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Towards a framework for identifying and evaluating business opportunities

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ABSTRACT

Identifying and evaluating attractive business opportunities is the first step towards success in the innovation process and launch of new products. Being successful in new product development is becoming increasingly important, particularly for technology companies because of today's global market place with accelerating speed of technological change. The aim of this master thesis is to develop a framework that can be used to identify and evaluate business opportunities for technology companies. A conceptual framework, called the business opportunity framework (BOF), was first developed from a literature review, which was revised and improved based on two separate studies at Ericsson AB. The first was a case study aiming to understand how a technology company identify and evaluate business opportunities. The second was an action research oriented study where the BOF was applied on two areas of interest in collaboration with Ericsson employees. The case study at Ericsson revealed that they use a structured approach for identification and evaluation of business opportunities, which is similar to the first version of the BOF. The action research oriented study revealed that the BOF is applicable and can help technology companies identify and evaluate business opportunities. The result from the two studies showed that the BOF can be a valuable tool but a few additions would increase the accuracy when selecting which opportunities to invest in. A second and updated BOF was therefore proposed. The authors suggest that the BOF is further tested through a cross sectional study to test if it can be generalized to other industries and complemented with an experimental study or a longitudinal study.

Key words: *business opportunity, technology company, opportunity identification, and opportunity evaluation*

Table of Content

1. Introduction

This chapter will first introduce the reader to the background of the study and the company where it has been conducted, Ericsson AB. The aim and research questions will also be presented followed by an illustration of the disposition.

1.1.   Background to the study

The development and launch of new products has become increasingly important in a global competition, which is becoming tougher for every year (Cooper, 1990). Preceding the launch of new products is the innovation process (Hüsig et al, 2005). The early stages of the innovation process, often referred to as front end of innovation, are particularly interesting since this is where the foundation of successful innovation is built. It is during this phase that new opportunities are identified and evaluated, ideas for new concepts and products are created (Koen et al, 2001).

One of the earliest steps in the front end of innovation is the identification and evaluation of business opportunities. Business opportunities are according to Koen et al (2002) a business or technology gap that a company or individual realizes, that exists between the current situation and an envisioned future. Business opportunities are thus the very first phase of the new innovation process. Identifying and evaluating business opportunities are thus a very important part in order to develop new products and stay competitive (Koen et al, 2001).

Even though the business opportunity identification and evaluating is very important for the innovation process, no scholar has presented a structured framework to guide the process. Instead the theory is scattered and mostly focus on a specific field of the identification and evaluation process. Porter's five forces for example describe how business opportunities could be identified in five different domains (Porter, 2008). However, it doesn't take technological change into consideration and wouldn't fully cover all business opportunities that emerge, especially in technology intense industries. Another example is Koen et al (2001) who propose a range of concepts that could be used in order to identify business opportunities. However, they provide only few explanations on how these analyses should be carried out and in what order.

It is also not clear whether a structured process facilitates or inhibits the business opportunity identification and evaluation process. Nobelius & Trygg (2001) argue that it does not make sense to develop a best practice process for identification and evaluation of opportunities since every case is different from the other. However, according to Hüsig et al (2005), a structured process in the front end of innovation does promote success.

The history, further points to the fact that the business opportunity process isn't always working properly and is full of examples where companies have failed to identify and evaluate business opportunities. Nokia for example was once the world's largest manufacturer of mobile phones. However, in 2007 when smartphone sales took off

Nokia failed to recognize that open-operating-systems where the most prominent and instead focused on their own closed system. Five years later was Nokia only number three in terms of market size and had been surpassed by both Samsung and Apple. In 2012 the Nokia's market share was further falling and they had to layoff every fifth employee. (Sorell, 2011; Times, 2011; Grundberg, 2012)

This example shows that it is of great importance to identify and evaluate business opportunities and failing to do so may result in the failure of the company. Given this problem description, two gaps in the literature have been identified. The first gap is whether a structured approach facilitates business opportunity identification and evaluation. The second gap is a structured framework that can be used in order to identify and evaluate business opportunities.

This thesis tries to mitigate these gaps in the literature by providing a structured process for how business opportunities can be identified and evaluated. This is done by the development of the Business Opportunity Framework, which is the authors' synthesis of past research and best practice at a technology company. The study is carried out at Ericsson AB, which is a large multinational technology company. The reason to the selection of Ericsson as the case study is that it is a company that faces rapid technological change and where failing to invest in the right business opportunities may result in failure such as the case for Nokia.

1.2. Aim

The two gaps in the literature that were identified where whether a structured approach facilitates the business opportunity process and how a framework that guides this process could look like. The following research aim has thus been formulated to mitigate this gap:

Develop a framework that can be used to identify and evaluate business opportunities for technology companies.

1.3. Research Questions

In order to fulfill the aim of this thesis three research questions where developed.

RQ 1: How do technology companies identify and evaluate business opportunities?

RQ 2: How can a framework help identify and evaluate business opportunities?

RQ 3: What should be included in a framework that can be used for identifying and evaluating business opportunities?

These research questions will be addressed through the development of a framework. This framework will be created through two different studies at Ericsson AB.

