



**UNIVERSITY OF GOTHENBURG**  
**SCHOOL OF BUSINESS, ECONOMICS AND LAW**

Master Degree Project in Knowledge-based Entrepreneurship

## **Seeing to the Needs of a Startup**

Providing inventiveBoard with market knowledge and exposure

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# Preamble

This project could be summed up in many ways: a temporarily sedentary lifestyle, mental training, world championships in coffee drinking but above all it has meant an end to an academic career. It is hereby official that this will be my last commitment to complete a degree in the academic world. This feels incredible mainly because it will be the start of something new, but also that it came to end with this thesis. Now I consider myself to possess a wide collection of keys, as my grandfather saw it, making it possible for me to choose which doors I would like to open.

I would like to thank everyone who has contributed in the making of this thesis. Joakim Wahlberg who has been a key-player in InventiveBoard that has always been very open and positive with how I chose to proceed with this thesis. My tutor Olof Zaring at Gothenburg University for the always positive criticism. Anders Nilsson has been a central character throughout my Master education and a provider of stimulating discussions towards formulating the research field for this thesis. GU-Holding foremost for Håkan Thorbjörnsson for as well as the office space. I would also like to thank all the respondents who have given their time contributing with interesting insights into their businesses as well as having the patience with listening to the thoughts of a student.

## Förord

Det här projektet skulle kunna summeras på många olika sätt: stilla sittande, mental träning, kaffe drickar mm osv men framförallt har det inneburit ett avslut på en akademiska karriär. Det är härmed officiellt att detta blir mitt sista åtagande av att avlägga en examen inom den akademiska världen. Detta känns otroligt skönt främst att det kommer bli början på något nytt men även att det fått det slutet det fick. Så nu har jag skaffat mig en gedigen samling nycklar, som min farfar beskrev det, och kan själv välja vilka dörrar jag vill öppna.

Jag skulle vilja tacka alla som varit med och bidragit till att denna uppsats. Joakim Wahlbergs som varit en av nyckelpersonerna i InventiveBoard och som har varit väldigt öppen och positiv med hur jag valt att gå tillväga med denna uppsats. Olof Zaring från Göteborgs Universitet som varit min handledare för den alltid positiva kritiken. Anders Nilsson har varit en central figur genom hela min utbildning har varit ett ypperligt bollplank när det kommit till att formulera forskningsområdet. GU-Holding för att ha bistått med lokaler och Håkan Thorbjörnsson. Jag skulle också vilja tacka alla respondenterna som tagit sig tiden genom att bidra med en mycket intressant inblick i deras verksamheter samt lyssnat på en students funderingar.

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Niclas Sjöquist  
2014-06-05

## Abstract

This thesis is set out to provide an understanding on what actions a firm does to withstand competition with a qualitative research approach. The main medicine for this is considered to be innovation or foremost the competitive advantage gained from it. In order to take in new knowledge a firms learning capability is looked into by sampling firms from the KIE-segment. These firms has been interviewed in a semi structured matter and analyzed with a frame of reference that depicts the fields of: KIE-firms, Innovation and Absorptive Capacity. The empirical body is compared among the respondents and then contrasted with theory. The outcome of this project shows that the sample of KIE-firms regards the interaction with the customer to be the biggest source of input when managing the innovation process. This conclusion is then used as a recommendation for InventiveBoard, which is a innovation management company owned and managed by Joakim Wahlberg, GU-Holding and three students of the Knowledge Based Entrepreneurship Masters program.

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# Introduction

In order to stay in business today the following quote by Peter Drucker shines with its relevance: "Business as usual soon means no business at all". It becomes very significant when describing the constant development that is going on in the business landscape. Who knew that the traditional newspaper industry were to be under such a threat from the upcoming digitalization, Economist (2006), or that the revenue model for today's music artists are no longer driven by the physical amount of records sold, Funk (2008).

If the experience is that you do not see any major changes happening in your business surrounding it might be an indication that major changes are on its way that is just lurking around the corner. In order to be prepared the companies should actively work with managing ideas that develops their business in various ways, because in the long run innovation is needed in order to survive. This growing awareness has nurtured the innovation management sector to expand. (Dodgson, Gann and Salter, 2008)

This expansion can also be seen in how organizations nowadays are having innovations managers and innovation teams naturally incorporated into the organization. It can also be noticed by viewing the external environment in which the general organization works in where there has been popping up specialized innovation firms. These firms are offering to take care of the innovation process by either educating staff or temporarily becoming process owners to ensure that the organization is not falling behind.

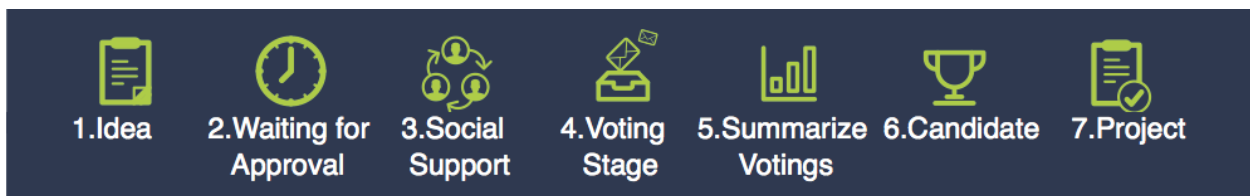
But what does it take to become known as an innovative player out on the market? In order to ensure the first steps towards a functioning innovational process addresses the firm's learning capability which becomes a very central part in the struggle of staying ahead. The capability of learning has been a holy grail for many researchers to depict. Argyris and Schön (1978) with their concept of single and double loop learning became a milestone where they highlight the iterative learning processes an organisation may experience. After becoming aware of how to best learn the company faces the decision of what to learn. This decision can become a very complex process where firms are forced to navigate an ocean of intellectual property rights and knowledge. This is exactly what some firms are successfully doing, connecting the dots between different knowledge pools along with their expertise, in order to create innovative solutions for the ever-changing market needs. (Baron, 2006) The third natural step is to realize the newly learnt knowledge and incorporate it into the company's daily business. By mastering these three steps firms can become pioneers on a market. This report is thought to shed some light over these three steps by investigating how innovative firms are working with their innovation process, both when it comes to developing them as well as handling it. This information will serve as a market-research for a start-up called InventiveBoard that offers a cloud based management tool for innovation-processes, to help firms become champions of the three steps. As of now InventiveBoard is in a prototyping stage with its cloud based management tool and are seeking input on what kind of fine tuning their offering may need.

## InventiveBoard

InventiveBoard is a service based company driven by the idea provider Joakim Wahlberg, the three students Liana Bobirnea, Niclas Sjöquist and Stephanie Lickiss from the Master of Science program in Knowledge Based Entrepreneurship and Gothenburg's University's Holding company. The company was founded during the summer of 2013 and the students entered the company during the autumn of 2013. Since the student entered the company they have produced a business plan, an extensive scenario plan for InventiveBoard as well as conducting sales calls.

The InventiveBoard project took off through the initiative from a former financial controller by the name of Joakim Wahlberg. During his days as a controller Joakim began to notice that organizations are in desperate need for a better way to manage their innovation processes. He saw

that organizations actually struggles to manage ideas, but they seemed to be well aware off that they needed to manage ideas. Joakim found out that a lot of companies seemed to rely on tacit knowledge, with this dependency came also an issue were tacit knowledge left the company when employees moved on. Some companies were using bespoke products, many found these to be too expensive and difficult to produce in house. Other companies were simply not managing their innovation process in any way. Joakim saw that these companies developed slowly, lost ideas and had no way to structure their innovation. With this first glance at the market Joakim started to design the InventiveBoard application which is a cloud based tool that takes an idea through a structured process. This process will ensure that the idea gets spread throughout the organization and receives input as well as documents the idea, the process can be seen in Figure 1. This seven step process is also the core management theme when InventiveBoard are to



The **1.Idea** becomes placed into the application but is not launched until the idea owner decides to release it, making it possible to re-evaluate it. After this **2.waiting for approval** the idea gets launched for **3.social support** where other users of the application becomes able to give feedback and **4.vote on** the idea. After the social support phase all the feedback is **5.summarized** and serves a base for the decision to make this idea into a **6.candidate**. The candidate is then further evaluated by a voting committee. After when the committee has pronounced a candidate that becomes the winner the idea becomes a realized **7.project** within the firm.

*Figure 1.*

educate their customers in how optimize their innovation process.

## Business that surrounds innovation

The innovation process can be useful for any industry, no matter if it is a non-profit organization or an organization that based around making a economic profit everyone needs the outcomes of a innovation process in some way. Looking at the spectrum of firms using the innovation process they can be organized accordingly to how active they are with utilizing their innovation process. Some firms can be seen working more intensively with innovation than other firms. If this group of innovation intense firms were to fall under any kind of classification the Knowledge Intensive Entrepreneurial-firms, KIE-firms, would be very suitable. This is motivated by Malerba (2010) definition of what is the KIE:

*"...knowledge-intensive entrepreneurship concerns new ventures that introduce innovation in the economic system and that intensively use knowledge." p.4.*

Having this definition in mind and referring back to the introduction where the three steps of - How to learn, What to learn and realizing the new knowledge - where talked about these three steps can be interpreted as steps that are occurring quite frequent in a KIE classified firm. Not saying that KIE-firm is the only relevant segment to observe but rather seeing the KIE-firms as ones possessing a wide base of experience within the innovation field just because of their intense innovation work.



Seeing this from InventiveBoard’s perspective the KIE-firm is considered to be a customer that would heavily benefit from InventiveBoard’s expertise within the field of innovation. Where the KIE-firm is seen as customer that would have a lot of fuel, ideas, to the seven step process that InventiveBoard is offering to structure making the process less tacit.

## Problem description

Not knowing how to adapt, change or develop an offering can become the pitfall for any company making the innovation process vital, this was exemplified by the changes in the newspaper- and music-industry in the introduction. In order to avoid a pitfall a firm can take on certain activities to minimize their chances of becoming laggards on their market.

By certain activities the firm must create input to their knowledge base. To create this knowledge expansion the firm has in general two options. Either the firm can look for external input by analyzing competitors, trying to see new trends among customers or dig into newly discovered technologies. To create internal input the firm can produce new knowledges by either emphasizing on Research and Development, R&D, or look internally to create new constellations of already acquired knowledges. (Baron, 2006) No matter if a firm chooses to look for the knowledge externally or internally the common numerator will be about how to do the organizing. With organizing the author refers to a firms ability to conduct effective management of their processes. When applying the organizing aspect to the innovation process it is perceived in this thesis to be

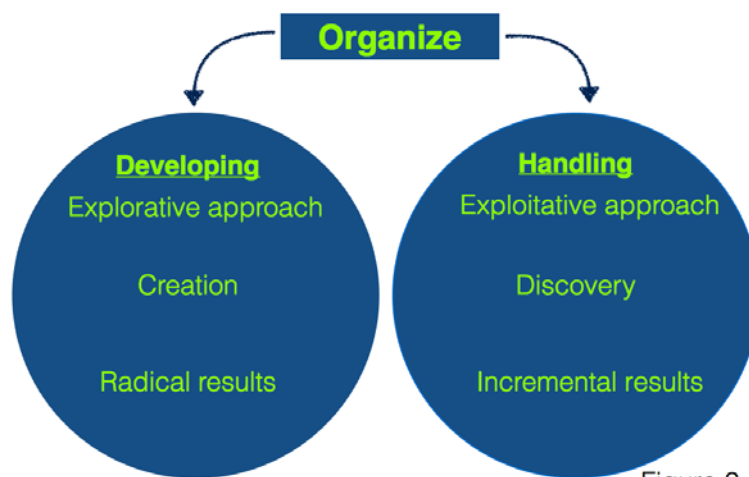


Figure 2

about two distinct pathways, developing and handling.

