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Organization of exploration

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Abstract

This assignment focuses on how fast growing organizations, also known as gazelle firms, organize exploration. Innovation is usually of considerable importance for companies and their growth ambitions, however exploitative activities must also be performed. Exploration and exploitation are two conflicting activities. Maintaining a good balance between them is necessary for organizational success.

In order to research how gazelle firms organize exploration the evolution of exploration within the organizations is examined. At the internal side of firms the structure regarding exploration is observed and regarding the external side the firm`s relationships with other companies is investigated. The data collection is performed by several case studies of Dutch firms found in the internet technology sector. By using the “2009 Gazellen top 100” of the Financieel Dagblad a selection is made of fast growing firms in the internet technology sector. With these firms face to face interviews were performed with the CEO and also employees in the organization. The investigation of the data results is performed by a within case analysis for each firm and cross case analysis.

It is found that several forms of ambidexterity are linked with exploration. The firms where exploration plays an important role, usually have a form of ambidexterity. It is also found that the use of external partnerships is important for organizations that are engaged significantly in exploration. The size of organizations is an important characteristic. Large size firms more often have ambidextrous forms than small size firms. It can be argued that because of their limited R&D facilities the use of external partnerships is more important for small size companies than for large size companies, though collaboration with other organizations is also essential for large size firms.

Samenvatting

In deze opdracht wordt onderzocht op welke manier snel groeiende organisaties, bekend als gazelle bedrijven, exploratie organiseren. Innovatie is meestal belangrijk voor bedrijven die snelle groei willen doormaken, maar exploitatie activiteiten moeten ook worden uitgevoerd. Exploratie en exploitatie zijn twee conflicterende activiteiten. Het verkrijgen van een goede balans tussen deze activiteiten is nodig voor succes als organisatie.

Om te onderzoeken hoe gazelle bedrijven exploratie organiseren wordt de evolutie van exploratie in de organisatie geanalyseerd. Aan de interne zijde van de bedrijven wordt de exploratie structuur onderzocht en aan de externe kant worden de relaties met andere bedrijven van de organisatie geobserveerd. De data verzameling wordt gedaan middels case studies van Nederlandse bedrijven gesitueerd in de internet technologie sector. Face to face interviews zijn uitgevoerd met de CEO en andere werknemers binnen de organisaties. Bij het onderzoeken van de gevonden data resultaten is een within case analyse voor elk bedrijf uitgevoerd en een cross case analyse voor een vergelijking tussen de case bedrijven.

De bevindingen zijn dat verschillende vormen van ambidexterity bijdragen aan exploratie. De bedrijven waarbij exploratie een belangrijke rol speelt, hebben meestal een vorm van ambidexterity. Verder is het aangaan van samenwerkingsverbanden met andere organisaties belangrijk voor bedrijven die exploratie ambities hebben. De organisatie grootte is een belangrijke factor. Grote bedrijven hebben vaker vormen van ambidexterity dan kleine bedrijven. Er kan worden gesteld dat, door hun gelimiteerde R&D faciliteiten, het voor kleine bedrijven aangaan van samenwerkingsverbanden belangrijker is dan voor grote bedrijven, echter het belang van collaboratie is ook essentieel voor grote organisaties.

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1. Introduction

From the middle of the 90s, interest in the analysis of very fast growing companies known as "gazelles" has grown considerably. There are two main characteristics of gazelle firms; (1) they are companies that experience a strong growth in their size, and (2) this strong growth is made in a very short period of time. Gazelle firms are very important and interesting for business and society because they create a great number of new jobs (Storey, 1984; Barkham et al, 1996). These companies are of particular interest to academics and practitioners because rapid growth is often an indication of market acceptance and firm success (Fesser & Willard, 1990). By studying fast growth firms, researchers can help all firms better understand the attributes associated with firm growth. Rapid growth can be a problem for companies. How do you manage such growth? According to research (Ivey Institute for Entrepreneurship, 2000) the primary reason that fast-growing firms may struggle or fail is not increasing demand for their products, but their inability to perform the countless tasks required to continue rapid expansion. Many of today's business leaders experience the great concern of getting it all done.

The exploration strategy is a fundamental aspect of gazelle firms. The major problem that organizations must deal with are the conflicting demands of exploitation and exploration. A main focus on exploitation may be functional for organizations in a stable not much changing environment within a given technology trajectory or for existing customers. However this exploitation focus reduces exploration and responsiveness to new customer segments (Henderson et a l , 1998; Sterman, Repenning & Kofman, 1997). In fast changing unstable markets organizations need exploration to survive. Some authors (e.g. Levinthal & March, 1993; Leonard Barton, 1995; Beckman, 2006) suggest that, within fast-growing firms, it is likely that success traps emerge, which cause exploitation to drive out exploration. Other scholars (e.g. Nohria & Gulati, 1996; Damanpour 1992), though, provide indications that fast growth allows for increase of resources, knowledge and organizational slack, which in-turn stimulates exploration.

In this Bachelor thesis the goal is to research how gazelle firms organize exploration. This will be done by a multiple case study of gazelle firms in the ICT sector. In order to find out how gazelle firms organize exploration it is useful to first get a good impression of the intensity of exploration that is currently present at gazelle firms and how this intensity of exploration evolves over time in gazelle firms. In this exploration analysis I will make use of the exploration patterns typology defined by Faems et al (2009). When there is a good view of the exploration situation the focus will be placed on how the exploration is organized by gazelle firms.

When it comes to the internal organization of exploration the structure of the organization is an essential attribute. A special type of organizational structure that is well described in the innovation literature is the ambidextrous structure. Numerous scholars (e.g., Benner and Tushman, 2003; Jansen et al., 2006; O`Reilly and Tushman, 2004) point to structural ambidexterity as an effective organizational strategy to address the tension between exploitation and exploration. In this research an effort will be made to find out in which ways gazelle firms make use of structural ambidexterity.

Although internal characteristics of the organization are important for successful innovation and exploration, many authors emphasize the need for open innovation these days. Collaboration between organizations creates many new possibilities that can supplement internal innovation capabilities. A narrow focus may prevent the organization from spotting new possibilities for successful product development (Tidd, 1995, p.307). External partnerships have the advantage that organizations with insufficient capabilities or knowledge about something can acquire them from outside (Cattani, 2005). By creating alliances, organizations can obtain necessary knowledge and technology. Besides the contribution of strategic alliances to the knowledge base it also allows an organization to share (financial) risk and resources for exploration. To conclude in order to organize exploration the use of external partnerships is often considered to be essential. Therefore in this research there is also the attempt to discover in which ways gazelle firms cooperate with external parties.

2. Central research question and sub questions

The central research question is:

- In which ways do gazelle firms implement ambidexterity or cooperate with external parties to organize exploration?

Sub questions

The subject of this thesis is exploration. In order to get a good picture of the exploration situation the first thing to do is to examine how much exploration is present in the gazelle firms and how this exploration evolves over time. Therefore the first sub question is:

- What exploration patterns can be found in the growth trajectory of gazelle firms?

After there is a good view of the exploration situation, the following step will be to observe how this exploration is organized. Regarding the internal organization, I intend to focus on structural ambidexterity. As a result the next sub question will be:

- Which ways of structural ambidexterity can be observed in gazelle firms?

Besides the internal organization the use of external partnerships is considered to be important. So the next question is:

- Which ways of cooperation with external parties can be observed in gazelle firms?

3. Theoretical framework

In this chapter, an overview of the theory that will be used in this research is given.

3.1 Exploration and exploitation

The main subject of this thesis is exploration. In the innovation practice we can identify explorative and exploitative activities (Yalcinkaya, Calantone & Griffith, 2006). The main purpose of exploration is to create new streams of knowledge as the source of new or different technologies and, as a result, of new products and sources of competitive advantage (Ireland& Webb, 2007, p. 54). Exploration can be explained as the set of organizational characteristics or activities undertaken in order to search for new knowledge and possibilities that can be applied to the development of new technologies, products, processes or organizational changes. Exploitation can be defined as “the refinement and extension of existing competencies, technologies, and paradigms exhibiting returns that are positive, proximate, and predictable” (March, 1991, p. 85).
Maintaining a good balance between exploration and exploitation is necessary for organizational survival and prosperity (March 1991, p. 71) because too little attention to either exploration or exploitation reduces organizational performance (Levinthal & March, 1993). Organizations must balance both activities to engage in sufficient exploitation to ensure current viability and at the same time, dedicate enough energy to exploration to ensure its future viability.
In fast changing environments, the ability to respond to the environment is necessary to survive. In high technology industries competitive advantage is achieved by the continuous introduction of new possibilities because of short product life cycles succession technology (Brown & Eisenhardt, 1995).

3.2 The success trap

A major problem that many organizations face during their evolutionary trajectory of exploration is the success trap. Developing a new product of technology becomes less attractive when the organization is succeeding with a current product. They often get into a vicious circle of successful exploitation that leads to more exploitation and less exploration that might result in a success trap (Levinthal& March, 1993). This situation, in which exploitation is favored over exploration, is called the success trap (Levinthal& March, 1993). The problem is that customers need change and are sometimes hard to predict. Organizations that fail to take opportunities create a risk by letting the opportunity slip and, as a result, a product or technology may be introduced by competitors. Even though the focus on exploitation may seem attractive in the short term, it creates problems for the future and may even lead to self destruction for the organization in the long term (Benner & Tushman, 2003; March, 1989).