1.4.   Scope of the thesis

This thesis will focus on Ericsson AB an their business unit Multimedia. Ericsson is a provider of technologies and services to telecom operators. The company has about 90,000 employees and annual sales of 203 billion SEK (Ericsson, 2011). In 2007, Ericsson started a new business area called Multimedia. Multimedia focuses on delivering technologies that enable the telecom operator to distribute video or other media content to its users. The business unit was initially started as Ericsson's new growth area and they invested 40 billion SEK in acquisitions in order to gain a market leader position. However, the growth has been slow and far below expectations (Ahlbom, 2012). This could be of several reasons but to ensure further growth Ericsson needs to be able to identify and invest in the business opportunities that give the highest return on investment. (Larsson, 2012)

One area within Multimedia faced with rapid technology change is Ericsson's TV business, which this thesis will further focus on. The TV business has the largest share of Multimedia's sales and Ericsson delivers technologies that allow the telecom operator to deliver IPTV to its users (Larsson, 2012). IPTV is the technology of delivering TV signals over an IP enabled network. This could be for example a fiber-, cable or telecom network. The technology was first developed in 1995 and is today used by over 50 million homes worldwide. However, IPTV remains a diminutive TV technology and only 2,1% of the households worldwide are currently getting their TV from IPTV. The largest TV delivery technology is currently terrestrial, which transmits the TV signals over radio waves, and accounts for 46% of the total households. (Informa, 2010)

The TV industry as a whole is also facing rapid change and during the past few years, several new TV technologies have been introduced. Such examples are High Definition and 3D. Manufacturer of TV's such as Samsung and Phillips have also made efforts to integrate the Internet into the TV, which gives raise to both threats and new opportunities (Larsson, 2012).

According to Johan Larsson (2012), manager at Ericsson's TV business, the market for Ericsson's TV solutions are also changing. He argues that in the past there were many new customers that haven't yet installed an IPTV system, while today the market is saturated with most of the telecom operators already having a system. This changes Ericsson's selling efforts from installing new solutions to replacing and upgrading old. However, to drive further growth, which is of great importance for both Ericsson as a whole and its business unit Multimedia, Ericsson needs to find new business opportunities and customers for its TV solution. Given the high technology change that the TV industry is facing it will put even more importance on the identification and evaluation of new business opportunities in order to become successful.

Ericsson has further recently divided its operations into ten regions. One of these regions that are of especially interest for Ericsson is northern Europe and central Asia. The countries that are included in this region are Armenia, Azerbaijan, Belarus,

Denmark, Estonia, Faraoe Islands, Finland, Georgia, Greenland, Iceland, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Mongolia, Norway, Russia, Sweden, Tajikistan, Ukraine and Uzbekistan The region is especially interesting since it involves many developing countries such as Russia and Ukraine where heavy investments in TV delivery technologies give raise to new business opportunities (Larsson, 2012).

1.5.   Disposition

The first chapter of this thesis is the *Introduction*. This chapter introduced the reader to the topic and identifies the gap in the literature for which this study intends to mitigate. The reader is also provided with a background to Ericsson AB, which is the case company for which this thesis is based on.

In the second chapter the *Literature review* is presented. This chapter provides an examination of the previous research on the topic. The reader is presented with a detailed description of business opportunity identification and evaluation as described by Koen et al (2001) and Hüsig et al, 2005. Several methods for identifying business opportunities such as Porter's five forces and S-curve are also described.

The findings from the initial literature review were then synthetized in the chapter: *The Conceptual Framework.* In this chapter the author's current perspective on the literature is presented along with a conceptual framework. This conceptual framework then worked as a base for the further data collection.

The fourth chapter is the *Method* chapter. This chapter gives the reader a detailed description of the two studies that have been carried out in order to answer the research questions. The reader is further presented with a description of the research process and considerations regarding the quality of the study.

The fifth chapter is, study 1, the *Case study*. In this chapter the findings from the case study at Ericsson are presented. This involves the different methods that Ericsson is using in order to identify and evaluate business opportunities. This chapter is followed by the chapter Study 2 - *Applying the framework*. This chapter presents the findings from the second study which was designed as an action research.

The thesis is then finalized with the chapters: *Analysis and discussion, Revising the framework*, *Conclusions* and *Suggestion for further research*. In these chapters the findings from the two different studies are analyzed and an updated conceptual framework is developed. The conclusions regarding the research questions are also presented together with the finalized framework. The thesis is ended with some proposals for further research.

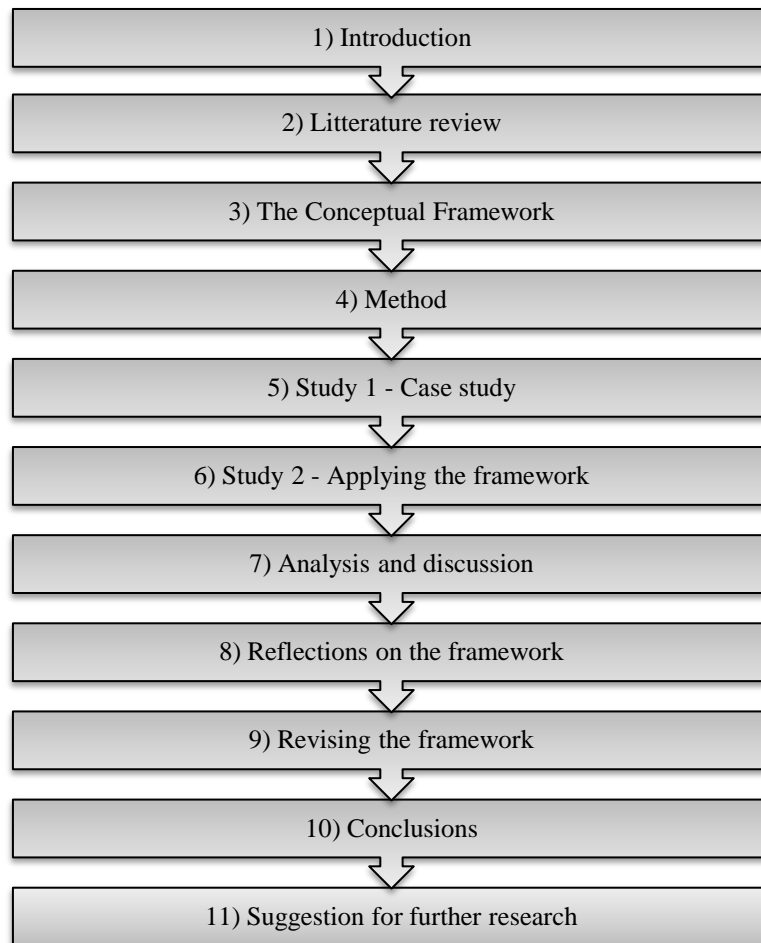| |
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| 1) Introduction |
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| 4) Method |
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| 6) Study 2 - Applying the framework |
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| 11) Suggestion for further research |