According with Alvarez, Barney & Anderson ( 2012) the developing aspect can be perceived in this thesis as activities that are linked with coming up with new ideas or solutions, having a so called explorative approach with the innovation process. This approach implies that the aim with the innovation process is to discover new things that the market has not seen yet, making the outcome of the innovation process to be perceived as radical.

The handling refers to actions that are enabling the development to take place. Are the KIE-firms using any specific tools or do they have any special routines to ensure that they develop in the right directions. With Alvarez, Barney & Anderson ( 2012) reasoning this pathway can be seen as a more exploitive one where the offerings are created out of already known knowledge where known knowledge is referred to as:

*“... like lost luggage at a train station, waiting to be claimed by some unusually alert individual.” (Alvarez, Barney & Anderson, 2012, p. 305.)*

By analyzing KIE-firms on how they do to organize themselves, in regards of innovation, the innovation process will be depicted from a practical user perspective. This information will work

as market knowledge for InventiveBoard so that they are able to understand the needs of various customers and adapt their offering with what different industries are asking for. .

## Research Question

To tackle this market research the following research question has been chosen:

How do potential customers, in the KIE segment, to InventiveBoard organize themselves in order to develop and handle incremental and radical innovations?

Since the research question is trying to answer many things at the same time it will become useful to break it down and explain it as follows: "How do potential customers, in the KIE segment, to InventiveBoard organize themselves..." Sets up a context for what kind of sample that will become relevant for this study. "...in order to develop..." What kind of actions are taken to make progress in coming up with new ideas, how are KIE-firms developing the ideas they are having..."... and handle incremental and radical innovations?" Implies on what kind of tools or methods are currently used to ensure that the innovation process is as productive as possible.

The developing and handling aspects will also become the structure for organizing the empirical results. The order of having developing first is motivated by the authors own opinion that a product, process or service preferably has to be developed first in order to be handled.

## Purpose

The general purpose for this thesis is to create a positive outcome between the Student, Gothenburg University and InventiveBoard. Where a positive outcome would be where a approved academically produced thesis provides InventiveBoard with insights about a customer segment of theirs as well as effective working ways.

## Goals

This thesis can be said to have three different stakeholders; Gothenburg University, InventiveBoard and the author who all have different motives for the thesis

Gothenburg University, gathered from the GM Master Thesis Document:

- Acquire more in-depth knowledge of the major subject/field of study
- Independently search and apply theory and concepts to the problem or phenomenon under study.
- Independently select, justify and apply an appropriate research method for the research to be performed.
- Demonstrate the capability to use a holistic view to critically and independently identify, formulate and deal with complex issues/case(s) .
- Critically and systematically evaluates and integrates knowledge from different sources.
- Demonstrate verbal and written communication skills to clearly present and discuss a clear and well-structured account in English.
- Reflect on his own research process and outcomes.
- Finish the master thesis within the time period as specified by the Graduate School.

InventiveBoard:

- Gain an understanding for how the potential customers are working with innovation.
- Exposure to a problem that InventiveBoard intends to solve through their offering.
- Getting to know potential customers.

The author:

- Gain practical experience by realizing gained knowledge from the Master of Science program in Knowledge Based Entrepreneurship.
- Networking, getting in contact with individuals who has been part of realizing their expertise into a business.

## **Delimitations**

This section will present what will be delimiting factors for this project. By limiting the author refers to certain aspects that will set the boundaries for this study.

The main limiting theme for this project will be time. If the project would have been longer a larger sample could have been aimed for. In this thesis six firms have been interviewed. A sample consisting of more firms may result in a more nuanced perspective of the customer segment KIE-firms but it was not doable within this time frame. Another limiting aspect has been the willingness among KIE-firms to participate. Every firm will not consider themselves to have time to participate or are just not interested in being interviewed. Other things that restricted the variety of firms searched for were location. The sample for this study will mainly be gathered from the Gothenburg region. This will keep the costs down and save traveling time for the author, which are not unlimited.

When exploring scientific databases for the frame of reference the following search words and phrases were used: Innovation, Absorptive Capacity, Innovation tools, Handle Innovation, Develop innovation, Knowledge Intensive Entrepreneurship, Radical innovation, Incremental innovation, Innovation processes, Innovation management, and Learning.

These search words and phrases has limited the field of articles found that has become the theoretical base for this thesis. The search results on these keywords will generate many more articles than the author is able to read during this project. To tackle this limitation the author has used literature reviews to grasp key articles and relied on the amount of citations an article has had.

## **Frame of reference**

This section intends to present central expressions gathered from the academia that will help the reader to grasp the context surrounding this thesis. By having developing and handling as the two main aspects to consider in the research question the different fields presented in this frame of reference is thought to give a understanding for what is needed to drive the developing aspect as well as providing a understanding for how to handle already possessed knowledge. First the characteristics of the KIE-firms will be described. This section will provide a definition the KIE-firm as well as different classifications a KIE-firms can have. The motive for this is part is to understand the nature of the KIE-firm. The next section will present a general overview of innovation. In this part insights are given on how innovation has been perceived throughout time and modern examples of innovation outcomes. Innovation can be said to have two kinds of outcomes either incremental or radical which are therefor also talked about in this heading. The innovation process plays a central role in the research question and is therefor very relevant in this chapter as well. The last section deals with the aspect of learning, a firms absorptive capacity. The purpose with this section is to gain a wider understanding for when the sample may be talking about how they actually do when they are broadening their knowledge base that works as a base for creating innovations.

## Knowledge Intensive Entrepreneurial firms, KIE-firms

What is a KIE-firm? What are their describing traits and in which industry's do they operate in? To start of depicting the phenomenon of a KIE-firm Malerba (2010)says that :

*"...knowledge-intensive entrepreneurship concerns new ventures that introduce innovation in the economic system and that intensively use knowledge." p.4.*

This is a very wide definition and that goes quite hand in hand with how McKelvey and Lassen (2013) sees the purpose of a KIE-firm as;

*"The KIE venture is designed in order to respond to one or more innovative opportunities and these opportunities can emerge from things such as new technology, new markets and new ways of using internal and external resources." p.6.*

As implied by its definition knowledge becomes very central for this type of firms. According to McKelvey and Lassen (2013) they see that there are three main categories of knowledge relevant to posses for starting up the KIE-firm:

1. Scientific-, technological- and creative knowledge that results into new ideas and opportunities.
2. Market knowledge, knowing the customers and how they act on the market.
3. Business knowledge, refereeing to the management and structure of internal firm processes.

The KIE-firm origins out of three different categories of knowledge pools which are according to McKelvey and Lassen (2013): Academic-, Corporate- and Independent spin-offs. The three categories indicates that the KIE firm can be allocated in a wide range of industries making it harder to say it should be a industry specific phenomenon.

*Academic spin-offs* are ventures that has originated out of a university setting where the main management team usually consists of professors, researchers and students. This management constellation are working with exploiting a piece of intellectual property created in an academic institution. A key driving force for generating these kind of spin-offs are rooted in how universities enables for exclusive licensing or not. If universities allows for exclusive licensing they will increase the shareholders possibility towards obtaining a profit in the end if the project turns out to be a success, strengthening the economic incentive for backing a academic spin-off. (Shane, 2004)

*Corporate spin-offs* are ventures that are offsprings from larger company's and their knowledge base. It is usually the case that the larger company has taken a managerial decision to introduce a new concept through a new separate company, perhaps due to that the new concept is outside there current scope of offerings. This kind of startup provides the corporate spin-off with an already established business network as well as a tutor that will guide the corporate spin-off to succeed.

*Independent spin-offs* are the ones who are not backed by anyone except the dedication and knowledge provided by the founders. The key knowledge base for these spin-offs are usually based on previous market knowledge owned by the entrepreneur. (McKelvey and Lassen,2013)

Out of the three types of KIE-firm structures described above it is the corporate spin-off that has the best record when it comes to growth. Studies have shown that the academic spin-offs tends to only expand half as fast and the independent spin-offs were only expanding a tenth as fast compared with what the corporate spin-offs performed. This observation indicates that the source of knowledge seems to affect the later performance a company will have. (McKelvey and Lassen,2013)

In this section the KIE-firm has been described to origin out of three fields: academic, corporate and independent spin-offs. This provides information about what to expect out of the sample and understand the motives that drove the start-up. This section has also provided indications on that corporate spin-offs tends to be more successful than the other two KIE-categories. Relating this to the research question the organizing of the corporate spin-off or making a comparison to other KIE-firms might provide input on key factors when running this type of firm.

## What is Innovation?

Innovation can be considered to be the development process where the results can be described as either incremental or radical. This section relates to the research questions by depicting the innovation field to provide an understanding for what KIE-firms are trying to develop and handle.

To backtrack what has caused a result to become classified as incremental or radical Utterback (1994) sees that the incremental innovation process is mainly driven by managerial skills, where the knowledge of knowing how is considered most valuable. In regards of radical innovation Utterback sees that as a more entrepreneurial process where something newly developed needs guidance through creativity to find its way to the market. Leifer et.al (2000) mentions a similar perspective where incremental innovation could be referred to as exploitive and radical as explorational. The exploitive perspective refers to utilizing managerial skills to optimize already acquired knowledge where as the explorational aspect will focus on new unexplored ways of satisfying the customer, in line with Utterback (1994) reasoning.

When looking at innovation over time the dynamics of it can be described through a S-curve where the life cycle can be seen to follow a S-shaped curve. Where the lower portion of the S is supposed to be describing the early stage of an innovation, indicating that the product or service still needs some convincing marketing in order to break through. When the innovation has been accepted by the market it takes off in a rapid growth, which represents the middle part of the S, until its forced to make room for new innovations, and the cycle continues. An example of this would be the typewriting industry that has gone from manual writing to benefit from the electrifying era to word processors to finally being incorporated into the personal computer's word processing software to get the job done. (Utterback 1994)

The process of innovation is described by Dodgson, Gann and Salter (2007) to have five generations during the 20th century. The first generation took place during the 1950 and 1960 and emphasized a push strategy meaning that if money was invested into R&D it would create output that stimulate the market. The scope of this reasoning was mainly applicable for science based industries indicating that the second generation would imply something more general. During the early to mid 1960s the second generation was starting to become established. Instead of just pushing out products and services to the market the customer was taken into consideration. The second generation were to be about the demand and how it geared innovation processes towards satisfying it. The third generation is a merge of the previous generations linking the push and demand themes in order to create a iterative feedback climate that nourishes interactivity within the organization. With the fourth generations collaboration with external parties becomes incorporated into the iterative feedback process increasing its complexity. Advancing to the fifth generation involves more strategy thinking, incorporating strategically chosen customers, suppliers and innovation clusters. As each new generation takes over the process becomes more comprehensive by involving more stakeholders for each generation.