3.3 Four different exploration patterns

The first part of this thesis will be an observation of the evolution of exploration within the selected organizations. In order to perform this, I will use the four exploration patterns that occur among gazelle firms found by Faems, Lamers and Visscher (2009): the recovery exploration pattern, the non-recovery exploration pattern, the punctuated exploration pattern and the steady exploration pattern. These patterns are based on the dichotomy of exploitation and exploration. A short description:

- Steady exploration pattern: gazelle firms that keep on exploring with the same quantity.
- Recovery exploration pattern: gazelle firms that start exploring at a much lower level, because of the exploitation demands, but after some time they increase their exploring activities again.
- Punctuated exploration pattern: gazelle firms where the recovery of exploration is only temporarily.
- Non-recovery exploration pattern: gazelle firms where this recovery of exploring activities does not occur.

3.4 Ambidexterity

After there is a good view of the evolution of exploration, the next step is to find out how the organizations organize these exploration activities. An important factor in the organizing process is the organizational structure. Ambidexterity is a term that often comes across in the innovation literature. Benner and Tushman (2000) write about the ambidextrous organization. It is useful to refer to their definition as structural ambidexterity to distinguish it from the contextual ambidexterity defined by Gibson and Birkenshaw (2004). Ambidexterity is about organizations in turbulent environments that must deal simultaneously with the inconsistent demands of exploitation and exploration. Process management capabilities speed exploitation and efficiency. These capabilities allow organizations to survive in the short run, but at the same time they reduce the exploration required for longer-term adaptation. Process management activities must be buffered from exploratory activities and ambidextrous organizational forms give the complex contexts for these conflicting activities to coexist. Ambidextrous organizations consist of multiple tightly coupled subunits that are themselves loosely coupled with each other.
The following scheme (O`Reilly & Tushman, 2004) shows the situation of the 2 conflicting businesses.

Alignment of:	**Exploitative business**	**Exploratory business**
Strategic intent	Cost, profit	Innovation, growth
Critical tasks	Operations, efficiency, Incremental innovation	Adaptability, new products, Breakthrough innovation
Competencies	Operational	Entrepreneurial
Structure	Formal, mechanistic	Adaptive, loose
Controls, rewards	Margins, productivity	Milestones, growth
Culture	Efficiency, low risk, Quality, customers	Risk taking, speed, flexibility, Experimentation
Leadership role	Authoritative, top down	Visionary, involved

In order to align the exploitative side and the exploratory side good leadership is needed. Different alignments held together through senior-team integration, common vision and values, and common senior-team rewards.

Several forms of structural ambidexterity can occur. For example their may be differences in the length of time. Structural ambidexterity can be a temporal organizational choice as well as a permanent organizational situation. Therefore temporal separate explorative structures and permanent separate exploration units can be seen in organizations.

A special type of structural ambidexterity is the so called Menlo Park structure. This is the structure that Edison applied in the nineteenth century to manage his Menlo Park. At Menlo Park, Edison, together with a team of engineers, continuously experimented in order to come up with new applications for the telegraph, electric light, railroad, and mining industries. When an experiment looked promising, 'Edison would not hesitate to incorporate a new company and build a team to pursue it' (Hargadon, 2003: 16). As a result, a collection of companies emerged that were dedicated toward exploiting the innovations that came out of the Menlo Park lab. In modern times this type of structural ambidexterity can still be seen in organizations.

Contextual ambidexterity:
Gibson and Birkenshaw define (2004) contextual ambidexterity as the behavioural capacity to simultaneously demonstrate alignment and adaptability across an entire business unit. Alignment refers to unity among all the patterns of activities in the business unit; they are working together toward the same goals. Adaptability means the capacity to reconfigure activities in the business unit quickly to meet changing demands in the task environment. The difference between the concept of contextual ambidexterity and the traditional concept of structural ambidexterity is that the former is best achieved not through the creation of double structures, but by constructing a set of processes or systems that enable and encourage individuals to make their own judgements regarding how to divide their time between conflicting demands for alignment and adaptability (Duncan, 1976; McDonough & Leifer, 1983; Tushman & O'Reilly, 1996).
Once contextual ambidexterity has been realized, every individual in a unit can deliver value to existing customers in his or her own functional area, but at the same time every individual is alert for changes in the task environment, and acts accordingly.

Punctuated equilibrium:
According to the punctuated equilibrium model the evolution of successful organizations is characterized by long periods of incremental change that are punctuated by major discontinuities (Schulze, 2009). In the logic of the punctuated equilibrium model, exploitation and exploration can be considered two ends of a continuum. Long periods of exploitation are interrupted by short periods of exploration. In the ambidexterity model, contrary to the punctuated equilibrium model, exploitation and exploration are not considered mutually exclusive ends of a continuum. In a situation of ambidexterity exploitation and exploration coexist at the same time.

3.5 External partnerships

Another important factor in the organizing process of exploration is the use of external partnerships. Firms collaborate with each other for many different reasons. Examples include:
- alliance as instruments used by organizations to acquire know-how and to learn new skills that reside within other firms
- formation of coalitions to pay the costs and share risk when they undertake high-cost (capital or development intensive) projects or very speculative strategic initiatives (Hagedoorn, 1993).
- the opportunity of bringing together complementary assets owned by different companies.
- the resources obtained from an coalition partner can facilitate a firm's efforts to change its competitive position (Kogut, 1988).

In modern times technology has become so complex that usually it cannot be handled by individual firms alone (Bougrain & Haudeville, 2001). Scientific and technical knowledge is scattered among a large quantity of people. Often its acquisition needs to rely on groups which interact through networks. Firms are working together to achieve more innovation than they could accomplish on their own.

Chesbrough defines (2003) the concept of open innovation as opposed to closed innovation. In closed innovation, a firm generates, develops and commercializes its own ideas. This philosophy of self-reliance dominated the R&D operations of many leading industrial corporations for most of the 20th century.
In the model of open innovation, a firm commercializes both its own ideas as well as innovations from other companies and seeks ways to bring its in-house ideas to market by deploying pathways outside its current businesses. In this context firms increasingly acquire technologies from external sources.
Now often the “open innovation” model is being advertised as a greater path for achieving long-term success. However some authors like for example Torkkeli, Kock and Salmi are willing to debate this (2009). They identified and analyzed (2009) parameters that determine whether open or closed forms of innovation management are most appropriate for a specified firm.

When we observe partnerships two forms of external relationships can be distinguished: vertical relationships, for example with client and suppliers, and horizontal relationships with competitors and organizations that can offer complementary knowledge (Tidd, 1995, p 316). Since explorative activities require substantial R&D, collaborations with clients and suppliers are less effective for exploration (Tidd, 1995; Christensen & Overdorf, 2000).

Exploration collaborations can take many forms. In the classification of these partnerships the following attributes are essential:
- Temporary project based versus long-term structural arrangements
- Amount of resource sharing, only information sharing versus significant resources. (Technology, R&D, resources, investment costs etc)
- Low or high levels of interaction
- Specific and limited purpose or broad mission
- Low level of risk or high risk
- Independence or interdependent organizations
- Low or high organizational costs

3.6 Conclusion theoretical framework

The framework has selected several fundamental concepts for this research. First of all, an organization has to perform both exploration as well as exploitation in order to stay competitive. The success trap, the situation in which exploitation is favored over exploration, is an important threat for organizations. Theory regarding the evolution of exploration in gazelle firms was found in the form of the work of Faems et al. Faems et al (2009) define four different exploration patterns that occur among gazelle firms; the steady exploration pattern, the recovery exploration pattern, the punctuated exploration pattern and the non-recovery exploration pattern. On the internal organizational side it was found that structural ambidextrous forms can differ from each other in the length of time. The Menlo Park structure is a special type of structural ambidexterity. Besides the classic structural type, ambidexterity can also have a contextual form. Regarding external partnerships differences occur in the length of time, the amount of resource sharing, the level of interaction, the level of risk involved, the degree of interdependence, the costs and type of mission. From a contingency perspective organizations have to decide which type of partnerships fits best with their organizational goals.

4. Methodology

4.1 Research design

In this research the goal is to acquire knowledge about the presence and organization of exploration at Gazelle organizations which are functioning in the Internet Technology sector. This is been carried out through case studies. Case studies are used to get a detailed contextual analysis of a limited number of events or conditions and their relationships. It is a research method used to examine contemporary real-life situations and provide the basis for the application of ideas and extension of methods (Eisenhardt, 1989).

The most important criticism against case studies is that the small number of cases that leads to limited reliability or generalizability of findings. Another problem is the position of the researcher in case studies. Due to the intense and constant exposure to the study of the cases it could bias the findings. But, the possibility to get more knowledge about a specific phenomenon makes case studies very suitable for more explorative studies (Yin, 1981) such as this one. The validity and reliability of this research is secured by the:

- Use of multiple respondents
- Use of multiple cases
- Use of multiple data sources
- Selection of respondents

The possibility of using multiple sources and techniques in the data gathering process is one of the most important strengths of the method of using case studies . Because the goal is to generate knowledge, several sources can be used to obtain it. The methods used for obtaining and analysing data are based on the research questions. This data can be qualitative, which is mostly the case, but the use of quantitative data or a combination of both is possible as well (Yin, 1981).

4.2 Data collection

In this research qualitative data is used. Qualitative data is practical for understanding the rationale or the theory underlying the relationships revealed in the quantitative data (Jick, 1979 in: Eisenhardt, 1989, p 538). The use of several data sources, called triangulation, also leads to more reliable results (Eisenhardt, 1989; Meredith,1998). The main question pertains to the generation of knowledge concerning the presence of exploration and how this is organized by gazelle organizations in the internet technology industry.
In this research a qualitative approach was chosen because of the lack of prior research on exploration in internet technology developing organizations since qualitative data is useful for understanding the how and why of the various situations. Qualitative data is therefore used to gain knowledge on which decisions organizations make regarding investments and organization of exploration, and why these decisions are made. Finding out the underlying rationale is the aim (Babbie, 2004).