Figure 1. The disposition of the thesis

2. Literature Review

This chapter will review previous research and literature on the front end of innovation, opportunity identification and evaluation. Tools and processes for identifying and evaluating business opportunities are also part of the literature review.

2.1. Business opportunity definition

Many authors write about business opportunity as a concept; however there exist very few complete definitions. A business opportunity is, according to McGrath (2010), something that has the potential to create value for the company. Business opportunity could also be decomposition into the two words; business and opportunity. A business is, according to Sheffrin & Sullivan (2003), an organization engaged in trade of goods, services or both to consumers. An opportunity is according to the English dictionary is (2012) a favorable or advantageous circumstance or combination of circumstances. If we merge these two definitions, a business opportunity is thus a favorable or advantageous circumstance that allows a company to engage in trade of goods, services or both.

Moran & Ghoshal (1999) also touches on business opportunities when they present their concept of productive opportunities. A productive opportunity is according to them the intersection of perceived possibilities and productive possibilities. Productive possibilities are the possible combinations of resources that the company can identify and perceive. However, the company will only be able and motivated to exploit some of the opportunities. These opportunities are called productive possibilities. They may be motivated to perform a resource combination based on e.g. profit possibilities and ability to patent the solution. The productive opportunities are thus the resource combinations that the company is both able to perceive and is able to perform.

Koen et al (2002) probably provides one of the most extensive definitions of a business opportunity. According to them is a business opportunity, a business or technology gap, that a company or individual realizes, that exists between the current situation and an envisioned future in order to capture competitive advantage, respond to a threat, solve a problem, or ameliorate a difficulty."

This definition is perceived by the authors of the thesis to be more specific and less likely to be misinterpreted. It is also related to many of the theories about the innovation process and business opportunities that is used in this thesis. For this reason Koen et al (2002) presents a definition that is coherent with how this thesis and corresponding literature relates to business opportunities and will thus be used in this thesis.

2.2. The Front end of Innovation – "Fuzzy Front End"

The front end of innovation also known as the fuzzy front end (FFE) play an important role for success in innovation initiatives and potentially presenting one of the best opportunities for enhancing the entire innovation process (Lichtenthaler et al, 2004),

(Koen et al, 2002). This is the very first stage in an innovation process and takes place before development of new products or concepts has even started. It is during this phase that new opportunities are identified and evaluated, ideas for new concepts and products are created. The innovation process can be divided in three different stages; front end of innovation, new product process development and commercialization (Koen et al, 2001).
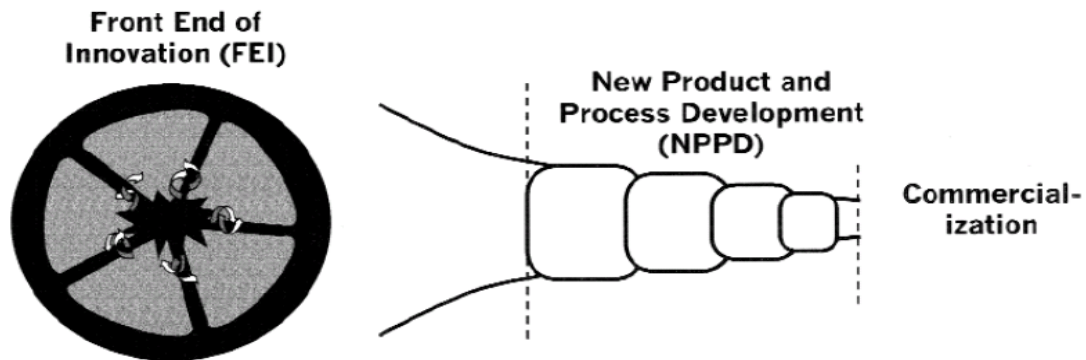
Figure 2. The innovation process (Koen et al, 2001)

The reason that the front end of innovation is also called the fuzzy front end is because the process is perceived as unstructured and not sequential as the later stages in development (Hüsig et al, 2005). Hüsig & Kohn (2003) concludes that much research has been done on the innovation process but more often focusing on the later stages leaving a knowledge gap in the FFE process. For this reason there is a need for further research since there is much room for improvements.