When summarizing the search for a definition on innovation it can be said to have just as many definitions as there are industries out there, indicating that innovation can be considered a dynamic expression that adapts with its industry (Baregheh, Rowley & Sambrook, 2009). Therefore

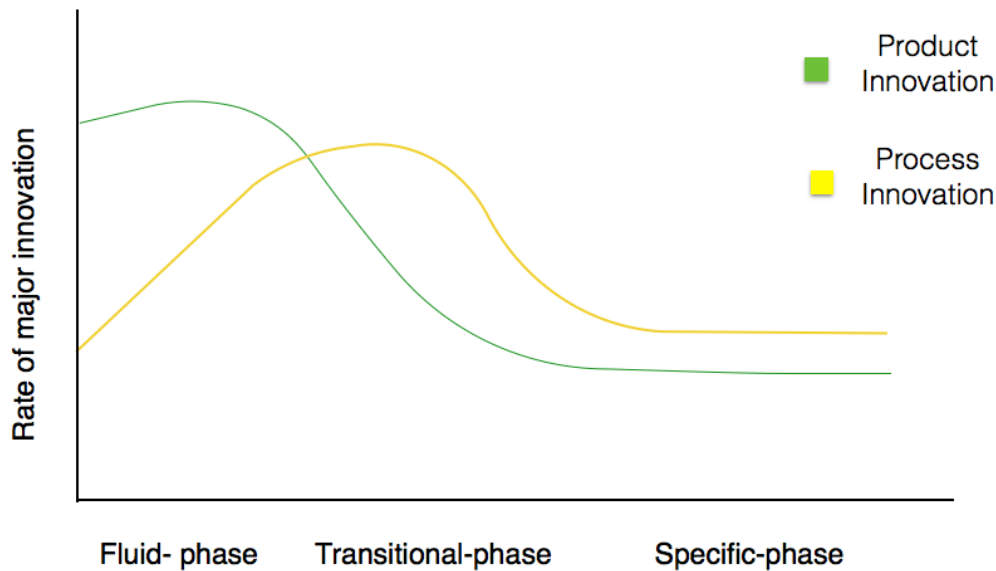


Figure 3.

Damanpour's (1996) wide definition of Innovation can be seen as a bridging way of capturing the phenomenon:

*"Innovation is conceived as a means of changing an organization, either as a response to changes in the external environment or as a preemptive action to influence the environment. Hence innovation is here broadly defined to encompass a range of types, including new products and services, new process technologies, new organizational structures or administrative systems, or new plans or programs pertaining to organizational members."* p.694.

Within the arena of innovation there are, as the definition mentions, four platforms where innovation can take place. It can be the organization, a process, product or a service that undergoes the innovation process. The outcome from these four may vary but their overall objective is the same, enhancing the initial competitiveness. Research has shown that there is an interdependent relationship between product and process innovation. This relationship can be seen by looking at newly introduced products where the innovation focus for a product will in the beginning mainly be emphasized on developing the product and as the product becomes better there will be less room for new enhancements. The diminishing chances for creating product innovation instead makes more room for process innovation which tends to be the successor, see Figure 3 below for a visualized model of Utterback (1994) reasoning on this.

With this background the following parts of the thesis will look upon innovation from a corporate perspective where innovation is considered to be one of the key drivers for achieving a competitive advantage by enhancing offerings to outperform competitors in quality, price or newness which is strengthened by Dogson, Gann & Salter (2008).

### ***Innovation examples.***

**Hilti, *service-* and *organizational-innovation*:** Hilti was a company focused on selling power tools to customers in need but these times were to change. By digging deeper into the logic behind their current business model they came to re-evaluate their way of satisfying their customer. Instead of selling power tools Hilti changed focus towards wanting to please the basic need for many of its users, to be able to have functioning power tools when it is needed. This generated the Fleet Management program which in exchange of a monthly fee allows customers to have access to wide range of Hilti power tools when it is needed the most instead of purchasing them. This action were to enable customers to become more agile in their

## Incremental innovation

Incremental innovation can be seen as the most common version a organization can undertake in the daily work. The process can be described as making small improving steps to a product, process, service or organization. (Utterback, 1994) One motive for it being favored over radical innovation is that it is seen as quick way to generate growth rates demanded by for instance shareholders.(Leifer et.al, 2000)

In regards of having the ambition to answer the question of how long the general incremental innovation process takes Leifer et.al(2000) sees the incremental innovation process as a formal one that has a project timeline of six months up to two years. In the process critical events are easily revealed due to the relative low level of uncertainty that comes with the previous knowledge base. This further strengthens the incremental innovation process to be one that relies heavily on managerial expertise in order to succeed.

The incremental innovation process is one that can take place in numerous different forms and to provide som structure Dogson, Gann & Salter (2008) picks the process apart and gives the following motives to why firms engage themselves in it:

- *Seeking cost advantages over the competition:* Industries were this would be considered important are the ones were products are produced in bulk, such as the paper industry for instance.
- *Making minor modifications to design:* Releasing a product that has only changed color from prior version. One example could be when mobile phone comes in a black color labeled *the black edition*.
- *Create organizational routines, procedures, and standards for economic production:* Mainly to enhance the quality assurance process. An example of creating value is through incorporating the ISO standards. It creates the possibility to judge parties upon the same premises.
- *Adding features to existing products:* For instance making a mobile phone waterproof.
- *Re-innovating— making changes to design after their first introduction and then quickly launching them into the market:* The clothing company Zara's agile production where they constantly shift their product line towards what the current trends are in a specific region.
- *Branding:* Apple was the most valued brand 2013 according to Interbrands list *Best Global Brands*.
- *Developing a reputation for product quality:* High end products e.g Bang & Olufsens whose ambition is to be known for having a exclusive product portfolio that is supposed to combine technological excellence with emotional appeal.
- *Learning from users and customers:* This can also be interpreted through Zara in their way of attaining info from the market about what specific regions appreciate.

A part from these eight motives for incremental innovation Utterback (1994) reasons upon another more strategic motive for conducting incremental innovation. Besides that the incremental process aims for enhancing the competitiveness of the offering it could also be used to extend the life span of the intellectual property rights. By doing so a motive Utterback (1994) calls defensive innovation can be seen as complement to the eight previously mentioned motives.

With the small steps of improvement that has been described to be a synonym to incremental innovation it seems like this innovation outcome aint that hard to motivate for a firm. The results of this process are related to relative short periods of time, for instance Zara agile supply chain that shipped out cloths to there stores immediately as trends shift. This type of innovation outcome is perceived as the general communication that goes on between the demand and supply,

adapting the commercial offering with the growing awareness of the customer base. Linking this to the insight about the customer segment in this thesis this type of innovation result is thought to dominate during the empirical sampling.

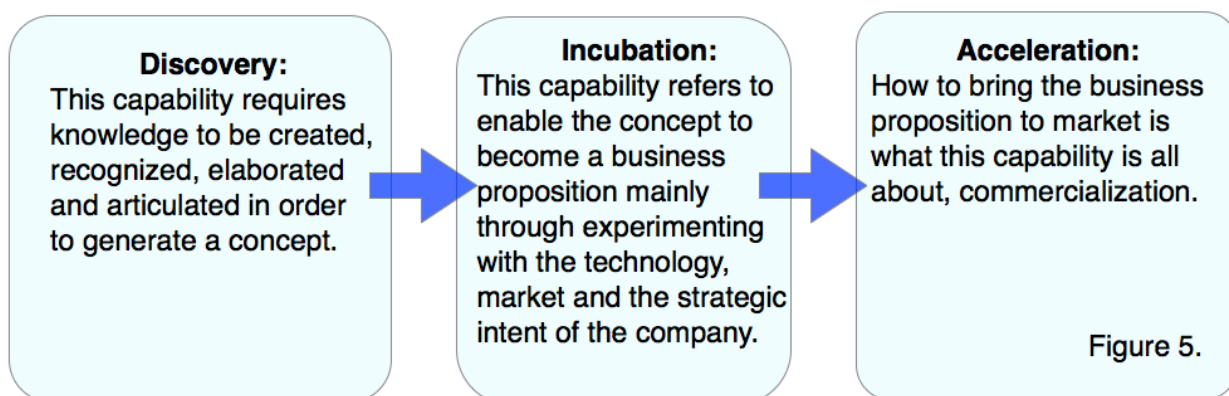
## Radical innovation

Schumpeter (1943) considered one of the academic pioneers within the innovation field reasoned that creative destruction is synonym with radical innovation. In that statement Schumpeter means that when something revolutionizing new appears on the market, substituting a previous way of solving a problem, it will close down other outdated business ideas. Through this kind of break through innovation dominant designs are usually born paving the way for branch standards in regards of features, forms and capabilities (Utterback 1994).

Leifer et.al (2000) perspective on the radical innovation process is that it is considered to be an outcome of a long term project, usually 10 years or more. The process is usually quite shaky where killings and revivals are not considered to be uncommon scenes. The idea generation process for a radical project can be conducted throughout the entire lifecycle. Due to the irregularities the only formal process for a radical innovation can either be in the beginning when venture capital is acquired or in the very end as the real value of the innovation is starting to take shape. Leifer et.al (2000) also states that if a innovation is to be classified as a radical one they consider that it has to fulfill any of the following three criteria's:

- Provide the market with a entirely new set of performance features.
- Increase the output by five times or more.
- Reducing the cost by 30% or more.

The above given criteria set that can be used for determining if a innovation is radical or not is actually just a result from the innovation process. Ayers and O'Connell (2005) takes one step back to provide a understanding for what kinds of capabilities there are needed to enhance the chances



of achieving such results out of the innovation process, see Figure 5.

Radical innovation can be perceived as the big savior, one that helps a firm to really become a market leader. This outcomes seems to be quite expensive both in resources and time which might make incentives for conducting innovation with this motive a bit harder. As described the firms usually undertakes these projects under a long time-span, usually 10 years or more, and during that time the business climate cant be guaranteed to be lucrative making it hard to prioritize this type of innovation in falling markets.

By possessing the three capabilities of discovery, incubation and acceleration and making all of them work effectively, which is not happening that often, Ayers and O'Connell (2005) gives a



glance at what the respondents might be needing in order to actively work with producing radical innovations.

## Tools to handle the innovation process

Both the incremental and radical innovation process can use tools to develop and handle what happens during the innovation process. Markman & Wood (2009) sees that there are three broad classifications of tools that are able to stimulate the innovation process, or design process as they like to refer to it. The first category of tools is based on extending the knowledge of individuals. The second category aims more on affecting the content of what people are thinking on. The third kind of tools provides a structure to the design process to make it more systematic.

*Tools that extend the knowledge of individuals and groups to provide additional domains that may be useful for solving difficult design problems:*

These types of tools are mainly aimed towards gathering data that is useful when dealing with a innovation process, building up a database of knowledge. The purpose with this relevant information is to make it easy accessed whenever needed to extend the knowledge base. It all sounds great with having this goldmine of information to extract from for creating knowledge needed but there is a downside, how should this goldmine be constructed? Sure the internet and all the information that it distributes can be seen as a goldmine but it has its flaws. Everyone does not share everything publicly over the internet unveiling the issue that a perfect database would encounter, disabling the user from searching for relevant knowledge. So a key issue for firms trying to create these databases is to fill it with relevant material, as well as external inputs, and make that searchable for their users. (Summers, Anandan & Teegavarapu, 2009)

*Tools that affects the content of what people are thinking about:*

The content of what people are thinking about can be referred to as mental models, pre-understandings about how to do things. These mental models posses the capability to become stimulated where a mental stimulation would be when running a mental simulation to predict an outcome. Linking this to the process of innovation this could be exemplified by a brainstorming session or solving a problem that requires a certain word or picture to be active in the solution. These tools are manipulating the thought process by strategically incorporating random input at certain points of the process to enhance the chance of ending up with a new novelty.

