding and resources for realisation of innovations. There was a strong wish for some kind of system that could allocate money, preferably marked for innovation projects, on short notice and in a more flexible manner as opposed to the one-year budgets. This is also supported by previous research stating that there must be sufficient funding (Amabile, 1998; Kuratko, et al., 1990). Making resources available is also a way to keep employees engaged and devoted (De Jong & Wennekers, 2008; Fry, 1987). Kanter (1985) found that highly innovative companies both expects and rewards achievements, in which they also invest a lot since it is expected to show results.

The interview respondents request a practise for facilitating initiatives with the aim to support realisation and implementation, since they perceive a lacking response on initiatives. Additionally, some sort of committee for evaluating and comparing submitted ideas was suggested to decide on funding for more radical initiatives, for example an internal ‘investment bank’. Sykes and Block (1989) advice to include members from different business areas to enable for correct and comprehensive solutions.
An important action that is brought up is to allow innovation projects a budget more early on, so that it is not budgeted as a cost for the business units, but rather something creating value. It is therefore suggested to allow innovations a project number even in the initial experimental phase.

**Cross-Unit Collaboration**

Some respondents mentioned that connecting separate units in the value chain, for example ‘research’ and business units could enhance the innovation capabilities. It is also reflected by the questionnaire participants, by which the enabler “Cross-functional networking, internally and externally” got the fourth highest average score. In addition, this enabler showed intrinsic tendency in the patter proposed in section 4.4 General Patterns, hence engaging intrinsically motivated employees. Amabile (1998) mentions the reward of idea sharing and collaboration as one of the most important aspects in recognising employees, since it will increase the overall knowledge and enjoyment in work. This relates further to two benefits of ideation platforms, which Karlsson (2010) claim to simplify collaboration and building on the collective knowledge in the company.

An important aspect for innovation is the availability of information (Shane, 2003), which should be increased through an intensified cross-unit collaboration and transparency in the organisation. The information is also perceived as more valuable if it is inaccessible to others (Shane, 2003), meaning that a large organisation should have an advantage from internal communication.

One respondent suggest reviewing the possibility of giving informal titles like ‘innovation ambassador’. In order to only address those with passion for, and who value innovation, this role should include e.g. after-hours seminars and networking with likeminded. This role should not be associated with increased salary or advancements, to avoid attracting extrinsically motivated individuals.

**Diverse Team Composition**

One of the respondents mentions that it is important to gain different perspectives on problems or initiatives. Hence, if there are one hundred people thinking one thing, then the two or three people thinking something else are crucial. This is also strengthened by previous research on innovation and creativity stating that it is important to assemble diverse teams to increase the knowledge and widen the perspective (Amabile, 1998). To really benefit from the diversity it is also important that the team appreciate and respect the variety of knowledge (Judge, et al., 1997).

**Customer Integration**

One respondent mentions that a success factor in innovation is to put ideas in a business context and work in close collaboration with potential customers. This have been identified earlier by Quinn (1985), who state that successful inventor-entrepreneurs are need or achievement oriented and tend to work with customers in development as they are often lacking resources to do it themselves. The strong customer focus could be further identified as an overall characteristic of companies that are successful in innovation.

**5.6 Priority Actions**

In this section, relations between the three prioritised actions, from 4.3 Workshop, and preceding data collections and research are reviewed. The first overarching action is a ‘Strategy for Execution’, which strive to create a path and guide promising innovations to realisation. The second is an ‘Incubation Team’ that can be called on for help with expertise in technology or
business. The third is an ‘Experimental Culture’ aiming to create an acceptance for exploration and concept testing. All prioritised actions from the workshop suggest that it is not recognition or reward that is the problem regarding innovation in the organisation but rather the lacking possibility and unclear process to actually commercialise an idea.

The five barriers perceived as most pertinent, see Barriers in section 4.2 Questionnaire, were all addressed by these actions. Additionally, the three prioritised actions from the workshop was mapped with the five most desired enablers from the questionnaire, see Enablers in section 4.2 Questionnaire, to see which desires are satisfied by these initiatives. When mapping the enablers with these prioritised actions “Recognition by managers and the company” and “Incentives and reward programs for innovators” were the two desired enablers among the top five which were left unserved by the prioritised actions. The addressed enablers “Increased manager authority to approve and allocate time and budget for innovators”, “Active support from managers to drive innovation projects” and “Cross-functional networking, internally and externally”, all strive to enable the realisation of innovation and thusly enhance intrinsic motivation as indicated by the motivation correlations.