However, there are some frameworks and models describing the process of front end innovation. One, the New Concept Development Model, is presented by Koen et al (2001), aiming to provide a common language and defining the key components of the FFE process, see figure 3. As illustrated in figure 3, the model has three main components; the engine, the five elements of FFE and influencing factors. The model also illustrates, through its circular shape, that the process is not a linear flow but rather unstructured and going in several directions (Koen et al, 2001).
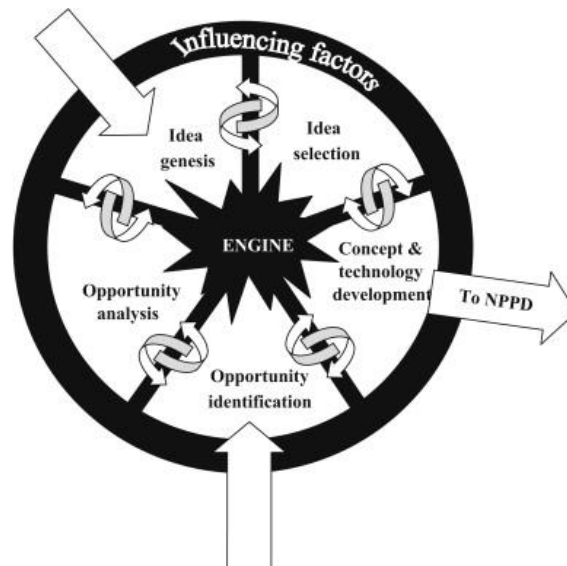
Figure 3. The New Concept Model (Source: Koen et al (2001))

In the center of the wheel, the engine represents leadership and culture, which are important for success in development projects. The influencing factors represent organizational capabilities, business strategy, the outside world and enabling science. (Koen et al, 2002)

Opportunity identification is the element where companies search for technology- or business opportunities that might be interesting for further investigation. An opportunity can be presented by, e.g. a new technology, a possibility to gain competitive advantage or new markets. The opportunity analysis aims to assess the attractiveness of the opportunity before investing any major resources.

Idea genesis is the process of transforming the opportunities into ideas that can help taking advantage of the opportunities that have been identified. Idea selection is also an important element in the FFE process since companies usually have more ideas than they can possibly pursue. The purpose with idea selection is to invest in the ideas that will create most value for the company. The last element in the FFE process is concept and technology development. This is where the concept is defined and business case is built before initiating a new process product development project (Koen et al, 2001).

A different model for describing the FFE process has been developed by Hüsig et al (2005) which consists of three stages with corresponding gates. Although only having three stages the content is similar to the model presented by Koen et al (2001):

Stage 1: Environmental Screening

Gate 1: Opportunity Screening

Stage 2: Idea generation

Gate 2: Idea Evaluation

Stage 3: Concept, Project and Business Planning

Gate 3: Go/no-Go for Development
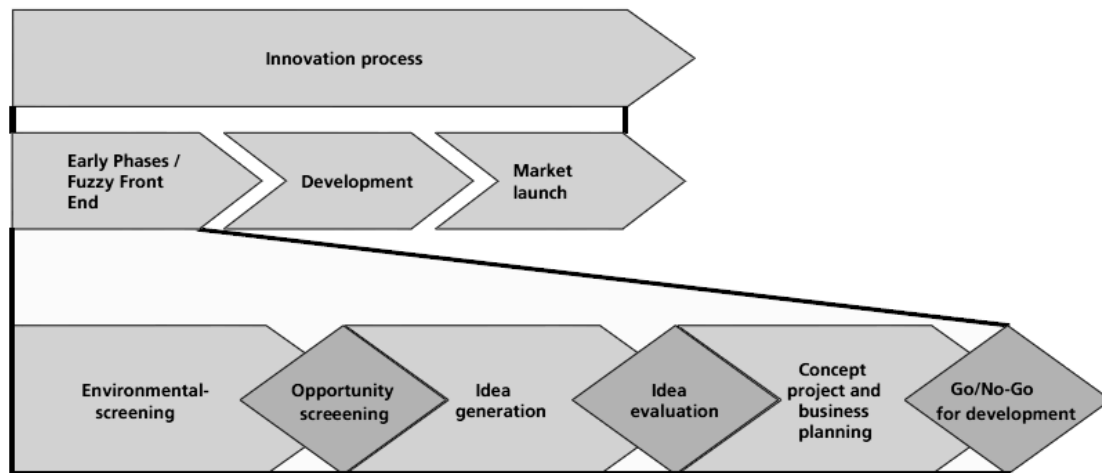
Figure 4. Fuzzy front-end process (Source: Hüsig et al (2005))

In this model, the environmental screening corresponds to opportunity identification and the opportunity screening corresponds to opportunity evaluation. The opportunities are identified by analyzing the environment to find changes and trends that can be exploited. The major difference between the New Concept Model (Koen et al, 2001) and the model presented by Hüsig et al (2005) is the use of stage gates in the latter.

Reviewing the literature reveals that the fuzzy front end is not a rigid process but rather a set of activities without predetermined order (Koen et al, 2001), (Hüsig et al, 2005). Nobelius & Trygg (2001) even suggests that it is not relevant to develop an optimal or best practice process for the fuzzy front end. Because different projects require different types of activities, task sequence and relative importance of tasks, the front end process needs to be specific for each project and company. This was concluded after a case study on three different development projects in Swedish companies.

However, a study conducted by Hüsig et al (2005) indicates that using a structured process in the fuzzy front end does promote front end success. Testing the model of three stages (figure 6) and gates on 79 companies indicated that having a structured process provided better market information, technical information, better front end portfolio and higher chance of success in the product development process.