One issue with these tools are that they require a totally random input but since there are no pre-understanding for what the outcome may be it becomes impossible to know if the random input given is misleading in the creativity process or not. (Christianssen & Schunn 2009)

*Tools for structuring the design process to make the work for individuals and groups more systematic:*

For this category of tools Singh, Walther, Wood & Jensen (2009) highlights organized concepts that spur people to re-conceptualize problems. Their suggested way to structure the transformational process would be as in Figure 6, where the commuting scenario becomes the base towards designing a relevant bicycle.

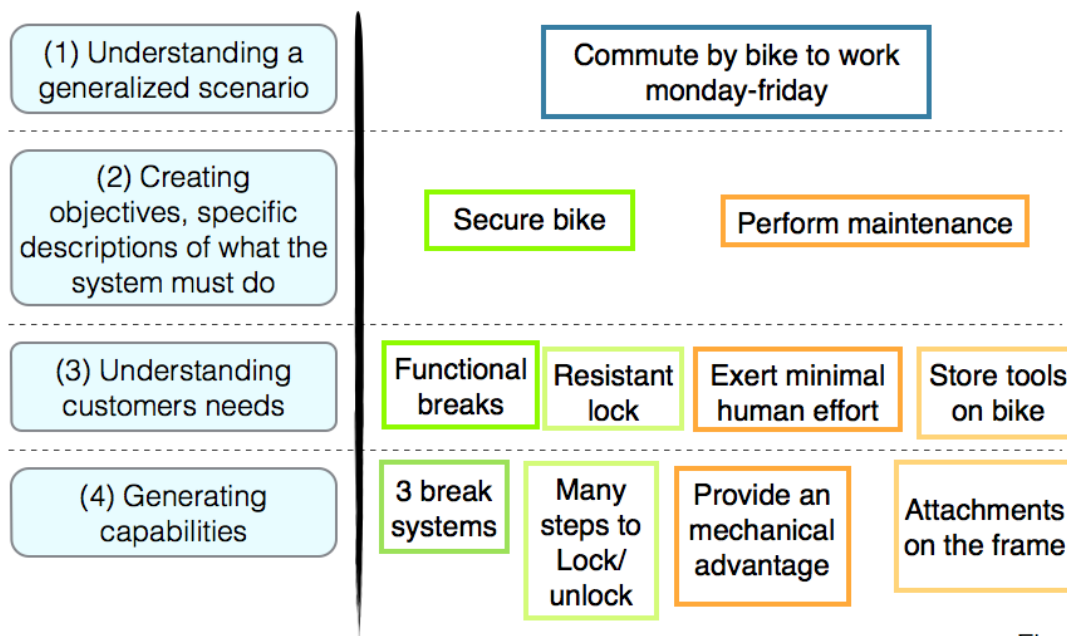


Figure 6.

Figure 6: (1) Starting of by understanding a certain scenario, in this case commuting by bike. (2) Based out of that a set of objectives are created determining what features are needed, creating a secure bike that can undergo maintenance. (3) Taking this objectives and process them through the opinions of the customer to understand their needs, going from the objective of a secure bike to functional breaks and resistant locks. (4) Generating capabilities based on the needs of the customer e.g. functional breaks indicated a possible need of a third breaking system.

Another alternative way of organizing the transformational process is through C-K theory. (Hatchuel and Weil 2009) By adapting to this structure the transformational process is being dealt with in two different expandable spaces, the concept space, C-space, and the knowledge space, K-space. Where the K-space gathers what we know today, or points out what we do not know. Based on this existing knowledge concepts are created and divided into sub-concepts. These sub-concepts becomes a guide for discovering new knowledge areas that becomes the foundation for new concepts, and so continues the process.

The different types of tools will make it possible to classify what the responders are saying making it evident to see if there are any preferred motives behind acquiring and using a innovation tool.

## Absorptive Capacity

The concept of Absorptive Capacity is according to the Lane et.al (2006) quite overlapping with other areas that has focused on organizational research and practices e.g. organizational learning, strategic alliances, knowledge management and the resource-based view of the firm. The main motive for not depicting any of them correlates with the sample chosen to investigate in this thesis, KIE-firms. Absorptive capacity is said to increase the speed, frequency and magnitude of innovation, especially incremental innovation, which later on gives birth to new pools of knowledges within the firm. Lane et.al (2006) This feature correlates allot with the classification of the KIE-firm provided by Malerba (2010) where the KIE-firm is defined as by working frequently with knowledge to produce innovative solutions to the market.

Absorptive capacity refers to a firms ability of learn knowledge that is new to the organization. In Cohen and Levinthal (1990) article *Absorptive Capacity: A New Perspective on Learning and Innovation*, they are considered to be the first ones to define this phenomenon in a academic context (Durisin and Todorova 2007). Cohen and Levinthal (1990) early reasonings about absorptive capacity would be about how organization evaluates and uses external knowledge in order to recognize the value of the new information and assimilate it for applying it in commercial

purposes. This reasoning has since then been further developed by George and Zahra (2002) where they consider it to be four dimensions to the concept of learning through absorptive capacity:

*Acquisition:* In order to acquire external knowledge the organization must have a internal knowledge base that identifies the external knowledge as valuable. The capability of identifying externally created knowledge is what this dimension refers to. The drivers for achieving absorptive capacity within this dimension is: the speed of the process to identify valuable external knowledge and which knowledge pathway that has been chosen.

*Assimilation:* This dimensions is based on how the organization understands the knowledge. How is the knowledge interpreted by the organization

*Transformation:* Recoding the external knowledge with the internal knowledge base in order to create synergies. This enables the organization to yield new insights on its competitiveness as well as opening up for strategic decisions to be made.

*Exploitation:* Making the new combined internal and external knowledge base into a core competency in order to exploit the knowledge to its full capacity.

Among these four dimensions George and Zahra (2002) sees that the dimensions can be categorized as potential absorptive capacity (PAC) and realized absorptive capacity (RAC), also recognized by Foss, Lyles and Volberda (2010), see Figure 7 for a model over the dimensions.

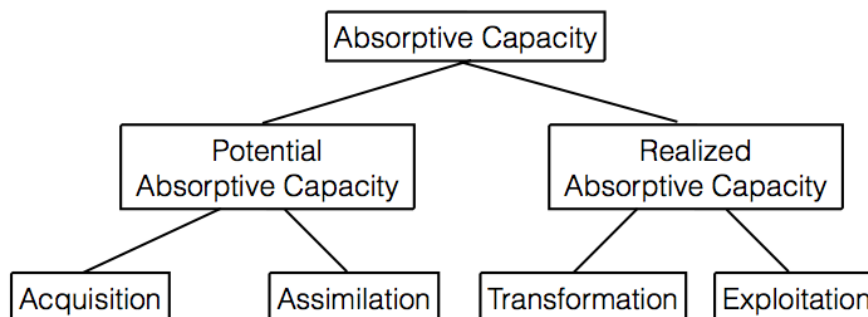


Figure 7.

Under PAC falls acquisition and assimilation which refers to how organizations are renewing their knowledge base through tapping into external knowledge pools, building PAC. The results of Zahra & George (2002) provides some insight on the dynamics of PAC. They state that PAC is positively influenced by allowing for cross functional teams in the organization, mainly because it usually connects individuals with different sets of skills. A natural outcome of enhancing PAC is that the organization will be more agile in reconfiguring resources when needed at a lower cost. This managing aspect of PAC is what becomes crucial when deciding upon what parts of PAC to realize. This issue with realizing something with high potential is that it could converge into a bransch standard quite rapidly, opening up the opportunity for other actors to become inspired by the innovation that could lead to lowered competitive advantages. (Van Den Bosch et.al, 2005).

RAC, which are the transformation and exploitation dimensions, usually takes shape in new innovations both launched internally and externally. Should a firm try to rush the production of a innovation it could generate short-term profits but in the long run it may become the first step towards falling into a competency trap due to a lacking knowledge base. (Foss, Lyles and Vollberda. 2010)

In this section the concept of absorptive capacity has been emphasized as a way to give an understanding for the dynamics behind a firms learning process. This is considered a very central aspect in this thesis since KIE-firms are defined as firms that are taking new knowledges to pro-

duce new business offerings. The two dimensions of PAC and RAC can be interpreted as a firm's capacity to build up knowledges, PAC, to later on be realized, RAC, as a commercial offering. These two dimensions will make it possible to understand and determine the learning capabilities a firm has and how structured they are in making PAC into RAC. This information will provide a understanding for how the KIE-firms are producing their innovations which directly refers to the innovation part of the research question.

## Summary

To sum this up the frame of reference will work as a guidebook to distinguish different themes and motives that originates out of the academic world with what the respondents may answer. Another purpose of this section has also been to provide the reader with an understanding of the theoretical concepts in the process KIE-firms undergo in order to handle and develop innovations. Definitions of the KIE-firm and how to label its origin has been given to provide a understanding behind the motives for starting up a KIE-firm. The growth rate seemed to differ depending on the KIE-firms origin which can say that the results of a firm may vary. The section about innovation has clarified what variables classifies an innovation to be considered of the incremental or radical kind. This section also brought up different categories of tool concepts that can assist when handling the innovation process. The final section has handled how firms actually do to take in and develop new types of knowledge to produce innovations, where the aspect of learning has been highly emphasized.

## Method

This section will present the strategic plan for how this thesis will be conducted. The thesis will have a qualitative approach and the motive behind that is related to the purpose, to get a in-depth understanding for how KIE-firms, which are the thought customer segment, organize themselves in order to develop and handle incremental and radical innovation processes, making this into an exploratory study. (Saunders, Lewis & Thornhill, 2007) This reasoning can be motivated through Bryman & Bell (2011) where they emphasize that a qualitative approach is considered beneficial when addressing a research question that revolves around a process that may vary and

that is being analyzed in its natural environment. In order to extract the data the semistructured interview will be utilized on a strategically chosen sample in the KIE-segment ( Olsson & Sörensen, 2011) . This structure can be motivated as a way for the author to guide the conversation towards relevant topics but leave enough space for the respondent to elaborate upon describing their situation.

## How to attain the data

No matter which method chosen for this thesis it will be useless if there is no sample to apply it on. Therefore attaining a sample becomes crucial for making this thesis happen. The first step will be to make a list over potential KIE-firms to contact, Locating the KIE-firms. Secondly a strategy for handling the initial talk will be needed, for this the field sales could be relevant, with the objective of booking a time slot for the interview. The third step will be the actual interview where coaching methods can be adapted. This adaptation is to make the respondent give away as much information as possible.

## Locating the KIE-firms

The population of KIE-firms are spread out all over the world and in order to distinguish and locate KIE-firms for this project DagensIndustri gasell list has been used. This list provides a yearly history of the fastest growing companies in Sweden. Another list that has been used is the 33-list which gathers Sweden's most promising technical start-ups. The lists has consisted of firms all over Sweden making the first criteria in the sampling process to contact those who are located in the Gothenburg region. The second step to qualify will be to investigate if the firm business is suitable to fit as a KIE-firm, this is done mainly by looking at their industry as well as their own public descriptions of their activities. The activities looked for are if they have knowledge intensive business offering, they have to produce new offerings frequently to meet the needs of their customers. After getting a understanding for the companies business they will be contacted both by mail and phone. Apart from the gasell- and 33- list the clientele list of Brewhouse, an incubator located in Gothenburg, has been used.