Strategy for Execution

The strategy for execution serves as an overarching topic as all three prioritised actions strive to improve and enable implementation of existing and upcoming innovation initiatives. It will therefore include aspects associating to the other two. The explorative culture is needed to foster initiatives and the innovation spirit, and the incubation team will assist these initiatives on the path towards execution and commercialisation. Further, the proposed strategy for innovation execution involves actions that address the four top barriers from the questionnaire.

The most directly addressed barrier is the third highest ranked “Lack of path for implementing more radical ideas”, which is the overall purpose of the strategy aiming to support the realisation of innovations. A main topic resulting from the workshop was the realisation of innovations. A clear goal and feedback on the process, which should be included in this path, is a key to enabling flow, which is a strong motivator (Csikszentmihalyi, 2000).

The barrier “Lack of time and budget for innovation” is addressed through an extra manager budget for smaller innovation initiatives and by the assembly of an innovation board for funding of bigger initiatives, thusly supplying sufficient funding (Amabile, 1998; Kuratko, et al., 1990). Having an innovation board would also avoid the conflicts in funding of initiatives that is not applicable to an existing business unit or those bridging two units, which was explained as a barrier in an interview.

A part of the strategy for execution, as well as a culture for exploration, is to empower managers to allow for a quicker decision making and avoiding the ‘yes-ladder’, which refer to the chain of positive responses needed for decisions to come through. The empowerment of managers will allow decisions regarding the allocation of resources and budget to be made on lower levels in the hierarchy. This, together with the preceding paragraph, responds very well to the enabler “Increased manager authority to approve and allocate time and budget for innovators”, which was the highest ranked from the questionnaire and often mentioned in the interviews. The empowerment of managers is also a way to enable more active manager support for realisation of innovations, which corresponds with the second highest ranked enabler “Active support from managers to drive innovation projects”’. The strategy for execution thereby responds to the top barrier and the two strongest enablers raised in the questionnaire.
‘Innovation Ambassadors’, as mentioned under 5.5 Enablers in Cross-Unit Collaboration, can be used for scouting and networking with other business units to find interesting crossovers. It serves as a part of bridging the business units for enhanced cross-unit collaboration, referring to both the second highest ranked barrier “Lack of cross-unit collaboration, organisation working in silos” and to the fourth most important enabler “Cross-functional networking, internally and externally”. Also relating to cross-unit collaboration is the proposed action to include performance measures for networking and implementation of both internal and external ideas, which responds to the fourth ranked barrier “Lack of appropriate indicators and incentives”.

Both the ‘Strategy for Execution’ and ‘Incubation Team’ propose a place where innovators can meet for facilitating ‘skunkworks’ and enabling cross-unit collaboration, networking and physical meetings.

**Incubation Team**

The incubation team does partly propose procedures for making human resources and expertise available for innovation projects, which is a vital enabler (Amabile, 1998; Kuratko, et al., 1990; De Jong & Wennekers, 2008; Fry, 1987). The incubation team is also a good example of a practise to facilitate innovation, which was requested by several interview respondents.

By introducing an innovation incubation team including team members from different business areas, the innovation capacity covers wider spectra of areas and topics. Hence, positively averting the barrier “Lack of cross-unit collaboration, organisation working in silos”, mentioned as a divisional organisation (Amabile & Gryskiewicz, 1987), and includes the enabler “Cross-functional networking, internally and externally” described by its positive effects in precious literature (Amabile, 1998; Karlsson, 2010). Moreover, the incubation team will have a clear and structured process for developing and implementing innovations, addressing the barrier “Lack of path for implementing more radical ideas”.

The challenge will be to motivate the members in the incubation team. This will partly depend on whether the team will get formal recognition and members will be allowed to work on these solutions during working hours. Some employees might already be in open-source communities working for free for the desire of finding challenges. A setup similar to development in open-source communities might be possible for the incubation team. Dahlander and Magnusson (2008) discuss the use of open source communities in firms and state that it is mainly interest and passion for the exciting parts of development that keeps the members engaged.

**Experimental Culture**

Several interview respondents mention that fostering an experimental culture is key when trying to enhance a company’s innovative capability. From the interviews, the respondents emphasise the importance of creating an open culture of sharing and challenging, where mistakes are accepted and the organisation is less risk-averse. The culture needs to allow for innovation, where managers make their own decisions of what is feasible. In addition, one respondent highlights the importance of acknowledging the unconventional thinkers and successful innovators.