2.3.   Opportunity Identification

Opportunity identification is the element where companies search for technology- or business opportunities that might be interesting for further investigation (Koen et al, 2002). The identification of an opportunity may occur either through a systematic search or by accidental discovery. Research has shown that accidental discovery is more common than systematic search and often results in higher financial return (Ardichvili, 2003).

There are a few factors that play an important role when recognizing business opportunities. According to Baron (2006) there are three factors that are especially important in opportunity recognition:

1. Active search for opportunities
2. Alertness to opportunities
3. Prior knowledge of the market industry or customers that are targeted

Active search for opportunities is generally performed by consciously gathering information from different sources and by doing this coming across business opportunities. Being alert to opportunities relates to opportunities that are found by accident which means that some individuals may identify opportunities without actually searching. Prior knowledge has also proved to be an important factor when identifying business opportunities, for example life experience and knowledge about customer needs (Baron, 2006).

Ardichvili et al (2003) describes the concept of opportunity recognition as a three stage process.

1. Perception – "Sensing or perceiving a market need and/or underemployed resources"
2. Discovery – "Recognizing or discovering a "fit" between particular market needs and specified resources"
3. Creation – "Creating a new "fit" between heretofore separate needs and resources in the form of a business concept"

The perception of business opportunities depends on several factors. Personal background, experience and availability of information are examples that will significantly impact the outcome. Also personal characteristics, such as creativity and optimism will influence if an opportunity is recognized or not which means that some persons will find opportunities that others miss. Some persons will recognize opportunities simply by observing the environment or situation (Ardichvili, et al, 2003).

Discovery is the identification of a fit between market needs and available resources. A discovery could be that some resources may be better used for producing other products or targeting other customer segments that could bring higher income compared to the current state. Companies rarely allocate their resources in a perfect way and discovery is about redistributing resources to a better configuration. The perception and discovery processes leads up to the creation of new business concepts in order to produce more value (Ardichvili, et al, 2003).

2.4.   Opportunity Evaluation

Opportunities are evaluated through all stages of development starting already during identification. In the early stages of development, evaluation is often an informal process. An informal evaluation can for example be pursued by one individual

informally investigating market needs before asking for resources to initiate a formal evaluation (Ardichvili et al, 2003).

Formal evaluation often starts with a feasibility analysis to determine whether or not the company has the required resources and if value can be created through the considered opportunity. Either the feasibility analysis is conducted on a specified concept, which is not necessarily well defined, or it can be conducted based on market needs and available resources to specify some feasible concepts (Ardichvili, 2003). According to Koen et al (2002) the purpose of an opportunity analysis is to evaluate the appropriateness and attractiveness of the opportunity.

Ardichvili et al (2003) suggest that the stage-gate model can be a useful tool for the formal evaluation of business opportunities. The criteria for evaluation in each stage may vary from case to case depending on requirements for return on investment, available resources and the willingness to take risks (Ardichvili et al, 2003).

2.5.   Methods for Opportunity Identification and Evaluation

According to Koen et al (2002) predicting the future is an important component for being successful in opportunity identification. There are several methods for this purpose; road mapping, technology trend analysis and forecasting, competitive intelligence analysis, customer trend analysis, market research, and scenario planning (Koen et al, 2002).

When evaluating a business opportunity many of the same methods as in the identification stage could be used but they are usually performed in more detail. Koen et al (2002) suggests that an opportunity analysis should contain the following components; strategic framing, market segment assessment, competitor analysis and a customer assessment. The strategic framing will determine how the specific opportunity fits within the company. A market segment assessment should be performed in order to determine the attractiveness of the market by estimating market size, growth rate and market share of competitors. By conducting a competitor analysis it should be possible to determine what is necessary in order to gain a competitive advantage. The customer assessment will determine the customer unmet needs (Koen et al, 2002).

Some other methods for identifying and evaluating business opportunities are: Porter's five forces, PEST analysis and technology analysis tools such as the S-curve and the hype cycle.

2.5.1.   Porter's five forces

When having defined the market and the industry that are of interest, Porter's five forces model could be used to identify opportunities and threats (Hill & Jones, 2010).

Porter (2008) argues that by understanding the underlying forces of an industry, companies can assess the profitability of the industry that they are competing in and identify actions that can strengthen their position. When a company has understood how

these factors affect them, they can also monitor changes and thus quickly identify emerging opportunities and threats. There are, according to Porter, five forces that are especially important for an industry's profitability. These are presented below in figure 5.
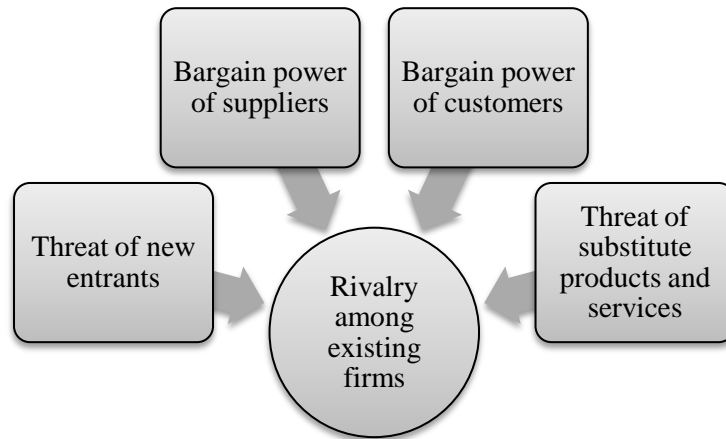
Figure 5. Porter's five forces model. (Source: Porter (2008))