Interview
The gathering of data in this research is mostly done by carrying out interviews with fast growing organizations. In case studies interviews are a fundamental source of information (Yin, 1984; Voss et al, 2002). As case studies often address human or social affairs, research should be reported and interpreted through the eyes of a specific, well informed respondent who can give information on that affair (Yin, 1984, p. 92).

The interviews are carried out face-to-face and they are held in a semi structured manner. For the structure of the interview, a funnel model is used (Voss et al, 2002, p. 205). In the start of the interview questions are open- ended to tempt the respondent to give an overall picture of exploration in the organization and the response gives points for further questioning about the reasons for certain choices. When the interview progresses the questions become more specific and detailed (Voss et al, 2002, p. 205). An open-ended interview protocol allows to explore areas that come to light during the interview (McCutcheon& Meredith, 1993). Depending on how comprehensive the respondent’s answers to the open questions are, more specific questions were asked to get more detailed information about that subject area.

Respondents
The aim of this research was to interview two persons of each case organization. With two of the three case organizations (Company-A, Company-B) this succeeded. With the third case organization (Company-C) it was only possible to held one interview with the CEO because of the lack of time of the organization.

Interviews with the CEO`s of each case organization were carried out. With two of the three cases also an interview with an other person in the organization was done. It was chosen to interview the CEO since in order to understand the thought processes underlying major decisions made in the field of exploration, it is essential to incorporate the perspectives of senior business and R&D executives (Saberwahl, 2001). In this study the managerial perceptions of the CEO are used since he is responsible for setting, to a significant degree, the strategic actions of the organization, as well as the responsibility for guiding actions that will realize those plans (Gioia &Chittipeddi, 1991, p. 434). The CEO is involved with the decision making regarding structure, strategy and allocation of resources and investment decisions which all relate to exploration. Consequently, he is capable to explain the thought behind the choices that are made concerning investments and the organization of exploration. In this study relatively young and small organizations are observed where the CEO is usually the founder of the organization. The respondent has experienced the development of the organization and is able to answer questions concerning to the growth and changes of the organization, which contribute to the validity.

A way to test the answers obtained during the interview is to choose respondents who have different perspectives (Yin, 1984). Therefore, interviews are held with the CEO and an other person working in the organization since they have a different roles and responsibilities in the strategic management of the organization. To select the person for the second interview, the organizations were asked who was available and had time to be interviewed. In one case it was the SEO and Online Marketing worker and in the other case it was the Communication and PR worker.

4.3 Sample Design

Sample selection

In the selection process of the cases two prior conditions were used resulting from the goal of this research formulated from the research objective and problem definition of the first chapter:

- The organization has to have experienced fast growth
- The organization operates in the internet technology industry

To select internet technology firms with fast growth, the "FD Gazellen 100 of 2009" by "Het financieel dagblad" was used. This is a list of the 100 fastest growing large, medium and small organizations. From this list of 100 organizations, a selection of organizations that develop internet technology was made.

When organizations from one industry are selected, their exploration behaviour can be compared among the various organizations within the same industry. If this was not done, it would be difficult to compare the organizations and draw valid conclusion from such a small sample.

The choice to focus on organizations in the internet technology industry has several reasons. The first reason is the conflicting conditions under which these organizations operate. Fast growth often leads to increasing complexity and new management and development issues, which could decrease exploration.

In industries that are characterised by high technology, exploration is of significant importance for the survival of firms, and a decrease in it could lead to serious problems. In view of the fact that research by Delmar and others (2003) showed that fast growing organizations can mainly be found in knowledge intensive, high technology industries, organizations that have both characteristics are interesting for research.

In these conditions one of the most noticeable industries is the internet technology industry.

Response
From the 8 organizations that were contacted, 3 organizations were willing to participate in this research. 4 organizations answered they did not have time to participate and 1 organization was not interested to take part.

4.4 Operationalization

In this chapter an explanation will be given how the interview is designed in order to give answers to the research question. The research question:
In which ways do gazelle firms implement structural ambidexterity or cooperate with external parties to organize exploration?
The question includes two questions:
- Which ways of structural ambidexterity can be observed in the organizations.
- Which ways of cooperation with external parties can be seen.

As has been pointed out in the Central Research Question part, firstly an examination of the exploration situation and how this exploration evolves over time will take place. In the research the time dimension is important. To examine the exploration situation firstly a question will be asked on how the balance between exploration and exploitation is at the moment. An important indicator for measuring the attention towards exploration is by observing how much of the budget is spend on explorative activities. Therefore the question is designed on how the budget is divided over the two types of R&D projects (explorative and exploitative activities) Absolute measures would not be useful in this research because it will not reveal value or share exploration has in the organization. Therefore percentages are used instead of absolute numbers. Because we also want to know how this balance evolves over time also a question will be dedicated on this aspect.

To research how the exploration evolves over time the four exploration patterns that occur among gazelle firms found by Faems et al (2009) will be used. In the observation process which of the four exploration patterns fits with the selected gazelle firm, several questions will be asked to determine this. These questions are about whether or not there was a decline of exploration during the initial stages of the growth trajectory of the organization and how the exploration emphasis continued or not at the more mature stages of the growth trajectory. After having the answers to these questions of the respondent we will have an idea which of the four exploration patterns of Faems et al (2009) fits with the Gazelle firm. In order to have more certainty whether this idea is accurate, the respondent will be shown the figure with the different exploration patterns of Faems et al (2009), and him or her will be asked which pattern according to him/her fits with the exploration evolution in their organization.

The next part of the interview is dedicated towards the internal organization of exploration. In this part we want to know what sort of internal structures the selected organizations use. And more specifically do the selected organizations have an ambidextrous structure and how can this ambidextrous structure be described. In order to do so first a general question will be asked on how exploration is organized in their organization. In this way the respondent can give a general answer on what sort of structure their organization uses. After this we will probably have a general view, so with the next question we are going into more detail by asking whether exploitative activities and exploratory activities are separated from each other in different subunits in the organization. With this approach I try to find out whether the Gazelle firm uses an ambidextrous structure. The respondent will also be asked to explain why they did choose this type of structure, and if the organization does not have structural separation the respondent will be asked to motivate this decision. Because the evolution over time is important in this research the respondent will also be asked how their structure has changed over time and how they think it will change in the future and a motivation of their decisions.

The following part of the interview is about the external side of the exploration organization process. In this part I want to know in what way the selected Gazelle firm works together with external parties regarding the exploration organization process. In order to do so, I will ask them specifically on how the organization makes use of external relationships with other organizations. After the respondent has given an answer to this question, I will give some examples of possible collaborations in the literature and ask the respondent whether they apply to the organization or not, and ask the respondent for a motivation. This in order to get a good picture on why or why not Gazelle firms make use of certain sorts of collaborations with other organizations. The time dimension is important so a next question will be asked on whether or not there have been changes in relationship with other organizations over the years of the existence of the organization.

Finally the interview finishes with a question regarding future plans or ideas of the organization regarding exploration.

4.5 Data analysis

This section describes how the results from the interview are processed and analysed to answer the research question. First, it explains how the individual cases are analyzed. After that it looks at how the cross case analysis is performed.

Within case analysis
In the within case analysis there are detailed reviews of each specific case. The objective is to get familiar with the case as a standalone entity in order to indentify the unique patterns of each case, before generalization across cases is performed (Eisenhardt, 1989).
First the abundant data collected in the interviews was reduced to extract the relevant information that is relevant for the research. The data of the interview was transcribed, based on the notes and the recorded interviews.

The structure starts with an introduction that gives general information about the organization. It describes the core product, and the development of the organization. The analysis continues with the description of the selected subjects: the status and evolution of exploration at the organization, the organizational structure and the external partnerships of the organization. Statements of the respondents are used to expose the findings. After that there is a conclusion of the individual case organization.

Cross case analysis
After the individual analysis of the cases, the following step is to compare the case organizations with each other. The systematic search for cross case patterns (Voss et al, 2002, p. 214) which go beyond each individual case's context and increase the generalizability of the observations (Eisenhardt, 1989). Comparing and analyzing the different cases together

leads to the finding of an explanation, or to pin down the conditions under which that finding occurs (Miles & Huberman, 1994).

The cross case analysis was performed in the following way:
- First the topics were summarized in a table which gives an overview of the cases together.
- Secondly in the first part of the cross case analysis the three case firms are compared with each other on the subject of the existing exploration pattern, the structure in the organizations and their collaborations with other organizations.
- In the second part of the cross case analysis the theory is incorporated and compared with the case results.

5.1 Within case analysis Company A

Introduction

Company-A is a web design organization. Since their foundation in 2000 they specialize in the development of websites for a diverse range of customers. For example; Business websites, web stores, intranet and extranet. The company has specialists at the area of analyses, design, HTML and CSS, development and search engine optimization. The turnover is been estimated at 0.3 million euro yearly.

Exploration trajectory

The growth of Company-A has been very gradual over the last 10 years. Every year the organization had 50 % growth, except last year. Last year the financial crisis has had an impact as well at Company-A and the organization has invested quite a lot in the development of an order application. The CEO and SEO/Online-Marketing employee both state that the growth of the firm comes from good relationships with their customers and networking. Customers of Company-A recommend the organization to other organizations. Another important factor is that the website of the firm has been strongly optimized since 2007; the organization has a high ranking when you search for web design at google.

The CEO of Company-A points out that they do not consider themselves as an innovative organization. The organization also does not do radical innovation. Company-A takes many small steps regarding innovation. In this way the organization renews itself. The organization only uses proven technology. They do no join every hype of new technology. The organization waits until a certain technology has become mainstream and established in the industry and then they start to use that technology. For a customer it is innovative however. According to Company-A the growth of the organization comes from their good relationships with the customers. This good relationship leads to a continuous growing pool of customers. The CEO thinks that the success of their firm comes from the fact that they are very good at listening to their customers and being able to give the customer what they want. And that does not simply mean making what the customer asks, but instead to try to find out what the customer really wants and making that product. Company-A has long term relationships with their customers.