Some companies drive initiatives such as allowing employees time to work on own projects in order to cultivate an innovative culture and promote experimentation (Fry, 1987). Incorporating a certain degree of freedom over how to perform your daily tasks is vital for employees to be creative (Amabile, 1998).
By fostering an experimental culture where active consideration is taken to accept innovation along with its inherent uncertainty, the barrier “Lack of flexibility, too rigid organisation, processes” is constrained. In addition, the proposed ‘maker-spaces’ increase the interaction between different functional areas and hence improves the enabler “Cross-functional networking, internally and externally”. Welcoming experimentation also strengthen process autonomy which have been found to increase creativity (Amabile, 1998), and enhance motivation (Csikszentmihalyi, 2000).
In this chapter, the contribution to knowledge in theory and practice are summarised. The main findings are concluded and the research questions stated in the introduction are answered. The conclusions will consist of both practical contributions with applicable recommendations and additions to the theoretical body of knowledge regarding the considered topics.

As mentioned in the problem statement, the company has identified a need to better recognise and support their innovators and make them more visible throughout the organisation. Furthermore, learning from failure can be better promoted and it can in some cases be considered a career risk to engage in entrepreneurial activities. In order to solve these problems and find recommendation to how the company can enhance the use of their inherent innovative capabilities, the overarching research question “How can the studied company’s innovative capabilities be further utilised?” was formulated. This question, which is of more general character, was divided into three sub-questions to define the research scope and enable a systematic problem solving approach. The sub-questions were: “How can companies identify and track innovators?”, “What motivates the company’s innovators?” and “What obstacles do intra-corporate innovators perceive?” thusly addressing motivation and obstacles in general as well as failure management and innovator visibility and recognition.

The purpose of the study, in addition to solving the company’s observed problems, was related to what is described by Govindarajan and Desai (2013), who proposes that utilising the companies’ innovative capabilities is a way to drive change rather than adapt to it and that the company risk losing talented employees by not encouraging and supporting innovator initiatives. The risk of losing innovators from not handling them properly has been confirmed through this study.

6.1 IDENTIFYING INNOVATORS

For the company to be able to identify innovators, some innovator characteristics were extracted from previous literature and the initial interviews. As mentioned above, passion together with a strong desire for improvement is the main driver and most prominent characteristics for innovators, as described by the interview respondents. Furthermore, a range of characteristics, including the two above, was identified through previous literature. The innovator in this case represents an intrapreneur, why both entrepreneurial and innovator characteristics have been considered. Examples of entrepreneurial characteristics by which an innovator can be identified are proactiveness and willingness to take risk and initiative, whereas innovators have skills in association, questioning, observing, networking and experimenting. A strong common ability is opportunity perception and exploration, meaning that intrapreneurs actively seek new possibilities.

Considering the tracking of innovators, it was found to be more a concern of involving the attention and education of managers. The analysis of collected data indicates that innovators, in contrary to what the company identified on organisational level, are visible and identifiable by their managers. Managers easily identify innovators in the organisation by their passion, curiosity, stubbornness and a strong initiative. The problem is rather that the managers do not always know how to manage the creativity and initiative of an identified innovator or how to highlight the employee as an innovator towards the organisation. Hence, managers and the organisation limit the innovators’ drive and proactiveness, by not knowing how to manage and
utilise them. There is a need to implement an organisation wide system regarding the treatment and management of identified innovators and thereafter inform managers about these practices.

6.2 MOTIVATING INNOVATORS

The investigation of what is motivating intrapreneurial behaviour among employees indicated the same tendencies across the whole study of interviews, questionnaire and previous research. Generally, innovators are not motivated by extrinsic factors, such as monetary rewards and promotions, but they are rather intrinsically motivated by for example realising their own innovations. The interview respondents explained that financial rewards do not stimulate innovation, as the true driver for innovators is the passion for realising their ideas. The questionnaire indicated that the participants considering themselves to be innovators preferred intrinsic means of motivation. Four factors out of the top five highest ranked motivational factors were intrinsic, with “Self-satisfaction of seeing my own ideas become reality” ranked as most important motivator for innovators followed by “Opportunities to acquire new skills and experiences” and “Getting the opportunity (time and resources) to explore and develop my own insights and ideas”.

The identified need to better recognise innovators has been found to not mainly motivate the targeted innovator, since innovators generally do not consider recognition as the most motivating factor. The recognition of innovators is rather inspiring innovative initiatives among others who see the innovator as a role model. It will in addition communicate that it is possible to realise your innovations, and that it is an encouraged and rewarded behaviour. Hence, recognition should be used as a tool to inspire others and communicate the process rather than awarding the single employee. The individual does rather perceive an active support and guidance in the realisation process as a better driver than affirmation. This means that it is important to direct the recognition to inspire others in addition to rewarding and supporting the innovator.