## Who to talk to?

If there is little success in getting a hold of a relevant sample it might become tempting to talk to whoever willing but luckily in this case that will not happen. In order to find a relevant individual a decisions maker, according to Rackham (1991), and in order to get to that individual a gatekeeper is usually the first obstacle to get around. A gatekeeper is defined as someone in the organization that has the authority to include or exclude external individuals to interact with the organization. The decision maker is someone who owns the process to that extent that they are able to effect it. Work roles that may be considered as relevant can for example be the CEO,improvement manager, board members or any of the founders. All these work roles involves collaboration in order to produce; this means that they are usually under a busy schedule that might make it hard to get a hold of them which may have been limiting to the sample gathered. Another factor that will determine who to talk to is if the respondent will agree upon recording the interview or not. This is considered a must due to the thesis being a one man show which makes the recordings vital to fall back to when producing the empirical result. ( Patel & Davidson, 2011)

## During the talk?

The interviews will be held face to face in Swedish in a semi structured way enabling the interviewer to color the conversation as it suits based on some prepared topics. The semi structured interview method will benefit the data gathering by allowing each interview to adapt to the ways

the respondents answer, this is to make sure to capture the uniqueness in each situation in an exploratory way. To further enhance the exploratory perspective the interview questions will not be sent out in advance to ensure that the respondents are giving a way a natural answers instead of having prepared something. (Saunders, Lewis & Thornhill, 2007) The questions asked are based on the theoretical framework in order to connect what the science field has discovered and compare that with the firms. The field of coaching will also become relevant when conducting the semi structured interview. By asking questions and supplementary questions based on: what,when, how much, who and how many will make the respondent more aware of how to interpret the question into their context. (Whitmore 2002). Besides the guidelines provided in the questionnaire the author is well aware of that the respondents may interpret the questions different compared to their initial purpose and give a answer according to their interpretation. When this happens the author has will notice the answer and rephrase or further describe what is the purpose of the question.

## Analyzing the data

### After the talk.

The recorded interview will be transcribed. Parts relevant to the research question will be extracted and translated into english which later on becomes the empirical output from each interview session, or decoding the material as Bryman & Bell (2011) would interpret it. In order to classify what the respondents has been talking about the questionnaire, see Appendix 1, has been designed to guide the conversation into the topics described in the frame of reference.

The data will then be structured according with the two main themes of the research question, developing and handling. The authors interpretation is that the developing theme refers mostly to the radical part of innovation and the absorptive capacity while the handling theme depicts answers regarding the incremental part of innovation as well as tools for handling the innovation process. A motive for not following the outline that the frame of reference has give is to increase the chances of that the respondents says something that connects with developing or handling. With an established empirical body the data then becomes picked apart and analyzed against all the fields presented in the theoretical framework.

### Not spreading lies.

To ensure that this project becomes as reliable and valid as possible the author will go by the following statements:

- The interviews will be recorded and transcribed. The motive behind this has been to make sure that the material from the respondents gets analyzed exactly as it was given during the day of the interview. The benefit though is that it has a higher internal validity due to interview method chosen.
- Having the interviews in Swedish will diminish language barriers between the interviewer and the respondent, due to everyone being Swedish.
- Along the thesis process a fellow student and tutor has been observing the progress and reviewing the outcomes. The main purpose of this has been to ensure that the one man project, as this has been, is not setting of in irrelevant directions.

## **Empirical results**

This section will present what the respondents has said that is relevant to the research question: How do potential customers, in the KIE-segment, to InventiveBoard organize themselves in order to develop and handle incremental and radical innovations?

Each section will firstly be presented by an introduction about the firm and followed by the sections of developing and handling of incremental and radical ideas. To clarify what the author mean by handling is how the firm does to manage the incremental and radical ideas will be about how the firm does to manage the innovation process. The developing section will be about how the firm proactively tries to enhance their innovation processes.

### **Diadrom**

Diadrom is a IT-company that works with diagnostics of products that has allot of software in them e.g different systems in a car, truck, military equipment, welding machines etc. The purpose of Diadrom's products are to enable configuration, troubleshooting and interface for new software releases. Customers to Dadrom are to mention a few Volvo, Atlas Copco, Scania and BAE. Diadrom was founded on the autumn 1999 by Fredrik Ljungberg, who became the CEO

until 2008 and later on chairman of the board, along with another investor. Fredrik has a prior career within the academia where reached the title of professor within the field of Informatics. Based on Fredriks former career Diadrom used knowledge and networks gained from the academic world in order to start up their business. The knowledge fields mainly utilized were within Informatics and Economy, where informatics stood for the core offering and the economy enabled a efficient management, equally important for running the business. Personal motives for starting up Diadrom were out of curiosity to something entrepreneurial out of knowledge that was already closely linked with a market The initial strategy was to make enough money within the company so that Diadrom could focus on creating corporate spin-offs that later on could be sold. In order to manage this Diadrom utilized the close ties it had with the academia by marketing themselves as highly knowledge driven. According to Fredrik the origin out of the academia has given them a skilled workforce in a very niched industry. Today Diadrom is one out five companies in a holding portfolio founded by Fredrik and his friend, operated as a very niched firm consisting of sixty employees.

## Developing

When Fredrik is describing an example of what development means to Diadrom he brings up an example where they use their software product as a base for further development, see figure 8 below.

To get up to date Diadrom uses the input from conferences, thesis-projects and of course their customers. This input is then later spread within the firm so it can gain additional input from the internal expertise. The conferences work as input for knowing what to expect from competitors and strategize upon that, Fredrik also says that it is not unusual that Diadrom goes to these events with their customers which becomes a great way to bond. By bringing in thesis-projects the aim is to explore new potential business areas, either based on Diadrom's products or exploring markets.

Figure 8: *Diadrom has their initial product which they use as a platform in order to adapt it with the customers' wants and needs . When Diadrom recodes the information by utilizing their internal knowledge pool they always tries to refine the needs. E.g symbolized in Figure 7 by the customer asking for a blue box but receives a triangle that is more effective instead. Fredrik motivates this process by saying that: "The customers usually don't know what they want" making it up to Diadrom to distinguish that out of interacting with the customers.*



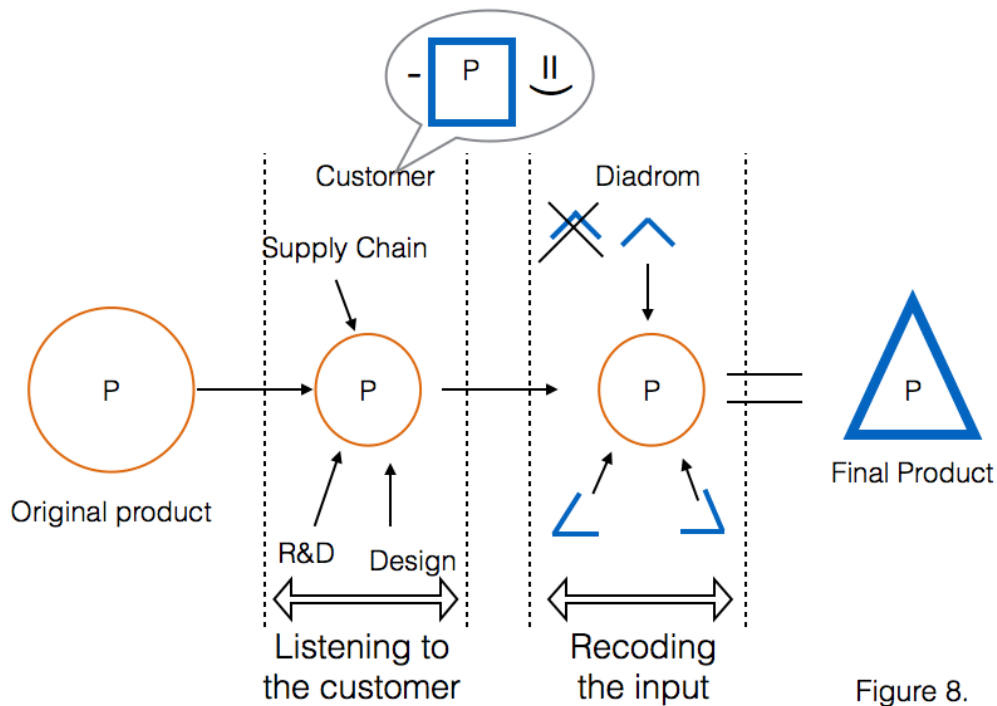


Figure 8.

Fredrik reasons that time becomes a factor of getting outdated where Diadrom could be considered to have some tendencies to just continue in a comfortable pace. Therefore the external interactions are so important it generates that "aha" experience, but to do this in a relevant way the knowledge gained from these interactions must be validated. If that knowledge is validated it usually becomes realized within Diadrom.

When Fredrik personally has received input from a customer about something that may have potential in it he tries to give the data structure by reasoning around it. By reasoning Fredrik means that he tries to analyze the potential by criticizing it through questions, this gives Fredrik a wider understanding for the dynamics of the potential. Fredrik says that this reasoning goes on all the time both within himself and with the CEO. This process is then later on visualized through e.g. an internal presentation.

## Handling

Diadrom experiences that they have a different motive behind working with innovation now a days compared to the firm's start-up phase in the late 90s. Fredrik sees the general growing communication ability the business landscape has experienced has brought in more competitors to their market. To deal with that Diadrom sees incremental innovation as a useful tool to keep competitors away. Apart from that Diadrom believes that incremental innovation is less risky, then diving into projects aimed for achieving radical innovations.

In general Fredrik sees that a company has two ways of adapting with the market either it will grow or shrink, it can not just be in a static state. In order to handle this process at Diadrom Fredrik says that they see sales as a key driver for which directions Diadrom should take. This can be seen by the biggest input for the innovation process is based out of the interaction with Diadrom's customers, getting in line with their needs. Fredrik says that it is quite usual within the software industry for customers to not know what it is they want. To make the customers aware Fredrik stresses the importance of Diadrom to package their offering in a way so that the customer easily can understand the value in it, even though they had no clue before.

Talking about handling ideas Fredrik says that there are always more ideas within Diadrom than they are able to implement, creating a quite delicate problem of prioritizing, basically choosing between which projects are considered to bear the most fruit. Even though the innovation work is considered very important sometimes Diadrom has to focus on other things forcing the innovat-

ion process to stand still, says Fredrik, but the overall goal is always that the innovation process should have a minimal time to market.

## Refind

The main idea behind Refind was first grounded in a company named Optisort through a man called Klas Dannegård. Klas worked as a professor at IT-university at Chalmers where his initial idea for the business was based around the thought of : why not let artificiell intelligence sort your waste. Based on this thought the firm started to develop a software, that is now considered to be the core knowledge base of this firm, with the ability to identify and classify different materials. The initial though behind the project came to fit well with the business logic of the recycling industry, sorting materials as thoroughly as possible to generate the highest second hand value as early as possible. 2009 Eric Melin was recruited through Chalmers Innovation to become the CEO of the firm and as the owner structure came to change Eric's responsibility for the firm grew. Right now the firm has six owners as well as six employees and the knowledge base for the employees is mainly gathered from the academia. It was through the needs of their first customer that the firm geared their software towards recognizing different kinds of batteries, and with that came also a need of understanding the mechanics behind making such a product work.