Threat of new entrants

New entrants are new companies or actors that are entering the industry and adds to the current level of competition. New entrants could range from small actors such as entrepreneurs to large multinational companies that are diversifying their operations. If the threat of new entrants is high profitability will be low since the incumbent firms then must lower their prices. New entrants could also bring new concepts and capabilities to the industry, which could provide both an opportunity and an advantage. (Porter, 2008)

The threat of new entrants is, however, regulated by how strong the barriers to entry are. Barriers to entry could for example be high switching costs for customers, high fixed costs, importance of economies of scale and unequal access to distribution channels. (Porter, 2008)

Bargain power of suppliers

This factor relates to how strong the suppliers are when it comes to negotiating supplier prices. If the suppliers have a strong bargain power they can use their power in order to push up the prices. Changes and innovations on the supplier side could also give raise to opportunities due to e.g. new products. The bargain power of suppliers depends on several factors such as access to a scarce resource, few suppliers and high switching costs. (Porter, 2008)

Bargain power of customers

Powerful customers are important to profitability since these can force down prices. Customers are also an important source for new innovations since a change in e.g. demographics and customer needs can give rise to opportunities. The strength of the customers increase by several factors such as buying in large volumes, few customers, the industry's product has little effect on the customer's quality. (Porter, 2008)

Threat of substitutes products and services

A substitute is something that performs the same function as the industry's product but with other means. If there are several substitutes to an industry's product profitability will be low since the customer then has many different alternatives that satisfies their needs. The threat of substitutes is especially high if there are several substitutes, if these substitutes are attractively priced and if the buyer's switching costs are low. (Porter, 2008)

Rivalry among existing competitors

The rivalry among existing competitors is the level of competition between the companies that compete in the industry. The effect that this factor gives on profitability depends on the intensity and the basis that the actors compete. The intensity of rivalry is high if there are plenty of actors that compete, if industry growth is slow and if exit barriers are high. The profitability is also affect by the base of competition. If for example competition only is based on price this will drive down the profitability. (Porter, 2008)

2.5.2. PEST-Analysis

A PEST analysis is used to analyze the broader environment of a company or industry in order to identify trends, opportunities and threats. The PEST analysis examines the Political, Economic, Social and Technological environment. (Level of Achievement, 2004)

Political

This factor includes the regulatory framework as well as how stable the political system is and how government organizations are changing. (Level of Achievement, 2004)

Economic

The economic factor relates to the broader macroeconomic environment of an industry or firm. Things that should be considered under this factor are the economic growth, exchange rates, consumer confidence etc. (Level of Achievement, 2004)

Social

Changes in social factors could give raise to both opportunities and threats. Social factors could be for example demographics, lifestyle changes, education and income distribution. (Level of Achievement, 2004)

Technological

Technological change can sometimes change how firms compete in an industry and create both opportunities and threats. Technological factors include the life cycle of a technology, new emerging technologies and rate of technology transfer. (Level of Achievement, 2004)

2.5.3. Technology analysis

Technological change is an important factor in opportunity identification and evaluation. Especially in high-technology industries where technological change may happen fast it is important to monitor and analyze how new technologies are evolving. Some important technology analysis methods are: S-curve analysis, adoption curve and the hype cycle.

S-curve analysis

The rate of which an innovation both progress in performance and number of adopters could be described by an S-curve (Shilling, 2010). A typical S-curve is illustrated in figure 6.
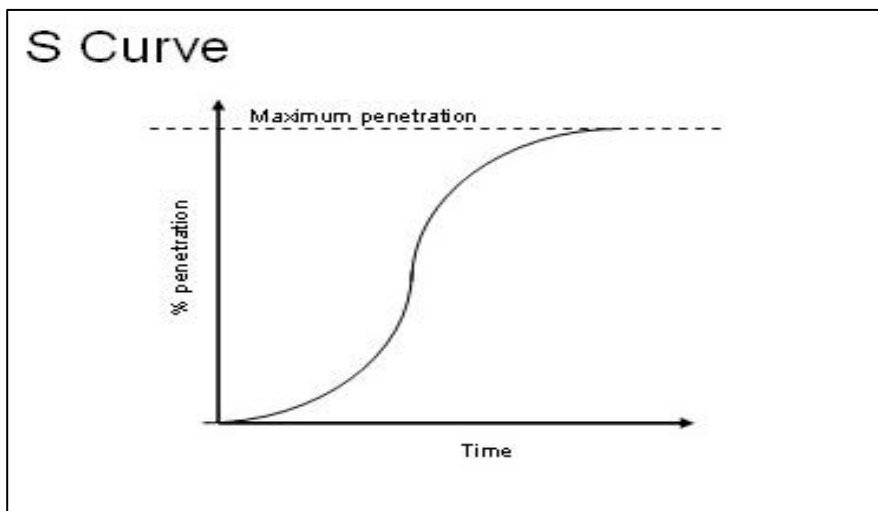
Figure 6. The S-curve. (Source: Shilling (2010))

When a technology's performance is plotted against the effort and resources that have been invested in the technology it usually shows slow initial improvement then accelerating and finally diminishing improvement. Opportunities could exist during the whole S-curve. In the first period the technology is new and poorly understood. The market that exists is mostly for innovators that have the time and knowledge to experiment with the technology. (Shilling, 2010)

As the performance improves, new customer groups are able and willing to adopt the technology. The second customer group to adopt the technology is the early adaptors. These are often customers that seek after breakthrough technologies and are willing to take the risk in investing in a new technology. When the technology progress even further it becomes easier to use, cheaper and more reliable. This opens up for the mainstream customers called the early- and late adaptors. These are customer groups that seek after well-proven technologies that they know what they get from and satisfy their needs without demanding much knowledge or time. (Shilling, 2010)

After a while the technology's performance exhibits diminishing improvements. This is in many cases because of the natural limit of the technology has or is about to become fulfilled. This usually opens up for several opportunities as some customers now seek for new alternatives that can better satisfy their needs and increase their performance.