5 % of the budget is spend on explorative activities, 95 % on exploitative activities. Often new starting companies enter the market with a new product, an innovative start. That was not the case for Company-A. Company-A started out of a customer demand. The CEO says it is still that way, the firm does projects for customers. “For us innovation is improving the relationships with our customers. The customer demand is the most important for us.”

When applying the exploration patterns of Faems et al, there is actually not really a pattern that fits with the growth trajectory of Company-A. According to the CEO the organization is not innovative at a constant level and it has been that way since the start of the organization. Company-A chooses for this situation because this way the organization thinks they will have the most customer satisfaction. The firm says that when they start to do new innovative things and the product fails, the risk will be larger that the customer will be unsatisfied. They are a small organization and when you bet at the wrong horse it will give big problems for a small organization. The SEO and Online Marketing employee, replies that a large part of the work is indeed not innovative, however Company-A does have innovation. For example regarding the Content Management System (CMS) when there are new developments or new techniques for the search engine optimization they incorporate it immediately in their unique way in their CMS. Another own product of Company-A is their Linkbuilding tool, it is an own project which is also quite innovative because it does not exist yet. Link building is the process of creating links to your website, to search for link possibilities and to look for link exchanges. Company-A made a tool for this. Sometimes there is time and space at the organization to do new things, to launch new ideas. The situation at Company-A is as following; they work for a period a lot on innovation, then the time spend on innovation decreases again because the product has to succeed on its own, then they are only busy at maintenance and sales. Untill they have gathered enough feedback again, so they can add new things. This seems to fit with the Punctuated exploration pattern of Faems et al.
The SEO/Online-Marketing employee points out that using things that already exist is not innovative, but when you integrate for example four existing things to create one new tool, then you could call that innovative.

Organization structure

Company-A is a small organization with 4 fulltime employees and 5 part time employees.

Tasks in the organization:
Acquisition: done by 2 employees
Functional design: 2 employees
Graphical design: 3 employees
HTML/CSS: 4 employees
Development: 3 employees
SEO: 1 employee
Online marketing: 2 employees

The organization structure can be described as flat. Company-A has quite a lot of specialization. The board members have their own specialization; one is a programmer, one is the head of Design, Acquisition and Functional Design and the other one is responsible for Online Marketing. One of the board members heads some employees at the area of programming, these employees are only working on programming. And an other board member leads employees that work at the designing area. So there are specific roles at Company-A.

The CEO states that all of their employees are responsible for innovation. Every employee who sees a possibility for improvement is able to inform this to the rest of the organization. Company-A also stimulates this. However the SEO/Online-Marketing employee points out that it is mostly the board members that come up with the ideas. The board members have an idea and inform the group. They look at the profit chances, try to think about the whole process, make a strength/weakness analysis, analyze where problems might occur and what the chances are.

Company-A does not have a R&D department. There is not a separation of exploitative and explorative activities. According to the CEO the reason why the organization does not have a separation between exploitation and exploration is because the organization is too small. They do not have enough money to have employees that are only busy with innovative activities. They also think it is not necessary for their organization. Even when the organization becomes larger, they do not want to choose for a structure where exploitative and explorative activities are separated from each other. The demand of the customers is the most important for the firm and when the organization has certain employees that are only busy with discovering new things, they may loose the connection with the customer and their wishes. The CEO also does not expect they are going to separate exploitative activities from explorative activities in the future.

The punctuated exploration pattern was observed at the organization. During the long periods of exploitation all employees are mostly working at activities like sales, marketing, maintenance and customer support. Sometimes there are periods when the organization is not that busy and they use these periods to also work on exploration. In these short periods that are characterized by enough time and space, especially the board members but also the other employees are performing innovative activities. However exploitative activities are also performed by all organization members during these exploration periods, but on a lesser scale.

In general since the start of Company-A there have not been many changes in the structure of the organization.

External relationships

The firm has 4 important partnerships with other organizations. Firm-O is an organization Company-A collaborates with since 2001. Firm-O is an advice office specialized at the organization of material companies. Company-A develops an order application together with Firm-O. They are working on this order application since 2008.

Another organization the company works with is Firm-S, a design office from Rotterdam. This partnership is since 2003. When Company-A is working on Flash projects they collaborate with Firm-S. Recently they collectively made an interactive voting machine for a theatre where visitors who went to see a play, could afterwards vote in the hall of the theatre. The CEO states “this is quite innovative. This was a question from a contest where we and Firm-S enlisted in.”
But the CEO states that these sort of collaborations with other organizations are based on a customer demand and are not purely aimed at innovation. One of the parties (Firm-O, Firm-S

or Company-A) has a question and they hire each other and make use of the others expertise because this needed to solve the question.

Firm-F is an organization Company-A works together with since 2005. Firm-F is a design office located in Delft. They design products for their customers and when necessary they hire Company-A for building the websites.

Company-A also collaborates extensively with a marketing office, Firm-Y, who are specialized at Ad Words, Ad Words training and media planning. Ad Words is the advertising program of Google. Firm-Y works at search engine marketing and search machine optimization. It is about how websites are found at the internet, and this is quite a creative process. The work of Company-A is more focused on websites itself, the content of websites, the search results that are not paid for. Company-A and Firm-Y make use of each others expertise in this area.

An important product of Company-A is their Content Management System (CMS). This CMS has been developed since 2001. A CMS can be described as the backside of a website, where you can easily make texts. In this way you do not have to copy all the HTML of a website and change it. With this CMS you can with a few buttons make a page which you can put in the website. You can develop it with an editor, save it and publicize it.

The firm does have some activities outsourced, but these activities are not explorative/innovation activities.

Open Source activities are visible at Company-A. For example in the editor of their CMS they use a certain amount of tools from an Open Source package. The reason for this is that almost every CMS uses these tools. The SEO/Online-Marketing employee says it is not common for companies to make such an editor themselves, just like some other scripts. At Company-A they incorporate and manipulate these tools so they function to their own wishes.

Company-A does not have any plans on new collaborations with other organizations. They are not actively searching for partnerships. But when a chance comes by and there is a customer demand they will consider it.

Conclusion

The CEO and SEO/Online-Marketing employee have slightly different perspectives regarding the innovative character of their organization. However when all the data is observed it can be seen that the organization has long periods of exploitative work that are interrupted by short periods of radical innovative improvements. When applying the exploration patterns of Faems et al, we see that the exploration pattern that mostly fits with Company-A is the Punctuated exploration pattern. Company-A is mostly active at the area of exploitative activities, however from time to time there are periods that they are working on the explorative side. It is important to note the relative character of the word innovation. What one could describe as innovative, an other person might not consider as innovative.
Company-A does not have a separation between exploitation and exploration in their structure. Reasons for this are that the organization is too small for such an ambidextrous structure and they do not have enough money. They also think such a separation is not necessary for their organization. All employees can come up with new innovative ideas,

everyone can speak their mind, however it is usually the board members that come up with ideas.
Company-A collaborates with four partners: Firm-O, Firm-S, Firm-F and Firm-Y. Together with these partners they make new products; for example an order application, Flash projects, a theatre interactive voting machine, the optimization of how good websites are found at the internet. Some Open Source participation is present at the organization as well.

5.2 Within case analysis Company-B

Introduction

Travel agency B was founded in 1971 in Oosterhout. The history of Company-B started with this travel agency. The travel agency itself has been stable for years and has about 10 employees. The real growth began in 2001, when the two managers started a new internet business website which will be called Business-C. Most of the growth of Company-B comes from this internet business. This internet business website is a supplier and price comparator of airline tickets. It has the option of comparing prices of regular airline carriers, low cost carriers and holiday travel businesses in one overview. Company-B consists of travel agency B, the internet business website Business-C and several other variations on Business-C.

Exploration trajectory

The CEO states that everyone in the organization is constantly working on innovation. The innovative ability is the competitive advantage of the organization. “The only thing we do is innovate. I think it is the only way to survive.” says the CEO. “We are already discussing things that we want to perform in 2013 or 2015. We are still visiting the same seminars and fairs that are held in the US to see what is going on at the area of technology, especially the travel technology.”

The founders of Business-C have a lot of IT knowledge. Both of them share a background at the TU Twente. They sell airline tickets with clever marketing, but they consider their organization as an IT company. When showing the exploration patterns of Faems et al, the CEO is convinced that the growth trajectory of Business-C fits with the steady exploration pattern. The Communication and PR employee agrees: “We have always been working on innovation throughout the years. I do not think we have had a drop in innovative activities in the beginning or later. In our market there is a lot of competition, we just can not afford to not innovate. We have to constantly work on innovation and watch everything, we can not afford to have a dip in innovation because of the strong competition in our market.”

Furthermore to listen to the customer as well as price margins are important. “By using margins we are able to earn money and with financial resources we can innovate.”

Organization structure

Company-B has 80 employees spread over 3 locations. 20 employees work at the location in Saarbrucken, 15 employees work at the location at Curacao and the other 45 employees work at the head office in Oosterhout. 12 of these 45 employees work at the travel agency B and the other employees work for Business-C. At Business-C Marketing has 8 employees, ICT has 5 employees, Callcentre including Curacao has 22 employees and Administration has 6 employees.

Company-B does not have a separation of exploitative and explorative activities. The organization does not have an R&D department. Most of the explorative activities are done at Business-C, but exploitative work is also done at Business-C. The exploitative everyday processes of Business-C are not handed over to the other businesses of Company-B. According to the Communication and PR employee the reason why Company-B does not choose to have a separation is because they do not want too much job specialization and it costs too much money. Besides that things are going well at the moment and they do not see a reason to make structural changes.