The first version of their battery sorting system was able to line up five batteries per second for recognition while their software had the capacity to classify twenty batteries per second. This indifference has been investigated and the second version of the system has the capacity to line up fourteen batteries per second instead. Since there are allot of different kinds of batteries out there Refind has built up a database of 2000 batteries which has become key knowledge within their intellectual property rights portfolio.

This has presently led Refind into a very nished market were they today consider themselves to be quite alone. But Refind also sees a diversity with their core software having the capability to recognize other materials. Other waste products that has been up for discussion to focus on are general households electronics e.g light bulbs or mobile phones. The overall ambition Refind has is to become experts within the field of waste management, creating the value out of what others consider garbage. Currently the firm is in a phase were they need to acquire a positive cash flow based out of their battery sorting product. To achieve a positive cash flow the main focus right now is on sales. Refind is currently active on the UK market but consider to have a global market potential with their offering.

## Developing

When asking the question about what development means on Refind Eric says that the dedication towards development is spread among everyone in the firm. Eric also points out that this is crucial for their business, since they are basically developing everything by themselves. Since their customers are their biggest input for what to do Refind dedicates allot of resources on gathering knowledge for solving their issues. Mainly this is done through physically being at the customers, researching open source communities and academic papers. To handle the development incentives gained from the customers Refind has done something unusual, according to Eric. Refind has hired a developer whose main purpose is to link what the research community has to say in their papers with the what their customers needs. Eric also says that if the developing process should result in a failure it gives valuable information on how not to do things.

A big contributor to the broadening of Refind's network have been their involvement in four EU projects as well as collaborating with research institutes all over Europe. Refind also tries to gat-

her input from their customers customer so that they can understand their point of views. Another key factor that Eric really points out for running a business like this is the requirement to work incredibly Lean, it is a must. Eric exemplifies this by saying that: " We can only dedicate resources if there it is a clear issue to us or if there is great potential in the project and if not the project must be developed during someone else's time."

The publicity gained from social media, vide-demos on youtube and blogs, has been experienced to be a good way to broaden the network of potential customers. Eric points this out by saying that Refind has received allot of feedback from just potential customers who has seen Refinds demo on youtube, of the battery sorting system, and asked Refind to come up with a solution to classify their return flows. The economic perspective on how lucrative a development path may be is what finalizes Refinds decision upon which direction to take. The optimal solution for Refind is when the development project is already funded by a customer.

The development of radical ideas is not considered to go on at all as of now at Refind, and if there were any it would probably be within the software division of the company, says Eric.

## Handling

When asking the general question of how the innovation process looks Eric thinks for a second and says that: "Refind does not really have a process that has ben set in stone. It has been quite obvious that Refind has been lacking structure in some of its projects resulting in over spendings." Eric describes that the only structure to be found as of now is through the spontaneous conversations that usually takes place on Jammer, since there are no official meetings at Refind. Eric motivates this by saying that this is the way everyone at the office wants it to be because everyone gets more time to work with their own projects.

Since Refind's first business scope did not include producing feeding system they have been forced to broaden and develop their scope. In order to do so Eric mention that they have used the following tools:

**Jammer:** A virtual project management tool designed to enable daily communication among the staff. The purpose of this tool has been to connect the different tasks and projects the workforce has been involved in making sure that everyone is up to date. When asking Eric what considers to be the flaws of the tool he says that its simplicity could be seen as both a flaw and a benefit. The flaw would be that it is quite limited when it comes to file sharing and if Jammer were to develop that it could easily become a to complex system.

**Consultants:** External consultants have been brought in e.g to develop Refind's mechanical section. Eric says that Refind has used consultants mainly to develop non-core competencies in order to make sure that Refind maintains their core competences internally.

**Prototyping:** Has been used as a trial an error process to fit the offering with Refind's customers. At Refind the first step does almost always consist of building something, getting a practical experience of what is considered functioning or not.

Since there are no currently active actions towards developing radical innovation there is not much handling it either, even though there is a present awareness that the software section has potential for radical innovations according to Eric.

## Jean Lycke

Jean Lycke is his own boss at his management consultancy company Emerentia Gruppen AB. Jean consider himself to be a very allround guy that has been working within all kinds of positions mainly in the health-care sector. Currently he is focusing on the management part within life science products. The formal knowledge gathered from the academias has played a key role in Jean's carrer were he has a combination of economy, engineering and medicine degree. Since Jean's company is a one man firm allot of his working ways are very influenced by his

customers, where every company has its own unique set of problem. Therefore this interview will give input on how Jean has tackled innovation in the life science companies he has worked for. To get a pre-understanding on Jean's beliefs he sees that one of the key things when running a KIE-firm is the human capital, possessing a skilled workforce that is able to perform within a scheduled timeframe is completely vital. When possessing a really good team there will immediately be a competition for them, making it utterly important to incorporate positive results of the firm with the good employees.

## Developing

The main fuel for the innovation is to make sure that you possess the right knowledge within the firm in order to run the business in a developing way. If there are knowledge areas where the firm is lacking Jean thinks that the knowledge should be purchased immediately from an external source. He motivates this by saying that if company's are not buying this knowledge they will prolong the knowledge acquiring process dramatically. Apart from shortening the lead time towards benefit from the knowledge the firm will also receive someone who is already an expert in the field that will probably lead to better results in the end.

A strategy used many times for enabling the development of ideas is through applying for grants from special funds. These funds all have their unique set of criteria on what is needed in order to become funded by them. Jean sees these funds as a tool to create extra resources out of, using the money to pay for development. In order to meet those requirements set by the funds Jean uses to hire consultants that are specialized in writing this kind of application reports to maximize the chances for getting access to their capital.

Jean reasons that the overall pace of an innovation project is given by the amount of resources allocated for it, and by resources Jean means money. In the beginning of a process the idea is usually too vague in order to convince investors, motivated by that the majority of idea providers are not that skilled in writing spot on business plans. This is usually the reason for why developing innovation projects takes off in such a slow pace, according to Jean.

## Handling

The general requirements for working with ideas, that Jean has experienced, is that it really demands an open mindset no matter if it is handling an innovation with a department focus or company focus. Jean states that the spreading of ideas should be premiered and under no circumstances are they allowed to be suffocated.

Jean considers the innovation work to go on all the time in all kinds of ways; idea generation, research, solution design etc. And every step of it needs to be documented. If not documented in the life science industry firms are usually forced to look back and try to recreate the motives they had for developing a product in a certain direction. This "looking into the past" process can be very costly and prevent a product launch.

To handle innovation Jean sees a clear difference if the innovation is based to be a service or a product. In a service based process there is usually subjective changes that are driving the process, not needed to be the best practice but it generates a drive to find new ways. In Jean's case where he is mostly active within the life science industry the innovation process for products is very formal. This is due to the vast amount of regulations the life science industry has, mainly to prevent low quality products from entering the market and harming the customers. In the companies Jean has been active in it is the CE and ISO regulations that are considered to be the biggest influencers for how to handle innovation.

When Jean contemplates on a question about radical innovation he says that it is very rare that something is perceived as radical and that those examples given are usually just for inspiration. The only thing that matters is how in line the offering is with the demand of the market, and that is usually through an incremental process. An example of that would be; as fast as a product goes to market it becomes evaluated for line extension. Jean explains that by line extension he means improving it by adding features of it or streamlining processes.

To finish this interview Jean states that"- For small KIE-firms innovation means do or die!".

## Findwise

Findwise got started 2005 as an independent start-up where three guys with more than a decade of experience within the Swedish IT-industry. They decided to realize their expertise in a company that would be specialized in the field of search technology. Besides their experience another incentive for starting up this company was based on a belief that the general company out on the market will produce huge amounts of information, which Findwise aims to make easily accessed through their search engines. Today the company has offices in Sweden, Norway, Denmark, Poland and Australia with over sixty employees. To get the company up and running Findwise started by getting to know potential customers through the networks of their previous employers, ensuring that the start-up would already have customers before Findwise entered the market. Some examples of customers are Ikea, SKF, and Volvo. In today's Findwise there are forty owners where the three initial owners still possess 76% of the firm.

To become an employee at Findwise the first step for every new employee is to go through their on-boarding process. Here the employee gets schooled into his/hers work role and gets a talent manager. Job wise Findwise consultants are usually involved in many different projects simultaneously. The current structure inside Findwise is based on three head processes: Sales & Market, Production and Talent management, which are all allowed to adapt to its specific market location depending on the need e.g. the Australian office prioritization may vary compared with Sweden's. For this interview one of the three founders, Urban Hedström, has been interviewed.

## Developing

Out of the three head processes: sales & market, production and talent management. Urban says that the innovation process has mainly been working as a support process for the production process. In order to create more room for the innovation process Findwise aims by 2016 to have a 75% recycling rate of their produced work, which now forces them to work very structured so that projects done can get re-used in the future. If this were to become a success Findwise sees themselves to have 25% time over to dedicate towards working with innovational ideas.

From past mistakes Findwise has learnt that there is not always a fine tuned search engine that will satisfy the customer. Disappointed customers have led to the discovery of new solutions leading away from their original core knowledge area, software expertise. This has paved way for creating different business solutions instead of just offering variations on a technical solution. In order to exercise the human capital to achieving things out of the box Urban says that almost 7-10% of the time at Findwise is allocated to competence development. Usual things to do are to attend a course, hold a course or learn a new tool.

Looking into the future Urban believes that the market of web-publication will experience big changes, making it possible to become the area where the biggest innovations are thought to be encountered.

## Handling

The innovation that is mainly being executed at Findwise is according to Urban to be of the incremental kind. Internal communication is seen as a key activity for making progress both through meetings and digital tools, the digital tools are:

Intranets: Consisting mainly of emails and chatting possibilities.

Jammer: Used in the same way as described previously in the interview with Refind.

SugarSync: A cloud based storage tool that provides the possibility of sharing data among numerous users and devices. A competitor would be Dropbox.

The firm has always been very keen on that the main focus should not only be on making money, says Urban. Urban follows this up by saying that this mindset enabled the firm to grow in all kinds of exciting directions, compared to if Findwise would have been managed more strictly towards making money.

When getting input for a idea Findwise sees no limitations in collaborating with other firms that they think are able to contribute with bundling the idea into a successful offering. Urban brings up an example were Findwise was involved in a project to create a booking-website linked to a virtual map. The purpose was to enable the customer to search for any destination on the map and get recommendations on what to do there. To start this off Findwise started a new company with another company that was specialized in digital maps, Urban highlights that it did not become a huge success but it shows Findwise ambition of engaging in a wide variety of tasks.

To centralize the innovation process Findwise has created something called FindwiseLabs which is supposed to work as a platform where all R&D-projects, university collaborations and innovation processes should be gathered. Except from functioning as a roundabout for innovation Findwise Labs is also thought to function as a showcase for external parties to get both an insight on the ongoing development as well as providing input to the projects.

To handle the constant developing technology Findwise has a technology responsible at each office which work is to scout the surroundings for any ongoing changes and inform the rest about where Findwise might be lagging. Time-wise the handling of innovation consumes different amount of time but in general Urban says that for any innovation to take place the process must be longer than one week, otherwise the customer will usually get a standardized solution that has not received enough insight to fit the purpose.