Most incentives used to show gratitude for innovation efforts and achievements today are of financial character, which might attract the wrong clientele motivated by extrinsic factors, pursuing monetary rewards. A program for supporting and educating innovators should rather be utilising intrinsic motivation and efforts to both identify and reward innovators to avoid attracting those simply seeking rewards. To extend this proposition, the enablers and barriers with intrinsic tendency in Table 4.15 could be used to further encourage innovators.

6.3 MAIN OBSTACLES TO ADDRESS

The obstacles that have been observed as the ones in most need of attention differ between the questionnaire samples. The sample representing a beneficial innovation climate (Q1) did in comparison with the sample with average innovation climate (Q2) perceive all barriers at a lower level. The three barriers showing the biggest difference between these samples, hence indicating the foremost differentiating factors of a good and an average innovation climate was the perception of the barriers “Lack of flexibility, too rigid organisation, processes”, “Lack of boldness, too risk-averse organisation”, and “Lack of time and budget for innovation”, in descending order by biggest difference. These three barriers are proposed to reflect a general difference to what distinguishes a favourable innovation environment from an average innovation environment in this company setting.

Moreover, the differences in barriers between the samples including attractive contributors (Q3) and average contributors (Q4), identified through the ideation tool, were examined. The attractive contributors perceive “Lack of path for implementing more radical ideas” and “Lack of
customer and market insights” as bigger barriers, whereas the average contributors perceive “Lack of innovation goals, objectives & expectations” and “Lack of awareness and innovation skills among employees”. This indicates that the attractive contributors, which have been through the process of implementing innovations, have discovered deficiencies as to how the realisation process is conducted in regard of these subjects. In contrary, the average contributors, who have proposed ideas that have not been implemented, perceive barriers related to innovation focus and awareness.

One tough barrier for realising innovations which stem from the high risk-aversion and reliance on financial measures is lack of funding. Projects frequently fails to acquire sufficient funding internally and are not allowed to apply for funding externally. The performance measures of new initiatives are the same as for mature businesses, which result in an unbalanced competition for funding. Sykes and Block (1989) do for example suggest market share and penetration as more suitable measures in highly technological industries. Furthermore, there is a defective procedure for funding innovations, which is often done by the unit itself. This results in that if an innovation does not fit within a unit or bridges two units, there raises a conflict in which unit that should supply the funding, which often results in that the idea is not funded at all.

Time is another lacking resource, which must be addressed. The foremost problem is the high delivery pressure, where existing projects consume all available time and hence hinders experimentation and innovation. In addition to the high delivery pressure, time spent on innovation is reported as a cost and will result in a negative post in reports of the teams’ utilisation.

Cross-unit collaboration is another strong barrier. Since innovations commonly comes from the transfer of knowledge in one area to another or the combination of existing solutions (Dyer, et al., 2011), innovation is hampered. There is a need for a more natural collaboration in the daily work. The lacking collaboration will also result in a lower transparency and decreased availability to information, which is essential for innovations, as stated by Shane (2003) and confirmed in the study.

The lacking focus on learning from failures, might be a result from the organisational culture, which includes signs of risk-aversion. Failures generally do not happen in development, since the most risky initiatives are rejected. This lack of experimentation is perceived to be a problem within the organisation and one interviewee tells, “If you do not have failures, it means that you did not try enough.” This indicates that there might be many false rejections of ideas that were deemed non-beneficial, which further raise the question regarding the value of these missed opportunities. Additionally, when employees do file a retrospective evaluation, there are no processes for administering or absorbing the knowledge that has been acquired. Indications that it should be considered dangerous to your career to participate in entrepreneurial activities have not been found within the organisation. Still, there are no clear paths or processes if you want to engage in entrepreneurial activities.

6.4 IMPROVING THE UTILISATION OF INNOVATIVE CAPABILITIES

Finally, to answer the overarching question of increasing the innovative capability utilisation, the aim is to limit the aforementioned obstacles, utilise the lessons learned in how to motivate, identify and track innovators. In the attempt of improving utilisation, both the questionnaire, which included a set of questions regarding important actions, and the finalising workshop, was conducted with the aim to find key actions targeting the most critical areas.
From the questionnaire, the actions perceived as most important in order to improve the conditions for innovators differed between samples. The samples representing an environment beneficial for innovative outcomes (Q1 and Q3) perceived “Recognition by managers and the company” as to be more important compared to environments with worse innovative climates (Q2 and Q4) who perceived “Active support from managers to drive innovation projects” and “Increased manager authority to approve and allocate time and budget for innovators” to be a more important action in order to improve the innovative climate. This indicates that in order to first achieve a positive innovation environment, managers must get the mandate for approving innovation initiatives and provide sufficient support for the employees. One way to do this as a manager is to act as a champion for these innovation initiatives and actively help driving them towards realisation through raising the discussion of innovations and applying for funding. When manager support and mandate for managers is in place, it is more important to recognise innovators and their achievements to show appreciation and further improve the climate for innovation.