Such innovations are called discontinuous innovations. A discontinuous innovation is an innovation that fulfills the same need as an old technology but builds on a new base of knowledge. If the discontinuous innovation has a steeper performance curve it might overthrow the old technology and take the place as the new incumbent technology. (Shilling, 2010)

According to Benkenstein & Bloch (1993), the S-curve should, however, be used with some caution since the S-curve is according to the two authors, ignoring some important aspects. First the S-curve is rather one-dimensional and doesn't take into consideration other performance parameters that may be important for the adoption. Secondly, it ignores the aspects of other technologies that are competing. Benkenstein & Bloch argues, however, that if the S-curve is used in conjunction with other methods it could provide some valuable insights.

Hype-cycle
The hype cycle was first introduced by Gartner, a technology-consulting firm, in 1995 and describes how emerging technologies are progressed to their domain and market position (Fenn & Linden, 2003). The model and its different stages are presented in figure 7.
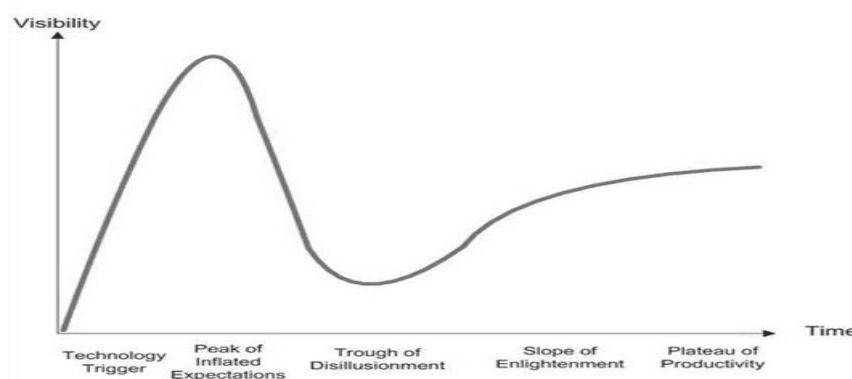
Figure 7. The five phases of Gartner's hype cycle. (Source: Fenn & Linden (2003))

As seen in the figure, the hype cycle consists of five phases, which are: Technology trigger, peak of inflated expectations, trough of disillusionment, slope of enlightenment and plateau of productivity.

Technology trigger
During the technology trigger phase the technology is developed and public demonstrations, press events and other events generates significant publicity. Usually no finished product exists during this phase, only prototypes and experiments. (Fenn & Linden, 2003)

Peak of Inflated Expectations
After the first phase the first version of the product is released. Also more vendors that are offering the technology are increasing. This together with even more publicity creates both high visibility and expectations. However, the problems with the first-

generation products become visible which creates negative publicity and drives down the expectations to the next phase of the cycle. (Fenn & Linden, 2003)

Trough of Disillusionment
Since the first generation of the technology doesn't live up to Media's high expectations it is rapidly discredited. However, in this phase extensive trials are carried out which provide the vendors with important information about problems and how to solve them. In this stage it is mostly early adaptors that buy the technology. However, to be able to take the technology to the mainstream it must be developed into a second-generation with ease of use and without problems. (Fenn & Linden, 2003)

Slope of Enlightenment
During the slope of enlightenment, the technology goes towards mainstream adoption. The technology is during this phase better developed to meet the needs of its customers. Due to the ease of use and the larger market that sees the benefits with the technology the adoption rate increases rapidly during this phase. (Fenn & Linden, 2003)

Plateau of Productivity
When the technology enters the plateau of productivity it is becoming widely accepted by suppliers and users. Often a full ecosystem of products and services evolves around the technology during this phase. The technology can then evolve into full adoption and gaining a position as the standard or evolve into a niche market. (Fenn & Linden, 2003)

2.6. Processes for evaluating business opportunities

According to both Hüsig et al (2005) and Ardichvili et al (2003), a structured process in the fuzzy front end could improve success. Both of the authors further argue that a stage gate model could be a useful tool for this purpose. Ardichvilli et al (2003) also suggest that the stage gate model could be very useful when evaluating business opportunities.

However, the stage gate model have been criticized for being too rigid which can create problems in fast changing environments such as in the environment surrounding high technology companies (Cooper, 2008). In this chapter is therefore Cooper's (1990) Stage Gate Model presented.

2.6.1. Stage Gate Model

The idea behind different stage-gate systems is not new but still a relevant tool for managing innovation (Cooper, 1990) (Cooper, 2008). Many companies have developed their own stage-gate process and a study by Cooper (1990) show that those companies have been more successful compared to companies who do not use a structured process. Although they are slightly different, the idea behind is the same and they are very similar in practice (Cooper et al, 1990).