## Heliospectra

Everything started with a Canadian professor who decided to marry a Swedish woman. Out of that derived the concept that Heliospectra now is doing business out of. The knowledge the professor brought with him consisted of optimizing light-levels in greenhouses to create the best possible environment for plants. It also had the benefit of creating energy savings up to 50%, compared with standardized alternative technologies. The company is a academic spin-off that started to take off from the University of Borås, where the professor studied and it was by the assistance of their incubator that made it possible to realize this project. Even from the start the company has had customers; Heliospectra's first customer was the spice producing company Santa Maria who saw the benefits of implementing Heliospectra's light-systems. Today Heliospectra's light-systems is being used in all kinds of vegetables, plants and herbs producing processes, where the vegetables cucumber, tomatoes and paprika's are the segments that generates the most business. The draw back for operating within those segments are that they doing business with quite low margins on their products. This has geared Heliospectra to investigate the possibility of exploiting the herbal market more efficiently. Today the company consists of seventeen employees and ten owners where the majority of shares, 75%, are divided among three owners. Heliospectra's commercial offering consists of two products. The first product is a advanced light-system aimed to please a more science driven customer base, this was the first pro-

duct developed. The second launched product is a more commercial product aimed to be sold in large volumes to different industries. For this interview the CEO Staffan Hillberg has been interviewed.

## Developing

The general motive for Heliospectra to actively work with developing their offering is motivated by the strive of getting a unique product portfolio. This strive will act as platform to stimulate the human capital to utilize their niche competencies, which Staffan highlights is very vital for the wellbeing among their employees.

In Heliospectra's early beginning development meant having a close relationships with the research division in order to package ideas that were later on presented and discussed with potential customers. This process can be described as a funnel where the wide part of the funnel represents the vast amounts of research areas the firm investigated in the early beginning. The middle part of the funnel represents the focus areas chosen by the firm. These focus areas are then evaluated among different potential stakeholders to the firm. Once a relevant offering has been produced Staffan says that there comes a period for every firm when there is a need to create a commercial product. This need of making a commercial product re-organized the entire organization on Heliospectra to become customer driven. This reasoning made Heliospectra development department into a key collaborator with the sales department.

To ensure that there is a drive for conducting innovation Heliospectra has a standardized reward-system for anyone who generates a idea that leads to a patent.

As will be mentioned further on in the handling part Heliospectra also uses their external collaborators for developing the firm. When asked if they absorb any of the knowledge possessed by the external firms Staffan says that Heliospectra do learn but it mostly regards how to handle processes. To become just as good as the external firm at their specialized area Heliospectra would have to hire someone or reallocate resources. Apart from learning on how to manage processes external collaborators also helps Heliospectra with exercising their business network.

When asked what takes the least time to develop a product or a process Staffan says that the time to market for a product is usually many years while a process change or updating their software is usually something that can be executed within a three month period.

## Handling

When asking the question on how Heliospectra handles ideas Staffan answers that they have a quite formal process. Staffan also implies that they are quite structured compared with many others firms he knows of. Staffan develops this by saying that Heliospectra has hired external expertise for handling the intellectual property right aspect. This external resource is used as a meeting coordinator among internal resources, involving relevant people into their projects as well as lining up the strategy behind their innovation incentives. The agreed upon frequency between the meetings are one to three months. During these meetings relevant individuals are gathered, both internal and external ones, for evaluating the current customer base and in which direction they want to take. When Staffan answers the question about why Heliospectra takes in external actors he says that its mainly about optimizing lead times, becoming as effective as possible, as well as the structure the external firms tend to bring.

Usually the innovation work is supposed to lead to some kind of patent and when that is not the case the motive for it not being patented is that Heliospectra do not want to release their new knowledge to the market, which a patent would do even though it would exclude competitors for a while it might serve as a idea input among competitors for further development. A typical ex-

ample of this would be if a new algorithm is discovered, says Staffan. The strong initiative for allocating resources for handling the innovation process has come from the external investors that has demanded that Heliospectra shall produce exclusive intellectual property rights.

## Shift Design & Strategy

2009 two companies became one and Shift Design & Strategy was a fact. The two companies that merged were Stinct and Hampf Industridesign, where Stinct was founded by Patrik Westerlund 2002 and Hampf Industridesign was founded 1969 and runed as a family business. This merge was where the old traditional meet the new and it has allowed for the outcome to obtain a clear market position within the industrial design industry. As a industrial design company Shift provides functional designs to their customers where they emphasize the user experience as the main driving force behind the design. Usually the customers comes with an early stage technology and asks Shift to give their point of view on their solution. This has given Shift the chance to leave their design mark within a vast amount of different products genres. One example is their Lucas 2 which is a easy handled heart massage tool that acts as a helping hand for paramedics, enabling them to conduct other vital tasks in a stressed situation. The firm has four employees, all possessing a dual degree with at least one major related to the design field, and brings in consultants whenever needed. For this interview the CEO Patrik Westerlund has been interviewed.

## Developing

The human capital at Shift consists of individuals where all have a dual degree with a common denominator through a degree in design. This diversity plays a vital factor for Shift when they have to deliver in various creative projects, says Patrik.

Since development is what Shift is offering to their customers its something that is being conducted regularly. As mentioned earlier they handle ideas through brainstorming sessions and it is also through tool that they develop them. To develop anything out of a brainstorming session Patrik says that it has to be at least three participants, and it is based on his belief that it will enable the third member to take a step back and contemplate although the discussion would continue between the other two. One of the first things Shift does when developing something for a customer is to analyze the competition, this is not to gain input on how to design things but rather how to not design them. With this information Shift wants to ensure its customers are receiving a service that will make them stand out on the market.

As a input to the development phase Shift can bring in consultants to broaden the expertise when needed. Patrik says that this is what almost all kinds of development is about, bring in new knowledge to place it in another context to achieve innovation.

## Handling

To handle innovations at Shift the process becomes a synonym for diving into a design process. Based on wished outputs a sketch is usually what sets the process off. When Patrik answers the question on when Shift steps into the innovation process he says that it is usually to late. By to late Patrik means that the customer has already determined the features of the product leaving no room for further adaptations. Patrik considers that if a innovation should include design it should incorporated from the start in order for it to generate optimal results.

When asking the questions referring to how Shift handles the innovation process it becomes evident that it has two perspectives driven internally and externally. The internal process consists of having a visual brainstorming sessions where the creativeness of the participants takes shaft in creative sketches. This brainstorming sessions has developed into a ad hoc way where the Shift



members know each other so well that for an external it might seem like they are being excluded due to not keeping up with the informal communication that is taking place.

This informal way of handling innovations gets totally turned around when Shift are being hired for running the process externally at a customer. What customers asks for when they want Shift to lead a innovation jam is to produce some kind of seed towards achieving a radical innovation, well aware of that it might not result in a new radical product but it will highlight new ways of thinking. To pull this off successfully Shift utilizes a strict/simplistic concept to ensure that their management is being interpreted as they want to. Patrik says that the need for strictness is based on the interaction that goes on between different work cultures, engineers for example might have a culture that is very rule based. Shifts guidelines provides a platform where everybody involved knows the rules and acts by them. A common method Shift uses is called synectics where the participants are focused on making the unknown known and the known unknown. The main objective with this is to broaden perspectives and make participants become aware of alternative solutions. The synectics concept Shift finds very functional when the goal is to come up with new technological solutions or how to focus when positioning a brand. An alternative to the synectics concept used by Shift is biomimicry, how to decode ways animals and nature solves problems and incorporate that into a business, mainly used when solely addressing a product related event.

## Analysis

In this part the information gathered from the semi-structured interviews will be compared among the respondent and contrasted with the theory. To sum up what the respondents have been saying Table 1 provides a quick summary of what fields each respondent has been talking about.

Table 1.	Diadrom	Jean	Refind	Findwise	Heliospectra	Shift
<b>KIE type:</b>						
<b>-Academic:</b>	X		X		X	
<b>-Corporate</b>						
<b>-Independent</b>		X		X		X
<b>Innovation:</b>						
<b>-Incremental</b>	X	X	X	X	X	X
<b>-Radical</b>						X
<b>Absorptive Capacity</b>						
<b>-PAC</b>			x			x
<b>-RAC</b>	x		x	x		x

### KIE-classification

Out of the six respondents three could be classified as academic spin-offs, Diadrom, Refind and Heliospectra, and the other three were to be classified as independent start-ups, Jean, Findwise and Shift. Not having any corporate spin-offs among the sample must be taken into consideration when reading the analysis on what the KIE-firms have been saying.

### Incremental innovation

All of the six respondents states that they conduct incremental innovation. When the respondents have further developed this it has become possible to classify the statements according to the nine motives behind incremental innovation, see Appendix 2. What every respondent had in common was that they utilized input from their users and customers to achieve some kind of incremental developments. As an opposite observation none of the respondents stated anything about that their incremental innovation incentives could be linked with achieving cost advantages over competitors nor making minor modifications to design. One firm, Shift the design firm, stood out among the sample having the most dynamic motive for working with incremental innovation.

In regards of the so called defensive motive it can be interpreted to have been described by: Diadrom, Jean and Heliospectra. Where statements that refers to building up intellectual property rights has acted as classifier.

Being said that the incremental innovation process would mainly be about managerial expertise the respondents answers towards how they managed it varied. Some firms said that they did not have any or very few routines where others used structured ways to ensure the progress of the innovation process. The firms with no or few routines admitted that there could be improvements made, where improvement were described as making the innovation process more formal.

#### Radical innovation

There were only one firm that actively worked with trying to produce some kind of radical output, the design firm Shift. Making the material for this section to analyze a bit thin. In Shifts case they said that they had no problem generating radical ideas but there were no guarantees that it would lead to a radical outcome. This could be interpreted as Shift possessing the discovery capability but lacked incubation and acceleration capabilities. The majority of respondents considered that having a radical focus with the innovation process was just to risky, a radical outcome was more just based on luck or demanded to much work in relationship to the success rate. This unappreciative attitude towards producing a radical outcome can be linked to the general uncertain nature of radical innovation described in the theory section.

#### Tools for handling the innovation process

To handle incremental and radical ideas parts of the focus has been to shed light over what kind of tools and activities the KIE firms have been using. The general categories that has been described by the respondents has been:

*Softwares:* Mainly used to enable communication within the firm. Where one ambition has been to ensure that everyone has the possibility to familiarize themselves with current ongoing projects in the firm. Findwise and Refind were the only twos who used the same tool, Jammer. The description given about Jammer was very similar where both firms emphasized the fact that it really enabled the firm to come together when needed.

*External collaborators:* Within this category where both single consultants and entire firms has been mentioned among every respondent. The external collaborators has mainly been seen as a knowledge provider when handling ideas unfamiliar to the firm. How to utilize the external collaborator has varied where some respondents has been quite reluctant of giving the consultants to much of responsibility with the motive that the core competency should not get overtaken by the consultants. Others has seen the specialized consultants as a necessary must where their knowledge has been considered a vital factor for handling any innovation.

*Physical meetings :* A meeting today can take place in many different forms making the physical meeting described by the respondents as something that enhanced the possibility to communicate. Apart from regular meetings, a meeting where relevant individuals were summoned, Shift was the only respondent that mentioned brainstorming as a structure when having a meeting regarding innovations. It is quite interesting that Shift had a minimum criteria of at least three participants during their brainstorming sessions, it was being said to enhance the quality of the results.