Three action plans were formulated in the workshop, involving necessary efforts to improve the company’s innovative capability. The three suggested actions were; a strategy for innovation execution, an incubation team supporting innovators with innovation realisation, and fostering an experimental culture. These three action plans are connected and complemented by each other. The incubation team is included in the strategy for executing innovation, whereas an experimental culture is needed in order to support alignment of the strategy with the organisation. The main learning is that the strategy needs a clear path towards implementation of innovations and clear communication of how to get funding and resources. The incubation team should be constructed as a competence pool of skilled people with a desire to work on the most ground-breaking and explorative initiatives. The culture for experimentation constitutes the foundation for fostering and growth of initiatives so that no important opportunities or discontinuities in the market are missed. The three actions proposed during the workshop are described in detail in section 4.3 Workshop.

6.5 Future Research

Further research should be directed towards how to systematic identify intrinsically driven people who are mainly seeking achievement and are driven by the outlook of reaching their goals. Another important aspect is regarding how to organise and direct these driven people towards a common goal.

A thorough examination into the theory of intrinsic or extrinsic affection of different enablers or actions, as proposed in 4.4 General Patterns, is needed to verify or reject the theory and provide deeper understanding. A better understanding could provide theorists and practitioners with a useful basis for adjusting their organisations’ climate to apply intrinsic or extrinsic motivation, and thusly attracting the right people.
REFERENCES


Appendix A – Interview Guide

To start with; we are working with an assignment from COMPANY as part of our Master Thesis from KTH Royal Institute of Technology in Stockholm. Our research topic is concerning how COMPANY should lead and support innovators internally. Innovators (the word we will use in this pilot project) are sometimes also called intrapreneurs, which are intra-corporate entrepreneurs.

When speaking about innovation it is the realisation of an idea, which is to set the idea in a context where it provides a value. It might be a product, service, process etc.

You have been identified as a person of interest for this topic. We are interested in your experience and opinion, what motivates you and if you have observed any challenges with the way COMPANY is working today regarding innovation. We have prepared some questions to guide the conversation and it will take about 45 minutes.

Is it ok if we record this conversation? The data will be kept anonymous in the report.

Respondent:
Innovator, Manager, Senior Manager – product, services, sales, supply – exit

Background (Employee Demographics)

1. What is your formal role at COMPANY today?
   a. What are your main tasks at work?
   b. Is there anything in your job description that relates to innovation or entrepreneurship?
   c. Do you have any informal roles related to innovation?

Characteristics

Now we will continue with the characteristics of innovators.

2. How would you characterize an innovator? – Identification

3. To innovator and manager: In your own opinion, which innovator skills do you possess?

4. Where do you see yourself on a scale from executor (delivery) to innovator (discovery)?

Utilization of innovators

We would like to continue with your view of innovators at COMPANY.

5. * In your opinion, what are the conditions for innovators at COMPANY (COMPANY as a whole vs. in your unit)? (rate from good to bad) WHY?

6. To what extent are innovators and their capabilities utilized at COMPANY (COMPANY as a whole vs. in your unit)? (rate from not at all to fully utilized) WHY?

7. * What are the main barriers and challenges that must be addressed to improve conditions for innovators and to boost innovation performance? Which ones are most important (top-3)?

Incentives
8. What incentives for innovation (aimed at managers vs. at innovators) are in place at COMPANY level and in your unit? – Incentive

9. To innovator and manager: What motivates you as an innovator? – Incentive
   Why would you choose to innovate rather than performing routine tasks?

10. * To manager: What motivates you as a manager to support innovators?

11. To innovator: What motivates your manager(s) to support innovators? - Incentive
    If you have an idea which you want to try out. Why would your manager allow you to do that?

Enablers

Further we would like to discuss enablers for innovation.

12. What support is there for innovation and innovators at COMPANY today (at COMPANY level and in your unit)?
   a. People (ombudsman)
   b. Processes
      Philosophies

13. * What support are you missing (support at organisational level to support managers and innovators as well as support from managers to innovators?)

14. Are there procedures for organisational learning?
    a. What happens if a project fails?
       i. Individuals perspective (Blame, Career, Promotion):
       ii. Organisational perspective (Learning procedure):

15. How can learning from failures be improved?

16. Would you like to add something?
# Appendix B – QUESTIONNAIRE

## Leading Innovators Quick Survey

INNOVATION is defined broadly as “creating value from ideas”: turning insights and ideas into successful products, services or processes that create new revenues or cost savings.