Basically the organization asks everyone in the organization to think about innovation. However not every employee is busy with innovation. At Business-C most of the exploration is carried out by the ICT and Marketing departments. Regarding the other employees the Communication and PR employee points out “we are busy becoming an international organization, so we expect from all our employees to keep an eye on possibilities and what our competitors are doing. Do not see it as a day task, but keep notice.”
The Administration and Callcenter departments of Business-C logically are more working at the day-to-day exploitative activities. But interaction plays a big role. For example at the Callcentre the people informed the ICT department that they were very busy and a chat program might be an idea, consequently the ICT made a plan on how to create this and after a while they accomplished this chat function.

When somebody has an idea they should go to their supervisor. It is also possible to immediately approach the manager but the aim is to approach the person who has the lead in your department and this person will inform the idea to the others at the weekly/monthly management meeting. The most important criteria regarding the evaluation of new ideas is if it leads to new bookings. The goal for new ideas is to get more bookings.

Structurally innovation is at the agenda every week at the meeting of the board. Once every month innovation is discussed with the IT manager and the brand manager to evaluate the steps the organization has made and what type of needs there are at the short and medium/long term.

At Company-B every employee can speak his/her mind and participate in the innovation discussion. The organization structure is characterized as flat with relatively little hierarchy. The CEO mentions the following words “Open doors, freedom and responsibility”.

Contextual ambidexterity is what can be observed at Company-B. All employees at the organization can deliver value to existing customers in his or her own functional area, but at the same time all employees are on the lookout for changes in the environment.

Company-B uses the concept which they call “Champions League” in their organization. It has five main values:
- “We are playing to win.”
- “We are customer obsessed.”
- “Close cooperation with suppliers.”

- “Innovation and cost leadership.”
- “Creating working pleasure and proud.”

It is about with what type of mindset the organization tries to work internally and externally. The main values are “playing at the highest level. This is the mentality that Company-B asks from their employees and it is visible for the customers and suppliers.

External relationships

Company-B makes use of an amount of outsourcing partnerships regarding innovation. They do not have all the expertise to do all innovation themselves and they also do no want a situation like that. Firm-U, a company in Breda, is an important partner of Company-B. They take care of many online activities and they search for new opportunities and seeding. Company-B does have one employee who is working on the online tasks like for example the banners and google etc. But when there are big projects Company-B uses Firm-U. Firm-U gives advice on how do you approach the potential customers like for example at Hyves, or with banners, on Youtube or Twitter etc. They do not only give advice, they also have an executive role. The online strategy is a very creative process with a lot of innovation.

We can observe more outsourcing partnerships when we look at the relationships of Company-B with suppliers. The organization has several suppliers who all operate in the IT business. And these suppliers all have skills at a certain discipline. “That is what we call Champions League and that is our ambition” says the CEO. The term Champions League is used by Company-B to describe certain characteristics of the company and its external environment; a good playing field with the right people, an international character, and working at the highest level. And that is also what the organization expects from its suppliers. Company-B selects its suppliers based on the innovative characteristics of the supplier’s products. The CEO declares: “We are more inspired and triggered by suppliers who come up with something strange then suppliers that come to us with a copy of Bol.com. That is not what we want.”
The most important suppliers of Company-B are Supplier-A, Supplier-C, Supplier-P, Supplier-G, Supplier-A and Supplier-T. Supplier-A delivers an accountancy package. Supplier-C is an English company that takes care of the infrastructure of the bookings. The hosting of the general and technical services is Supplier-P, a Dutch organization from Weert. Supplier-G is a Belgian company that designs and updates the bookings engines of Company-B. The Supplier-T takes care of the email system. Supplier-A is a company that is one of the global leaders in technology and distribution solutions for the travel and tourism industry. Supplier-A answers to the needs of the online travel companies which look for a quick and easy booking process. The launch of one of the new variations on the Business-C website is one of the most recent examples of these online solutions services.

Company-B works together with Firm-C. Basically Firm-C are lifting along on the name and the logo of Company-B. The board of Company-B also have stocks in Firm-C. The logo of Firm-C is the same as Company-B. This relationship is a good example of making use of the name and brand of another organization.

Company-B does not have external partnerships regarding R&D. However the CEO states they have regular consultation with the afore mentioned supply companies on the subject of R&D. The company tries to challenge itself and involve the suppliers in that process..

Suppliers also have to challenge themselves and involve Company-B at their turn. It is an interactive process.

Company-B does not have concrete future plans regarding collaborating with more organizations. The organization is aware of the danger of overrating itself by engaging in all sorts of other businesses, so Company-B stays on doing what they are good at. The CEO states that all organizations have their own goals which is a problem for collaborating. Company-B has become successful by doing their own thing, autonomous growth. And as long as this strategy works for Company-B they want to continue doing so.

Conclusion

At Company-B exploration is very important because of the heavy competition in their market. They can not afford to not focus on exploration or having a dip. Since the start of Business-C in 2001, which leaded to the growth/expansion of Company-B, they have been constantly working on innovation. Therefore the Steady exploration pattern of Faems et al fits most with the growth trajectory of Company-B.
Regarding the structure of Company-B we notice that they do have a separation between explorative and exploitative activities. The culture of Company-B says that all employees should think about innovation, however the innovation mostly comes from the ICT and Marketing departments of Business-C. Besides their explorative work, the people of ICT and Marketing also have normal day-to-day exploitative activities. These two departments are doing both explorative and exploitative work. Contextual ambidexterity is present at the firm. Company-B has quite an amount of explorative relationships with other organizations. For the most part these are relationships with suppliers. Outsourcing is the word that fits in this context. Every supplier has their own specialization. Another important relationship is the partnership with Firm-U who are doing a lot of the online presence business for Company-B.

5.3Within case analysis Company-C

Introduction

Company-C develops virtual assistant products that organizations can put on their websites. The virtual assistant answers questions of customers. The service gives companies the ability to answer any customer questions immediately, in a customer friendly and comprehensive way, using the fully automated dialogue system. Visitors of the web sites of the organizations receive clear, concise answers to their questions and are linked to the relevant web pages or further services (such as live chat if needed) in real time. Company-C was founded in 2005. The organization has grown considerably over the last years, for example resulting in a place 14th at the FD Gazellen top 100 of 2009. More than 75 enthusiastic employees work at several business centers of the company. Company-C has 3 CEO`s. One of the CEO`s was interviewed.

The exploration trajectory

The CEO of Company-C, points out that exploration is very important for their company. The organization has its own technology and they spend a lot of money on this subject. The percentage of exploration compared to exploitation was very high at the start of the organization. The proportion was 50/50. The company had developed a new product. After this exploration a lot of emphasis was being put on making money, dealing with customers and other daily activities. Explorative activities were maintained at the same absolute level, however percentage wise they decreased because simply more exploitative activities were being done.

At a certain point in time the organization discovered there were new innovation possibilities and also the organization had earned enough money so they decided that they could take a new step in the innovation process. So a new emphasis was being placed on innovative activities. You have to obtain a steady flow of commercial activities with which you can pay R&D facilities.

Compared to the 50/50 situation at the initial stages nowadays the proportion exploration/exploitation has decreased to 25/75. At the other side, nowadays the organization is much larger than in the beginning, so the absolute number of working hours spend on exploration is much larger than at the initial stage of the growth trajectory.

When showing the four exploration patterns of Faems et al, the respondent replied that Recovery exploration pattern fitted with their organization. Based on the other answers giving in the interview this might be accurate, however it must be pointed out that the exploration level nowadays is still lower than at the initial stages of the organization.

When talking about the future, the CEO says their organization will keep on strongly investing in R&D because that is their competitive advantage. But according to him the percentage of exploration compared to exploitation will decrease because their organization is growing fast. The situation at the moment is that the amount of employees that are busy dealing with customers is growing fast. Based on this data it seems that the punctuated exploration pattern might also fit with the Company-C. However the overall impression, based on the interview and website data, is that technology and exploration are very important at Company-C.

Organization structure

Company-C has 80 employees, 40 of these employees are full time employees. They work at the company's business centers in Maastricht, Rotterdam, Amersfoort and Southampton. The most important locations are the locations in Rotterdam and Maastricht. The head office location is in Rotterdam and this is where the commercial activities and the contacts with customers are done. At the location in Maastricht all the R&D is done. 70 technical employees work at this R&D centre. The company has a strict separation between exploitative and explorative businesses. When asking why the organization chose for this separation the CEO replies "other people". "For the daily operations the company needs different people than for R&D activities, these are very technical people."

An important aspect in this regard is that Company-C is a fusion organization. The location at Maastricht where all the R&D is done was an organization called Firm-E. Company-C was selling the technology of Firm-E. At a certain point Company-C had all the customers and Firm-E had all the technology, so the decision was made to join the two organizations together into one company. So the structural ambidextrous form that is present through out the organization is not one by design. It is a product of the merging of two separate organizations, one specializing in exploitative business and the other specializing in explorative business, into one new organization.

Company-C is content with their organizational structure at the moment and has no plans of making important changes in the future. An important argument why the organization does not move all people/centers to Rotterdam is the availability of work force. There are less competing IT employers in Limburg and the neighboring Flemish universities of Hasselt and Tongeren deliver a lot of good programmers in that region.