The general motives for using these tools in the handling context has been to enable communication and receive input in a structured and open form. The tools has also been seen as a way to develop innovations. What can be seen as central in this process were the importance of the communication ability. When comparing the tools and concepts the respondents described with the three tool classifications: affect the content of what people are thinking on, structure the design process and extend the knowledge of individuals can be interpreted as follows:

*Softwares:* Comes with a prepared process structure that enables its users to communicate and store data with the objective of broadening the perception of an innovation among its stake-

holders. This directly makes the software fulfill two of the three tool classifications, structure and extending the knowledge.

*External Collaborators:* The purpose of this tool was describe to bring in both core- and additional competence to the firm. This would label this act as on that were both affecting the content of what the firm is thinking about and extend the knowledge base, also fulfilling two out of the three tools classifications.

*Physical meetings:* The interaction this tool allows for could be considered to fulfill all the three categories, where the results depends allot on the managerial skills and how effective the group is.

Processing the usage of the tools trough the classifications shows that one tool usually falls into two classifications, except for the physical meeting which could be considered to have all the three.

#### Absorptive Capacity

When looking at the answers given by the respondents on how they do to learn it has sometimes been a bit abstract. It can be interpreted as that all the respondents have been doing some form of acquisition and assimilation; going to conferences, being a part of EU-projects to broaden business networks, interacting with customers to understand their needs, reading scientific reports and bring in external parties to be a part of the innovation process. These are examples of what the respondents generally has been saying that indicates ways of building up PAC.

When looking for RAC capabilities among the respondents some answers have been easier to classify then others. Refind and Shift can directly be observed to have functioning acquisition, assimilation, PAC, and transformation dimension at their firms. Refind exemplifies this with how they have allocated resources towards analyzing the academic literature that surrounds their business and incorporating that knowledge with their classification systems. Another factor that can be seen as a lubricant for Refinds RAC is there attitude towards making sure that none of there core competencies were to be outsourced. This should place Refind in a better situation when realizing projects by minimizing the chance of falling into the competency trap. Shift's can be motivated by their choice of being a design firm to have the learning process embedded into their daily work with producing customized solutions to their customers. Both Diadrom and Findwise also produced customized solutions but their solutions were already based within established knowledge fields making their RAC lean more towards the exploitation dimension rather than the transformation one.

#### Summary:

This analysis has shown that the sample consists of academic- and independent-spin offs. In regards of what has been driving the incremental innovation process they all have in common that its been motivated by the input from their users and customers. Radical innovation results are not experienced as something controllable making it had to motivate why it should be strived for. The three general categories of tools described by the respondents can in general be said to fall under two out of three classification areas. The exception would be the physical meeting but to achieve all three classifications there would require allot of managerial expertise. In regards of absorptive capacity it was quite clear that all the respondents actively did activities that built up their PAC. In regards of RAC the analysis showed scattered efforts and results among the respondents.

## Conclusion and recommendations

The initial scope of the report was to reveal how a sample of KIE-firms actually organizes themselves when handling and developing incremental and radical innovations. The purpose with this has been to provide InventiveBoard with market insights about a customer segment that are highly focused on knowing how to learn, knowing what to learn and being able to realize that knowledge into their business, basically the ways of a KIE-firm.

As a market research the methods used, a strategic sample with semi-structured interviews, provided a relevant sample within the region of Gothenburg. The gathering of respondents was quite time consuming, a lot of firms declined to take part in this project. In regards of the empirical data that was sampled the questionnaire should have been sent out in advance. The reason for this is that the answers of the respondents varied quite a lot. It was tricky for the respondents to directly grasp the purpose of the questions when they were being presented firstly during the interviews, this was noticed by the various answers the responders gave to the same questions. None of the respondents were able to answer the research question by themselves but the sample together did. Taking into consideration that corporate spin-offs were not present in the sample, none was the research question designed to depict all of the three KIE-classifications.

## How do these potential customers organize themselves then?

For developing innovations, mainly with the aim of to producing incremental outcomes, the study has shown that this sample has consider the interaction with users and customers to be the biggest source for relevant input. This has been seen through the allocation of resources, usually time and money, performed by all off the KIE-firms to gain an understanding for what to develop. What can be concluded out of this reasoning is that there is a value in finding ways that would optimize the process of getting to know what the customer or user sees as valuable. This can be translated into the first recommendation to InventiveBoard: (1) *Make it possible for the external customer to provide input to the innovation process.*

For handling innovations the the main objective is to direct and connect communication flows. To do so the innovation process has partly been handled through the use of different tools. Where the tools has given the KIE-firm the possibility to connect different knowledge pools that has either not been physically present or located outside the firm. This can be interpreted as strong marketing feature that InventiveBoard can utilize when pitching themselves.

In general the conclusions can be interpreted to be quite modest. Solving a customer need is the foundation for every profit generating business. In order to create this opportunity a business must listen exactly to what the market is asking for and adapt its offering accordingly. This research question has done just that for InventiveBoard. It has initiated the communication with its potential customers making it possible for this startup to become a good listener and thrive on the market.

## Recommendations to InventiveBoard

(1) *Make it possible for the external customer to provide input to the innovation process:*

This implies developing a feature that makes it possible for the application manager to open up the innovation process to include customers in order to receive their input.

The easy solution would be if the application were to have an open area where the external customer could access a firms internal innovation process. This would demand a quite open innovation structure that might be considered jeopardizing for the process owner, keeping a too open agenda. By giving each customer a login instead to this open area could lower the risk for the process owner but it might also complicate the input process for their customers.

Another alternative instead of letting the customer directly into the application is to provide them with structured output from the application. This could then be presented in some form of a meeting giving the process owner a chance to receive input on the project. This can be considered as a more controlled way of having an open innovation structure. To make this happen the application would need to develop an output feature where everything regarding a certain innovation project is summarized. An issue might be to structure the information if it varies a lot between projects or is very large, one might also question how should the internal input be ranked when structured for instance? This can imply that the standardized structure would need to be supervised for each individual innovation project. Which it should because none of the ideas will be identical. The ownership of this managing process could initially fall on the idea creator, with the option to delegate this responsibility as the project progresses.

## Discussion

As was being described in the introduction a firm must have some kind of strategy to ensure that it stays alive in the ever-changing business landscape. To do so the firm was considered to know how to learn, make sure to learn the right things and be able to utilize the knowledge to gain a competitive advantage. The topics that will be discussed in this section are about the KIE sample.

The sample of firms investigated were to be of the KIE kind. In the analysis it was revealed that the entire spectrum of KIE-firms has not been incorporated into the sample. This was not a planned outcome but rather a limitation in the publicly available information about the firms. Nevertheless it is also important to remember that the research question was never supposed to depict all of the three categories of KIE-firms. Speculating in how the corporate spin-off might have influenced the empirical results the author believes the working ways of the mother company would probably be the biggest influencer to how this category of firms are working. This could have generated results leaning towards a more structured KIE-firm that could have been relying on the expertise possessed by its tutor to organize themselves effectively in an early phase. This could be motivated by the theory saying that this category of KIE-firms usually grows a lot faster than the other two's.

Another thing to point out that regards the sample is that just because that corporate spin-off were not encountered during the empirical sampling the author has no intention of indicating anything about the distribution of firms in the KIE-segment.

The core of this qualitative study has been to investigate a sample to build an empirical base around. One might consider a scenario where there would have been six other companies interviewed and how that would have affected the results? By playing with the scenario of having an optimal sample that represented the entire KIE spectrum and very aware of why they acted as they did. This scenario is considered by the author to be quite plausible. This is because the sample used for this project has been providing the author with descriptive information to contrast against almost every theoretical section in the frame of reference. The author considers the absence of radical innovation outcomes to be quite natural, since everyone cannot become number ones within their field. But what was a little bit strange was that no one had any outspoken visions about becoming number one. It did not seem to be a part of their reasoning at all. The biggest focus was always discussed around meeting the needs of the customer, which is of course very vital. But there is nothing wrong with at least having an ambition of becoming number one.

## Future Research

In regards of future research there are numerous fields that would be considered relevant for enhancing awareness regarding subjects brought up in this thesis. Both the understanding of a customer classification such as the KIE-segment as well as the success factors related to virtual innovation management tools.

*A complementing study that has all of the three KIE-firm types:* Catching the entire KIE-firm spectra making it possible to compare that project with this to see how it might differ. For this the same questionnaire might also be used and sent out in advance as a difference to this project where the questions were first presented during the interview.

*What features would maximize the use of an application that structures the innovations process?* Where the outcome is thought of describing what features InventiveBoards application may benefit from having.

*Investigating what is considered to be the success factors when incorporating an innovation management tool in an organization:* A focus here would be on understanding why and if there is a negative attitude towards actively working with the innovation process through a software. Another aspect is to investigate what is stopping employees from seeing the tool as a necessary must instead of just leaving it un-used.

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# Appendix 1

## Interview Questions

Question 1: How did this company get created?

Question 1:1: Which knowledge was needed, where did it come from?

Purpose: To get a understanding on where the knowledge base origins from, is it a distinct sector or a mix. It will help to categorize the answers if there are any patterns based on which KIE category the knowledge origins from.

Question 2: How do you handle ideas in your company?

Purpose: Get the respondent to talk about how they manage the ide-process, unveiling activities that helps realizing ideas.

Question 3: How would/ is a structured innovation process look like at your firm?

Purpose: Get input on how they conduct their innovation work, aimed towards radical or incremental activities?

Question 4: What does development mean to this company?

Question 4:1: Which tools were needed to develop that knowledge? exemplify?

Purpose: To get input on the companies own definitions of innovation. Also reveal the key tools they use in order to develop themselves, gives input on how they organize themselves.

Question 5: Do you have any strategical motive behind conducting incremental innovation? Purpose: See if it is for prolonging the IPR or unable to create radical innovations.

Question 6: Can you give any examples on when the firm has absorb external knowledge into the knowledge base?

Purpose: Get the respondent to talk about their absorptive capacity.

Question 6:1: Did that knowledge become realized/idle within the company?

Purpose: To see if it can be described as PAC or RAC.

Question 6:2: Why did it end up like that?

Purpose: Get the respondent to talk about success/fail factors

Question 7: Could you tell me a bit about your innovation process?

Purpose: Get input on their innovation process, focused on incremental or radical.

Question 7:1: How do you become affected by external innovations?

Purpose: Indications on if its incremental or radical ?

Question 7:2: Hur påverkade den eran omgivning?

Purpose: What is the internal belief on the impact their innovations are having

Question 8: How long time does a innovations project take in general?

Purpose: Indicate if there is a long/short term perspective in their innovation work.

Question 9: What does your learning process look like ?

Purpose: Get the respondent to shed light over how they do learn, relating the answer to their absorptive capacity.

## Appendix 2

### Areas for incremental innovation

	Diadrom	Refind	Jean	Heliospectra	Findwise	Shift
• Seeking cost advantages over the competition						
• Making minor modifications to design:						
• Create organizational routines, procedures, and standards for economic production				X	X	X
• Adding features to existing products:	X					X
• Re-innovating— making changes to design after their first introduction and then quickly launching them into the market:	X					
• Branding:						X
• Developing a reputation for product quality:			X			
• Learning from users and customers:	X	X	X	X	X	X
Defensive innovation:	X		X			