NOTE: Your contribution will be anonymous in the final report and towards COMPANY.

### To what extent do you consider yourself an innovator and/or executor?

An INNOVATOR is a person who sees things from a different perspective and challenges the ways things are usually done. Innovators use insights and explore new ideas and opportunities, and take actions to implement them.

<table>
<thead>
<tr>
<th>I consider myself an INNOVATOR</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither disagree or agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

An EXECUTOR is a delivery and performance focused person who excel at breaking down assignments into micro-tasks, make detailed plans for execution and carefully analyze the risk in projects before start-up.

<table>
<thead>
<tr>
<th>I consider myself an EXECUTOR</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither disagree or agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

### 2. To what extent are the following statements true for YOUR unit/organisation?  
(State only one answer per question)

<table>
<thead>
<tr>
<th>In your company/organisation</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither disagree or agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

### 3. To what extent do you agree with the following statements?  
(State only one answer per question)

<table>
<thead>
<tr>
<th>In your company/organisation</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither disagree or agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
ideas.
I get constructive feedback on my ideas
My manager actively supports me to realize ideas
My manager actively supports me to act on customer and market insights
I am allowed to work on promising ideas
My potential as an innovator is fully utilized
My potential as an executor is fully utilized

4. Given the current conditions for innovators in my unit/organisation, I feel:
(State one answer only)

<table>
<thead>
<tr>
<th>Very frustrated</th>
<th>Somewhat frustrated</th>
<th>Indifferent</th>
<th>Somewhat engaged</th>
<th>Very engaged</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

5. In your opinion, being an innovator can impact your career opportunities in:
(State one answer only)

<table>
<thead>
<tr>
<th>A very negative way</th>
<th>A somewhat negative way</th>
<th>No way</th>
<th>A somewhat positive way</th>
<th>A very positive way</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

6. How do you rate the overall innovation performance of COMPANY? (State one answer only)

<table>
<thead>
<tr>
<th>Poor</th>
<th>Below average</th>
<th>Satisfactory</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

7. What kinds of motivators are most important to YOU personally?
Select and prioritise 5 motivators.

Flexibility/autonomy to choose what, when and how to do my work
Self-satisfaction of seeing my own ideas become reality
Getting the opportunity (time and resources) to explore and develop my own insights and ideas
Opportunities to acquire new skills and experiences
Promotion/advancement in the organisation
Contributing to the larger purpose of COMPANY (e.g. COMPANY VISION)
Getting sufficiently challenging assignments
Increased salary or other monetary rewards
Recognition from direct and senior managers
Recognition from colleagues, team members

8. Please add any additional motivators, not previously mentioned.

9. According to your experience of COMPANY, to what extent do you agree that the following factors are BARRIERS for innovation? (State only one answer per question)

<table>
<thead>
<tr>
<th>Lack of time and budget for innovation</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither disagree or agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of support, interest and authority from immediate managers</td>
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<tr>
<td>Lack of awareness and innovation skills among employees</td>
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<tr>
<td>Lack of inspiring innovators as role models</td>
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</tbody>
</table>
Lack of process, tools and methods for innovation
Lack of appropriate indicators and incentives
Lack of innovation goals, objectives and expectations
Lack of path for implementing more radical ideas
Lack of cross-unit collaboration, organisation working in silos
Lack of flexibility, too rigid organisation, processes
Lack of boldness, too risk-averse organisation
Lack of roles and responsibilities for innovation
Lack of customer and market insights

10. Please add additional barriers, not previously mentioned.

11. How important would the following actions be for improving the conditions for INNOVATORS? (State only one answer per question)

<table>
<thead>
<tr>
<th>Action</th>
<th>Not important</th>
<th>Low importance</th>
<th>Neutral</th>
<th>Important</th>
<th>Very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competence development and training programs for innovators</td>
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<tr>
<td>Establish a career path for innovators</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Incentives and reward programs for innovators</td>
<td></td>
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</tr>
<tr>
<td>Annual COMPANY Top Innovator Award presented by the CEO</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Increased manager authority to approve and allocate time and budget for innovators</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation performance measures/targets at Group level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active support from managers to drive innovation projects</td>
<td></td>
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<tr>
<td>Recognition by managers and the company</td>
<td></td>
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<tr>
<td>Innovation as formal part of IPM with manager</td>
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<tr>
<td>Established routines for learning from failures</td>
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<tr>
<td>Cross-functional networking, internally and externally</td>
<td></td>
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<tr>
<td>Clear channels for insights and ideas</td>
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<td></td>
</tr>
</tbody>
</table>