External relationships

The most important collaboration partner of Company-C is Firm-R. Firm-R is a software company that provides on demand CX software solutions that helps clients provide great customer experiences across all customer interaction points while reducing operating costs. Company-C sells the technology of Firm-R. The own technology of Company-C is based on the answering of questions of customers, the analysis. But the organization also wants to link their product with other systems inside organizations. So at a certain time the company had the choice whether to make or buy. Because of the heavy competition in that market he organization decided to collaborate with Firm-R. Over the years the power balance between the two collaboration partners has changed quite a lot. At the start there was the situation of a big software company and the small Company-C. Today Company-C is much larger, it has grown considerably and the communication between the two organizations has changed to a more equal level.

Several businesses of the organization have been outsourced. These are all exploitative businesses, like for example the accountancy activities. The R&D is all done in-house, none of this is being outsourced. However sometimes Company-C uses temporal expertise from other people/organizations.

In the future there are plans at the agenda of Company-C to start working together with universities on the subject of innovation. “We are going to collaborate with universities on innovation. At the moment we are busy to establish a scientific advisory board with universities” sais the CEO.

The organization does not have any other plans regarding external partnerships.

Company-C also does innovation together with their customers. The organization often has an innovative idea and informs its customers. They propose their customers to develop a new project. The deal is that the customer is the first one to use the product and only has to pay a low price. The customer only has to pay a cost price, but the advantage of this collaboration is that the company has developed something new that they can exploit. The company believes very much in working together with customers.

Conclusion

Innovation, and thus exploration, is very important at Company-C. A lot of money is invested in exploration and this is also visible in their position in the market; in the Netherlands they are basically the only company offering this type of technology to customers. The recovery exploration pattern fits with exploration trajectory at Company-C; after the start there was a dip in explorative activities since a lot of emphasis was being placed on earning profits, customer support and other daily activities.

Company-C has an ambidextrous structure. The explorative activities are carried out at a separate business department. This structure originated due to the fact that two organizations that in the past used to collaborate merged into one new organization, therefore making use of the special qualities of each other. Company-C has one important external partnership. This partnership is with a company called Firm-R that provides on demand CX software solutions. Company-C sells the technology of Firm-R. Another innovation project of Company-C is their plan to collaborate with universities. The company is working on setting up a scientific advisory board with universities.

6. Cross case analysis

6.1 Cases compared

The next step is a cross case analysis. First a case matrix is shown, this case matrix gives an outline of the individual cases.

	Exploration pattern	**Exploration structure**	**Exploration partnerships**	**Organizational size**
Company-A	Punctuated	No structural separation	Several partnerships, but mostly exploitative.	Small
Company-B	Steady	Contextual ambidexterity	Important, outsource supplier network.	Small-medium
Company-C	Recovery	Structural ambidexterity	One partner, selling of their technology. Plans collaborating with universities.	Small-medium

The individual cases have been investigated. The cross case analysis is performed to generate patterns, differences and reasons for the specific actions of organizations.

For organizations that work in the internet technology industry, technology development is always necessary and is therefore present at all organizations, but of course in various amounts. If organizations want to maintain or improve their position in highly technology driven markets, exploration is a necessary activity. Internet technology is a very heterogeneous market that has many subcategories in which the pace of product innovation differs. In the internet technology sector some markets are more stable and other markets are more constantly changing and the organizations that work in these markets do no all have the same ambitions, so the extent of exploration does vary among these organizations.

Because of the fast growth it is possible that organizations will experience a push towards exploitation which leads to less exploration, the so called success trap. In this research we notice that this is not the case; instead of a decrease in explorative activities as a result of the organizational changes the growth enforces, exploration increased. At Company-A, Company-B and Company-C the explorative activities did not decrease on the long term.

One of the reasons is that when the number of employees of organizations grows, the organizations can direct more people to work on exploration and the knowledge base increases which, in turn, benefits exploration (Dewar et al, 1990).

When we observe the structure of the case gazelle firms of this research we notice that Company-A, Company-B and Company-C all have organic structures, flat hierarchies and informal cultures. Though it must be announced that all three organizations are rather small, especially Company-A. Small organizations usually have organic structures, so these results are not a surprise.

Organic structures have many advantages regarding innovation, but more structure, functional specialization and role formalization also contribute towards exploration. When companies grow and the number of employees increases, more task specialization and functional differentiation will ensure that employees can get dedicated to exploration. When people are specifically assigned to explorative work, the use of their knowledge and capabilities is optimised.. This is in contrast with the case of Company-B of this research. At Company-B they explicitly say that they do not want to have much job specialization in their organization, though Company-B is an innovative firm. Company-A is a small organization with only 8 employees, but even though their small organizational size they state that they do quite a lot of functional specialization within their organization. Company-C is larger with more than 75 employees and in their company we see the most functional specialization; they have a strict separation of exploitative and explorative work with two separate business centres. The creation of structural elements for exploration and an increasing of formalization of tasks and roles contributes to exploration for fast growers in high tech environments.

In this research there are two firms (Company-B and Company-C) that focus on exploration. Company-B does not have separation between exploration and exploitation. Reasons for this are; it costs too much, they do not want too much job specialization in their organization and things are going well at the moment and there is no need to change a winning team. Company-C does have an ambidextrous structure and they argue “they are different people”. At Company-A a punctuated equilibrium can be observed. Short periods of exploration and long periods of exploitation follow each other, with the emphasis on exploitation.
This is an other way to solve the dilemma; separating exploitation and exploration by choosing a punctuated equilibrium model, and periods of each or another interchange. In a phase of exploration, a special temporary team is founded.

Concerning the external partnerships it is observed that Company-B has external relations for exploration. They have an outsourcing network with several suppliers regarding exploration. All partners have their own specialization/talent in the innovation process.
Company-C has one important exploration partnership, so they are active in this area as well. Besides this partnership Company-C is also starting to set up collaborative settings with universities. Company-A collaborates with several other organizations, but these partnerships are mostly used for exploitation.

In general when looking at the cases of this research and also the gazelle cases of Faems et al (2009) there seems to be a correlation between the explorative status of the organizations and their engagement in explorative external partnerships. Just organizations that are really engaged in exploration are willing to spend time and effort in explorative external partnerships.

6.2 Comparison with literature

Company-A, Company-B and Company-C all have organic structures. According to Sine et al (2006) young organizations or new ventures, in emergent and high technology industries, are likely to have an organic structure. Theory states that, in order to be adaptive and flexible, organic structures are beneficial (Burns & Stalker, 1961).
However Sine et al (2006) also argued that the structure of organizations can be too organic, especially in younger and smaller organizations. They suggest that young organizations in emerging sectors benefit from functional specialization because it allows people to focus on specific activities and to accumulate task related knowledge and thus enhances information processing capabilities.

The study of Dougherty and Hardy (1996) shows that organization wide characteristics facilitate product innovation; otherwise it becomes a vulnerable and fragile activity. They again confirm that strategic and structural characteristics and mechanisms are needed to successfully explore.

Many authors favour a structure where exploitation and exploration are separated, because explorative activities need dedication and can not be done well with distraction of daily issues. Structural ambidexterity in the strict sense can only be observed at Company-C. Company-B has contextual ambidexterity, while at Company-A there is a punctuated exploration pattern.
Because of the difference between exploitation and exploration, it is beneficial to separate them so that both can be optimised (Lewin et al, 1999; Benner & Tushman, 2003; Ireland & Webb, 2007). But depending on the size of organizations and their strategy, the degree of separation might be different. The larger an organization becomes, the stronger will be the need to clearly define both exploration and exploitation. When exploration is one of the core activities of the organization, formal separation between the two can be used. The change towards more professionalization of the organization and the official inclusion of exploration in the organization can be a major factor where the success trap as described by March & Levinthal (1993) is likely to occur.

The case firms of this research are small to medium size organizations and they have various partnerships with other organizations, though some collaborations are only exploitation oriented. When we look at literature we notice that the need for alliances in product development is emphasized. Particularly for high technology (Beam, 2007; Faems & Looy, 2003; Chesbrough, 2003) and small organizations with restricted knowledge capacity compared to larger organizations, the engagement in external partnerships would be beneficial (Cattani, 2005). Company-C has plans to collaborate with universities. Several scholars (Faems, Van Looy & Debackere, 2005; Neyens, Faems & Sels, 2009; Rothaermel & Deeds, 2004) argue that collaborating with universities has a positive impact on innovation. They present evidence that engaging in alliances with universities and research institutes has a positive impact on the development of radically new products.

According to Stuart (2000) innovation alliances are signals that transmit social status and recognition. Especially when one of the partners in an alliance is a young or small organization, alliances can work as approval methods: they build public confidence in the value of an organization's products and services. And this facilitates the organizational attempts to attract customers and other business partners. Stuart states (2000) that firms that have large and innovative alliance partners perform better than otherwise comparable companies that do not have such partners. And young and small organizations benefit more from large and innovative strategic alliance partners than do old and large firms.

At Company-C and Company-B exploration is considered more important than at Company-A, consequently they are also more engaged in explorative external collaborations. This supports the finding that the presence of long term partnerships indicates the fact that exploration is a substantial part of the organizational activities (Hagedoorn, 1993).

7. Conclusion

The conclusions based on the case studies and the cross case analysis will be presented in this section, which have the aim to provide answers for the research questions. The research question was written in the following way: “In which ways do gazelle firms implement ambidexterity or cooperate with external parties to organize exploration?”
Now that the data has been analysed it is time to discuss the implications of the results.

First of all we see that different exploration patterns are visible at the case organizations. The internet technology sector is a heterogeneous industry that includes markets with different degrees of competition. In some markets technological progression is very fast and other markets are more stable.. The market in which the case organizations are situated has an important effect on whether the organization chooses to engage in exploration.
Besides the market location, organizations do not all have the same ambitions. Some organizations do not have the same growth ambitions as other organizations have. More exploration does not always have a positive effect. Too much exploration compared to exploitation may result in the failure trap, in which resources “dry up” by too much investing in experimentation without gaining any significant result from them (Levinthal & March 1993).

The research of Faems et al (2009) concludes that one of the attributes that contributes to the emergence of specific exploration behaviour is the organization structure. Forms of structural ambidexterity are linked with exploration. In this research there are two organizations (Company-B, Company-C) that focus on exploration. Structural ambidexterity is present at one (Company-C) of these two case organizations. At Company-B there are no forms of structural separation. Contextual ambidexterity is present at this firm. Therefore the results of this research confirm that ambidexterity is linked with exploration, because the two firms where exploration plays an important role both have ambidexterity. However only one of them has the classic structural ambidextrous form.

Though there is no structural separation regarding the organizational setting at Company-A and Company-B, not everyone is responsible for exploration in these organizations. The cultures of these two organizations both state that every employee should think about innovation, however the innovation in these two organizations mostly comes from a select group of people. In the case of Company-A this select group is the direction, at Company-B it is the ICT and Marketing departments of Business-C. However in both organizations these select groups of people also perform daily exploitative activities, so they perform both explorative and exploitative activities.

An important factor that should be taken into consideration is organizational size. The three case organizations in this research are small to moderate size organizations. The fact that at an innovative firm like Company-B there is no presence of structural ambidexterity is therefore not strange. The company has only 80 employees. The introduction of structural separation costs money and for small-moderate size organizations it might not fit in their context. It is quite possible that when Company-B grows larger a more complex differentiated structure will be introduced in the future, though the organization has no plans for this at this moment. At small to moderate size firms it is still manageable to not have much functional specialization due to the limited amount of people and functions. Once organizations grow, and the number of people and financial resources increases, structural ambidexterity is often introduced. The raise of workforce stimulate the emergence of functions and tasks which can be assigned to one or the other. The increased financial resources can also support this. A complete business department can be dedicated to exploration where freedom for creativity and concentration on exploration can be performed.

Some interesting data regarding firm size and innovation partnerships is found in the work of Rogers (2004). By making use of survey data on Australian companies Rogers (2004) investigated the determinants of innovation. The outcomes include that the use of networks is associated with innovation in some sector-firm size categories. Among small manufacturing firms there is a positive association between networking and innovation. In contrast, for nonmanufacturing companies this association is present for medium and large sized firms.

By investigating the case studies in this research we can clearly see that the use of external partnerships is of considerable importance to organizations if they want be active at the fore front of exploration. The two organizations (Company-B, Company-C) that can be classified as truly innovative both make use of external relations with other organizations regarding exploration. The other organization (Company-A) does not choose to be constantly active in exploration, only periodically. We see as well that Company-A does not have external partnerships at exploration. The external partnerships that Company-A has with other organizations are mostly focused on exploitative businesses.
This is in agreement with the findings of Faems et al (2009) who also conclude that the presence or absence of explorative collaborative strategies has a significant impact on which type of exploration pattern is likely to occur in gazelle firms.

This research concludes that collaboration with other organizations on exploration is recommended for all organizations. Especially for small organizations that do not have much financial resources and do not have R&D departments, the choice of joining forces by collaborating with other organizations at exploration is very beneficial. In these times you can not expect organizations to do everything themselves. A strategy of sticking to "what you are good at" as an organization and making use of the special qualities of other organizations may be favourable.
However there are also authors that oppose the need for collaboration strategies. Bougrain and Haudeville performed (2001) a case study on innovation collaboration in SME`s and they conclude that:
- "Technological co-operation does not enhance the chance of success of innovative projects."
- "R&D intensity does not lead to discriminate between success and failure."
- "Internal R&D capacities, like a design office, enhance the organization's ability to co-operate and to carry its project to success."
Thus though most research confirms that external partnerships contribute to exploration, not all authors agree. Therefore another way is to approach this subject from a contingency

perspective where the context of a given firm should be included in the decision making process whether collaborating with other firms is a good choice.

Overall in this research it is stated that organizational structure and external partnerships are important facilitators of explorative activity. When we include the cases of Faems et al (2009) it is important to note that at all case organizations where exploration plays an important role (firms with steady or recovery pattern), there is either a presence of structural ambidexterity or engagement in collaborative partnerships regarding exploration or both. At least one of the two is present at these organizations.

Limitations

This study has some limitations. One of the limitations is that there was a focus on one particular industry, internet technology organizations. Even though a research design like this minimizes the confounding effects of extraneous variation, it stays unclear whether the findings can be generalized to other environments. In addition the data was collected retrospectively, which restricts the ability to extract exploration patterns in more fine-grained ways. There has possibly been more sensitivity to highly visible and influential changes in explorative activities because of this way of working. There may be an under representation of emergent, incremental or gradual alterations in this study. Therefore future research in which explorative progression is tracked in real-time should be carried out.

REFERENCES

Barkham, R.; Gudgin, G; Hart, M., Hanvey, E. (1996). *The Determinants of Small Firm Growth: An Inter-Regional Study in the United Kingdom 1986-90,* London, UK.

Beckman, C.M. (2006), The Influence of founding team company affiliation on firm behaviour, *Academy of Management Journal*, Vol. 49, No. 4, 741–758.

Benner, M.J., Tushman, M.L, (2003). Exploitation, exploration, and process management: The productivity dilemma revisited, *Academy of management review*, 2003, Vol. 28, No. 2, pp. 238-256

Bougrain, F. and Haudeville, B. (2002), "Innovation, collaboration and SMEs' internal research capacities", *Research Policy*, Vol. 31, pp. 735-747.

Brown, S.L. ,Eisenhardt, K.M. (1995). Product Development: Past Research, Present Findings, and Future Directions. Academy of Management Review, Vol. 20, No. 2, pp. 343–378.

Cattani, G., (2005) Preadaptation, Firm Heterogeneity, and Technological Performance: A Study on the Evolution of Fiber Optics, 1970–1995, Organization Science, Vol. 16, No.6, pp. 563–580,

Chesbrough, H.W, (2003), The Era of Open Innovation, MIT Sloan Management Review, Vol. 44, No. 3, pp. 35-41

Christensen, C.M., Overdorf, M., (2000), Meeting the Challenge of Disruptive Change, Harvard Business Review, Vol. 78, No. 2, pp. 66–76.

Cognetics (1994): Business Almanac.

Cognetics (2000): Business Almanac.

Colarelli O`Connor, G., McDermott, C.M, (2004). The human side of radical innovation, *Journal of Engineering and Technology Management*, 21, 2004, pp. 11-30

Damanpour, F., (1992), Organizational Size and Innovation, *Organization Studies*, Vol. 13, No. 3, pp 375-402

Delmar, F. Davidsson, P., Gartner, W.B, (2003) Arriving at the high-growth firm, *Journal of Business Venturing*, Vol. 18, pp. 189-216

Dewar R.D., Dutton, J.E, (1986) The Adoption of Radical and Incremental Innovations: An Empirical Analysis, Management Science, Vol. 32, No. 11, pp. 1422-1433

Dougherty, D., S. Hardy, C., (1996) 'Organizing for innovation'. In Cleggs, (eds.), Handbook of organization studies, pp. 424–39. London: Sage Publications

Duncan, R. B. 1976. The ambidextrous organization: Designing dual structures for innovation. In R. H. Kilmann, L. R. Pondy, & D. Slevin (Eds.), *The management of organization***,** vol. 1: 167–188. New York: North-Holland.

Eisenhardt, K.M, Building Theories form Case Study Research, *Academy of management review*, 1989, Vol. 14, no. 4, pp. 532-550

Faems, D.; Lamers, F.; Visscher, K. (2009) Exploration patterns in gazelle firms: A multiple case study in the internet technology industry.

Faems, D, Looy, Van, B., Debackere, K., (2005), Interorganizational Collaboration and Innovation : Towards a Portfolio Approach , Journal of Product Innovation Management, Vol. 22, pp. 238-250

Fesser, H.R., Willard, G.E., 1990. Founding strategy and performance: a comparison of high and low growth hightech forms. *Strateg. Manage J*. 11 (2), 87–98.

Gibson C; Birkinshaw J, (2004). Antecedents, consequences, and mediating role of organizational ambidexterity, *Academy of Management Journal* 2004 Apr Vol 47:2 p 209-226

Gioia, D. A., & Chittipeddi, K., (1991), Sensemaking and Sensegiving in Strategic Change Initiation Strategic Management Journal, Vol. 12, No. 6 pp. 433-448

Hagedoorn, J.,(1993), Understanding the Rationale of Strategic Technology Partnering: Interorganizational Modes of Cooperation and Sectoral Differences, Strategic Management Journal, Vol. 14, No. 5, pp. 371-385

Hargadon, A., 2003. *How breakthroughs happen: The surprising truth about how companies innovate.* Harvard Business School Press, Boston MA.

Henderson, R., Del Alamo, J., Becker, T., Lawton, J., Moran, P., & Shapiro, S. 1998. The perils of excellence: Barriers to effective process improvement in product-driven firms. *Production and Operations Quarterly.* 7(1): 2-18

Ireland, R.D. & Webb, J.W. 2007. Strategic entrepreneurship: Creating competitive advantage through streams of innovation. *Business Horizons*, 50: 49-59.

Jansen, J.J.P., Van den Bosch, F.A.J., Volberda, H.W., 2006. Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management Science*, 52, 1661-1674.

Kogut, B., (1988), Joint Ventures: Theoretical and Empirical Perspectives, Strategic Management Journal, Vol. 9, No. 4, pp. 319-332

Leonard-Barton, D., (1992) Core capabilities and core rigidities: A paradox in managing new product development, *Strategic Management Journal. Vol.* 13, pp. 111–126.