12. Please add additional actions, not previously mentioned.

13. Are you an innovator or an executor? Take this optional 5 minute test to find out. The
**Assessment is based on the book Innovators DNA, by Dyer J., Gregersen H. and Christensen C. M.**

(State one answer only)

<table>
<thead>
<tr>
<th>Take assessment</th>
<th>No, thanks</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑</td>
<td>☑</td>
</tr>
</tbody>
</table>

**14. To get a snapshot of your discovery-delivery skills profile, take the following self-assessment survey. Rank your answers from Strongly Disagree to Strongly Agree**

(State only one answer per question)

<table>
<thead>
<tr>
<th>frequently, my ideas or perspectives diverge radically from others’ perspectives.</th>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Disagree or Agree</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am very careful to avoid making any mistakes in my work.</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>I regularly ask questions that challenge the status quo.</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>I am extremely well organised at work.</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>New ideas often come to me when I am directly observing how people interact with their products and services.</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>I must have everything finished “just right” when completing a work assignment</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>I often find solutions to problems by drawing on solutions or ideas developed in other industries, fields, or disciplines</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>I never jump into new projects and ventures and act quickly without carefully thinking through all of the issues.</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>I frequently experiment to create new ways of doing things.</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>I always follow through to complete a task, no matter what the obstacles.</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>I regularly talk with a diverse set of people (e.g., from different business functions, organisations, industries, geographies, etc.) to find and refine new ideas.</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>I excel at breaking down a goal or plan into the micro tasks required to achieve it.</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>I attend conferences (On my areas of expertise as well as unrelated areas) to meet new people and understand what issues are facing them.</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>I pay careful attention to details at work to ensure that nothing is</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
</tbody>
</table>
overlooked.
I actively seek to identify emerging trends by reading books, articles, magazines, blogs, and so on.
I hold myself and others strictly accountable for getting results.
I frequently ask "what if" questions that provoke exploration of new possibilities and frontiers.
I consistently follow through on all commitments and finish what I’ve started.
I regularly observe the activities of customers, suppliers, or other organisations to get new ideas.
I consistently create detailed plans to get work done.

Personal Information

15. What is your main DEPARTMENT? (State one answer only)

16. What is your FUNCTION? (State one answer only)

17. How long have you been employed at COMPANY? (State one answer only)

18. Position (State one answer only)

19. Gender (State one answer only)

20. Country

21. Enter your email address IF you want us to send you the result of the main survey and your self-assessment (if relevant). NOTE: Your contribution will be anonymous in the final report and towards COMPANY.

Thank you for participating!
Appendix C – Respondent Characteristics

From the 313 questionnaire responses, the following respondent characteristics can be derived.

Country

Organisational Level

Employment Time

Gender

- Employee; 279
- Senior Manager; 7
- Line Manager; 27

- More than 10 years, 108
- 1-2 years; 40
- Less than a year; 8

- Female; 64
- Male; 249
- 6-10 Years; 80
- 3-5 Years; 77
Appendix D – MOTIVATION, BARRIER AND ENABLER CORRELATION

The table showing correlation of statistics (on the next page) is divided upon participant answers on motivational factors, barriers and enablers to innovation. The correlation is a calculation of how well the answer on two factors matches each other.

The colours in the table are based on a conditional formatting showing a red colour for low correlation, yellow for medium and green for high. The colour is not to be compared between the bolded boxes. The boxes will be referred to as [row factor x column factor], for example [B2 x MI6] implies the correlation between “Lack of cross-unit collaboration, organisation working in silos” and “Opportunities to acquire new skills and experiences”, which refers to the value 0.006, as seen on next page.

An index of the questions is provided to the right.
Table of correlations between motivational factors, barriers, and enablers of innovation.

<table>
<thead>
<tr>
<th>MI6</th>
<th>MI6</th>
<th>MI6</th>
<th>MI6</th>
<th>MI6</th>
<th>MI6</th>
<th>MI6</th>
<th>MI6</th>
<th>MI6</th>
<th>MI6</th>
</tr>
</thead>
<tbody>
<tr>
<td>MI6</td>
<td>0.075</td>
<td>MI1</td>
<td>0.215</td>
<td>0.245</td>
<td>MI2</td>
<td>0.085</td>
<td>0.300</td>
<td>0.067</td>
<td>MI3</td>
</tr>
<tr>
<td>MI4</td>
<td>0.022</td>
<td>0.256</td>
<td>-0.088</td>
<td>0.083</td>
<td>0.091</td>
<td>ME1</td>
<td>0.143</td>
<td>0.259</td>
<td>-0.250</td>
</tr>
<tr>
<td>MI4</td>
<td>0.129</td>
<td>-0.076</td>
<td>-0.152</td>
<td>0.187</td>
<td>-0.153</td>
<td>-0.130</td>
<td>0.034</td>
<td>-0.090</td>
<td>ME4</td>
</tr>
</tbody>
</table>