Levinthal, D.A., March, J.G., (1993), The Myopia of learning, *Strategic Management Journal*, Vol. 14, pp 95-112

Lewin, A.Y. ,Long, C.P. , Carroll, T.N, (1999), The Coevolution of New Organizational Forms, Organization science ,Vol. 10, No. 5, pp. 535–550

MacCormack, A., Verganti, R., Iansiti, M, (2001). Developing Products on "Internet Time": The Anatomy of a flexible Development Process*,* *Management Science,* Vol. 47, No. 1, January 2001 pp. 133-150

March. J.G., (1991), Exploration and exploitation in organizational learning, Organization Science, Vol. 2 , No. 1, pp. 71-87

McDonough, E., & Leifer, R. 1983. Using simultaneous structures to cope with uncertainty. *Academy ofManagement Journal***,** 26: 727–735.

Meredith, J. 1998, Building operations management theory through case and field research, Journal of operations management, Vol. 16, pp. 441-454

Miles, M.B , Huberman, A.M, (1994) Qualitative data analysis, an Expanded Sourcebook, Beverly Hills, California: Sage Publications

Miles, R. E. and Snow, C. C. (1978*). Organizational strategy, structure, and process*. New York: McGraw-Hill Book Co.

Neyens, I., Faems, D. & Sels, L. In Press. The impact of continuous and discontinuous alliance strategies on startup innovation performance. *International Journal of Technology Management***.**

Nohria, N. ,Gulati, R. , (1996) , Is slack good or bad for innovation?, *Academy of Management Journal*, Vol. 39, No. 5, pp 1245-1264

O'Reilly, C.A., Tushman, M.L., 2004. The ambidextrous organization. *Harvard Business Review***,** 82: 74–82.

Rogers, M. (2002) Networks, Firm Size and Innovation. *Small Business Economics* 22: 141–153.

Rothaermel, F. T. & Deeds, D.L. 2004. Exploration and exploitation alliances in biotechnology: a system of new product development. *Strategic Management Journal*, 25: 201-221.

Schulze, P., (2009). Balancing Exploitation and Exploration: Organizational Antecedents and Performance Effects of Innovation Strategies. Gabler, Wiesbaden, Germany.

Sine, W.D, Mitsuhashi, H., Kirsch, D.A., (2006), Revisiting Burns and Stalker: Formal Structure and new venture performance in emerging economic sectors, Academy of Management Journal, Vol. 49, No. 1, pp. 121–132.

Sterman, J, D.. Repenning, N, P,, & Kofman, F, 1997. Unanticipated side effects of successful quality programs: Exploring a paradox of organizational improvement. *Management Science,* 43: 503-521.

Storey, D.J. (1984): *Understanding the Small Business Sector*, Routlege, New York, USA.

Stuart, T. E. (2000), “Interorganizational alliances and the performance of firms: A study of growth and innovation rates in a high-technology industry”, Strategic Management Journal n° 21, pp. 791-811

Survey of Fast-growth Companies, Ivey Institute for Entrepreneurship, 2000

Tidd. J., (1995) Development of Novel Products Trough Intraorganizational and Interorganizational Networks. The case of home automation, Journal of product innovation management, Vol. 12, pp. 307-322

Torkkeli M.T., Kock J.C.; Salmi P.A.S (2009). "The Open Innovation Paradigm: A contingency perspective". Journal of Industrial Engineering and Management

Tushman, M. L., & O’Reilly, C. A. 1996. Ambidextrous organizations: Managing evolutionary and revolutionary change. *California Management Review,* 38(4): 8–30.

Voss, C. , Tsikriktis, N., Frohlich, M., Case research in operations management, International Journal of Operations & Production Management, Vol. 22, No.2, pp. 195-219

Yalcinkaya, G. Calantone, R.J &Griffith, D.A, 2007, An Examination of Exploration and Exploitation Capabilities: Implications for Product Innovation and Market Performance , Journal of International Marketing, Vol. 15, No. 4, 2007, pp. 63–93

Yin, R.K, (2003), Case study research: design and methods, Third edition, Applied Social Research Methods Series, Vol. 5, Thousand Oaks,
California, USA: Sage publications

Internet sources:

www.insyde.nl
www.beins.nl
www.selfservicecompany.nl
www.fd.nl

Annex1:

Interview questions

Introduction

1. What is your position in the organization?

2. When was the organization established?

3. How many employees does the organization have?

Exploration situation and evolution.

In this part of the interview I want to ask you some questions regarding the balance between explorative innovation and exploitative innovation in your organization. Explorative activities are activities such as fundamental research, experimenting and building first prototypes. It concerns the generation of new knowledge for the development of new technologies and products which could eventually lead to sources of competitive advantage. Exploration can be explained as the set of organizational characteristics or activities undertaken in order to search for new knowledge and possibilities that can be applied to the development of new technologies, products, processes or organizational changes. Exploitative activities are about standardization, optimization, fine tuning and up-scaling. Exploitation is defined as “the refinement and extension of existing competencies, technologies, and paradigms exhibiting returns that are positive, proximate, and predictable” (March, 1991, p. 85). Exploitation, therefore, stresses “the use and development of things already known” (Levinthal and March, 1993). Exploitation is described by using terms such as refinement, choice, production efficiency, implementation and execution and contributes to the current business (March, 1991, p. 71).

4. How is the budget divided over the two types of R&D projects? And how did this balance change over time in your organization?

	Percentage
Explorative innovation projects; these are projects where the emphasis lies on activities such as fundamental research, experimenting and building first prototypes	…..%
Exploitative innovation projects; these are projects where the emphasis lies on activities such as standardization, optimization, fine tuning and up-scaling	…..%
	100 %

Evolution of exploration at the initial stages of the growth trajectory

5. Did your organization experience a decline of exploration during the first stages of the growth trajectory of your organization? Why did that happen? Or why did that not happen? And if so, how much was that decline?

If the answer is yes at question 5, go on to question 6.
If the answer is no at question 5, go on to question 8

Evolution of exploration at the more mature stages of the growth trajectory

6. After this decline of exploration during the first stages of growth did your organization increase the explorative activities during the more mature stages of the growth trajectory? If so, why? If that was not the case, why not? How did you perform this increase?

7. Did this increase of explorative activities turn out to be permanent or temporary?

8. How about the more mature stages of growth? Also not a decline of exploration?

Show the respondent the figure with the different exploration patterns of Faems et al, and ask him/her to try to choose which pattern fits with their organization.

Internal organization of exploration / Structural ambidexterity

9. Can you describe how exploration is organized in your organization?
For example, which departments are involved with exploration and/or do you have special teams for exploration?

10. Are in your organization exploitative activities and exploratory activities separated from each other in different subunits?

11. If the answer is yes, can you give a detailed description of this structural separation in your organization? Why did you choose for structural separation?

12. If the answer is no, have you ever thought about structural separation?

13. Could you describe how the internal organization of exploration has changed over all the years of the existence of the organization? Why did you decide to make these changes?

External organization of exploration / External partnerships

To handle exploration organizations can also work together with external parties. There are two forms of external relationships: vertical relationships, for example with client and suppliers, and horizontal relationships with competitors and organizations that can offer complementary knowledge.

14. Do you cooperate with external parties to handle exploration? For example do you make us of open source platforms, outsourcing, joint ventures, Non-equity, contractual forms of

R&D partnerships etc to manage the explorative activities of your company? Please elaborate?

15. Could you describe how the cooperation with external parties to handle exploration has changed over all the years of the existence of the organization? For example a change in quantity or a change in type? Why did you decide to make this change?

To conclude:

16. How do you see the future concerning exploration in your organization? And do you think you will be doing things differently in the future regarding the internal organization and the use of external partnerships?

Annex 2:

Reflection

This section of the thesis is dedicated to a reflection of the bachelor assignment. I will shortly reflect on my experiences and how I perceived the process of writing a research paper.

At the end of 2009 I wrote an email to the Operations, Organisation and Human Resources (OOHR) faculty of the university of Twente. I explained that I was looking for a bachelor assignment and that I was interested in the innovation research area. Klaasjan Visscher of OOHR said they were interested in how fast growing firms handled innovation and they had an assignment for a student. We had a meeting to discuss the possibilities and a few weeks later I started the assignment.

I started this research assignment at the end of 2009. At the start of the assignment the plan was to finish the assignment within 6 months, however during this time I started following several other courses so as a result there was quite an amount of delay. Also in the time schedule not enough time was put aside for rounds of feedback and improvement. The research was finished in november, so the total time has been about a year.

The most difficult part has been the start of the assignment, more specifically the formulation of the research question, literature research, introduction and theoretical framework. After this was completed, things went more smoothly.

Many of these difficulties can probably be explained by my lack of experience with these kinds of projects. Consequently, I think that the next time the preparation and the research itself would take place more easily. I realise now more than before that the preparation of a research is the foundation.

The communication with my supervisors has been very good. There have been contact moments on a regular basis with the supervisors regarding the status of my assignment and the feedback was good and useful. Sometimes I had to wait a week or two for feedback, but this is of course logical because they have their own work and busy time schedule.

During the interviews with organizations I noticed there is quite an amount of difference between theory and practice. The business environment and university environment are two different area`s with their own language. Logically managers in business organizations have a very practical view of work and do no think in theoretical terms. In order to achieve good interview results it was important to translate theoretical descriptions into more practical texts and questions.

I learned that immediately processing the data after the interviews have been performed is important. In this way you get the best results. When there is a lot of time between the interviews and the actual analyzing process, some useful information may have been forgotten by the researcher. Therefore I immediately transcribed the data after the interviews had been performed.

Now the assignment is finished and I am satisfied with the result. But the next time it would be better to make a better time schedule. Also it would be better to plan more time in the schedule for phases of improvement and the finishing of the assignment.