| B1 | 0.049 | 0.100 | 0.006 | 0.020 | 0.060 | 0.078 | 0.013 | 0.127 | 0.001 | 0.003 |
| B2 | 0.006 | 0.029 | -0.034 | 0.082 | 0.067 | 0.013 | 0.064 | 0.032 | 0.049 | 0.008 |
| B3 | 0.065 | 0.012 | 0.005 | 0.026 | 0.038 | 0.004 | 0.025 | 0.063 | 0.066 | 0.014 |
| B4 | 0.030 | 0.089 | 0.030 | 0.000 | 0.127 | 0.016 | 0.034 | 0.108 | 0.077 | 0.010 |
| B5 | 0.029 | 0.230 | 0.194 | -0.103 | 0.003 | 0.069 | 0.022 | 0.011 | 0.001 | 0.070 |
| B6 | 0.092 | 0.019 | 0.033 | 0.076 | 0.020 | 0.025 | 0.015 | 0.088 | 0.049 | 0.014 |
| B7 | 0.054 | 0.132 | 0.089 | -0.053 | 0.040 | 0.098 | 0.146 | 0.023 | 0.003 | 0.042 |
| B8 | 0.025 | 0.157 | 0.118 | -0.046 | 0.013 | 0.110 | 0.101 | 0.040 | 0.005 | 0.029 |
| B9 | 0.075 | 0.045 | 0.051 | 0.113 | 0.054 | 0.086 | 0.039 | 0.060 | 0.008 | 0.017 |
| B10 | 0.018 | 0.035 | 0.056 | 0.009 | 0.072 | 0.151 | 0.036 | 0.030 | 0.029 | 0.006 |
| B11 | 0.037 | 0.110 | 0.132 | -0.123 | 0.081 | 0.064 | 0.094 | 0.106 | 0.011 | 0.039 |
| B12 | 0.089 | -0.024 | 0.034 | 0.082 | 0.015 | 0.008 | 0.098 | 0.022 | 0.016 | 0.135 |
| B13 | 0.036 | 0.087 | 0.070 | -0.125 | 0.035 | 0.097 | 0.129 | 0.007 | 0.069 | 0.006 |

| E1 | 0.006 | 0.057 | 0.058 | 0.111 | 0.026 | 0.129 | 0.039 | 0.062 | 0.018 | 0.162 |
| E2 | 0.008 | 0.058 | 0.063 | 0.122 | 0.090 | 0.174 | 0.029 | 0.103 | 0.049 | 0.072 |
| E3 | 0.060 | 0.064 | 0.106 | -0.008 | 0.015 | 0.068 | 0.082 | 0.139 | 0.099 | 0.009 |
| E4 | 0.037 | 0.159 | 0.150 | 0.099 | 0.097 | 0.189 | 0.114 | 0.123 | 0.001 | 0.107 |
| E5 | 0.024 | 0.226 | 0.190 | 0.079 | -0.018 | 0.025 | 0.222 | 0.073 | 0.042 | 0.140 |
| E6 | 0.032 | 0.042 | 0.161 | 0.101 | 0.112 | 0.120 | 0.007 | 0.062 | -0.114 | 0.115 |
| E7 | 0.122 | 0.048 | 0.168 | 0.014 | 0.102 | 0.128 | 0.050 | 0.105 | -0.078 | 0.147 |
| E8 | 0.064 | 0.029 | 0.048 | 0.011 | 0.036 | 0.074 | 0.179 | 0.081 | -0.016 | 0.114 |
| E9 | 0.082 | 0.044 | 0.105 | -0.063 | 0.067 | 0.109 | 0.078 | 0.029 | 0.080 | 0.130 |
| E10 | 0.027 | 0.013 | 0.083 | -0.009 | 0.065 | 0.111 | 0.002 | 0.151 | 0.020 | 0.000 |
| E11 | 0.044 | 0.063 | 0.184 | -0.018 | 0.006 | 0.089 | 0.150 | 0.073 | 0.014 | 0.093 |
| E12 | 0.017 | 0.016 | 0.142 | 0.005 | 0.046 | 0.138 | 0.187 | 0.178 | 0.053 | 0.003 |