The Stage-Gate model is simply a roadmap for how to manage development projects and was created by observing successful development initiatives. A stage-gate process includes two main components; a series of stages and after each stage is a gate. The

actual work is performed during the stages, which may include information gathering, analyzing the information and some kind of output, which is delivered to the gate. A gate is basically a decision point where it is decided if the project will continue to the next stage, needs to be looped back to the previous stage or if it should be killed. The decision is generally based on a set of evaluation criteria, which are decided by the company (Cooper, 2008).

The idea behind the stage-gate model is to invest only in the projects that will become successful and projects that will fail are killed in an early stage to avoid investing more money than necessary. To reduce risk, the stages should be designed so that information is gathered about the uncertainties to consider in next stage. The stages are usually more expensive in the later stages of development when availability of information is higher which reduces the uncertainties and risks. (Cooper, 2008)
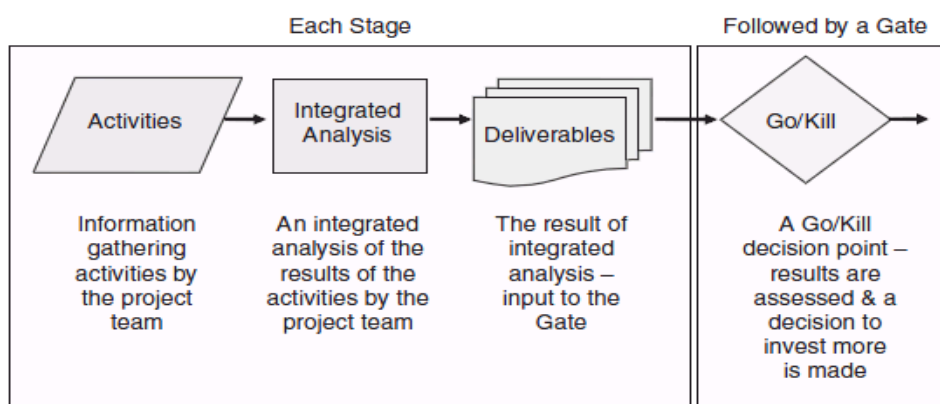
Figure 8. The Stage-Gate process. (Source: Cooper (2008))

3. The conceptual framework

This chapter will introduce the reader to a framework that brings together best practices, tools and guidelines from literature about opportunity identification and evaluation. The purpose of the framework is to act as a roadmap and provide a structured way of finding and evaluating new and profitable business opportunities.

3.1. Introduction to the Framework

By reviewing literature it is possible to draw conclusions about the components that need to be included in the framework. Obviously, the most important components in such a framework have to be the identification and evaluation of opportunities. It is also possible to conclude that an opportunity to some extent has to be identified before it can be evaluated which means that the first stage in a framework has to be include opportunity identification. However, as Ardichvili et al (2003) states, the evaluation of an opportunity starts already during the identification of an opportunity and continues through all stages of development. This means that opportunity identification and evaluation are not separate but are actually performed concurrently.

The evaluation of an opportunity usually starts informally, before a decision is made to invest resources in a formal evaluation. Informal evaluation means that the opportunity is evaluated spontaneously without any plan or goal and maybe even unconsciously. When identifying an opportunity it is almost impossible to avoid informally evaluating the specific opportunity. In order to start a formal opportunity evaluation there has to be a defined opportunity to evaluate. Hence, the formal evaluation cannot start until after a potential opportunity is already identified. However, opportunities are informally evaluated during the process of identification. The framework so far, consists of the first stage, which is opportunity identification concurrent with informal evaluation, followed by the first gate, a decision point initiating the formal evaluation. The first stage and gate is presented in figure 9.
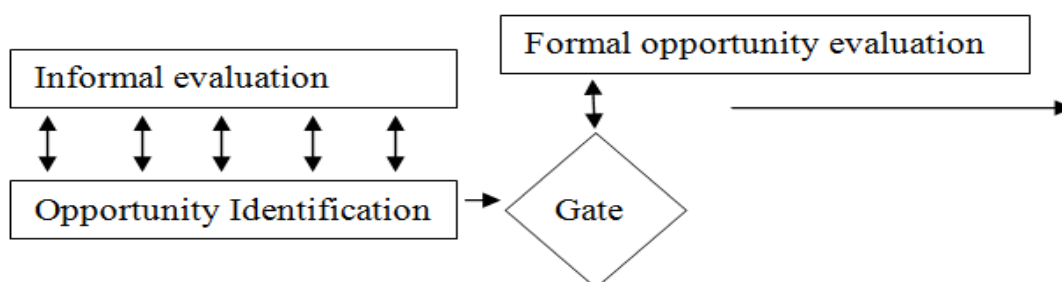
Figure 9. The first stage and gate in the framework

The formal opportunity evaluation aims to determine whether or not a certain opportunity is feasible and attractive for the company to pursue. This stage is initiated in the first gate where it is decided whether or not to invest resources in further evaluation or if the opportunity. If the opportunity appears to be interesting, it passes the first gate and enters the second stage, which is a deeper opportunity analysis. The objective with

this stage is to analyze the feasibility and attractiveness to proceed with a specific opportunity. After the analysis it should be decided whether or not the opportunity is feasible and if it is attractive enough to invest more resources. This decision point is the second gate in the framework. The Framework now consists of two stages, opportunity identification and opportunity analysis, each followed by a gate. The opportunities are evaluated through all stages and gates, starting with informal evaluation followed by a formal evaluation (see figure 10).
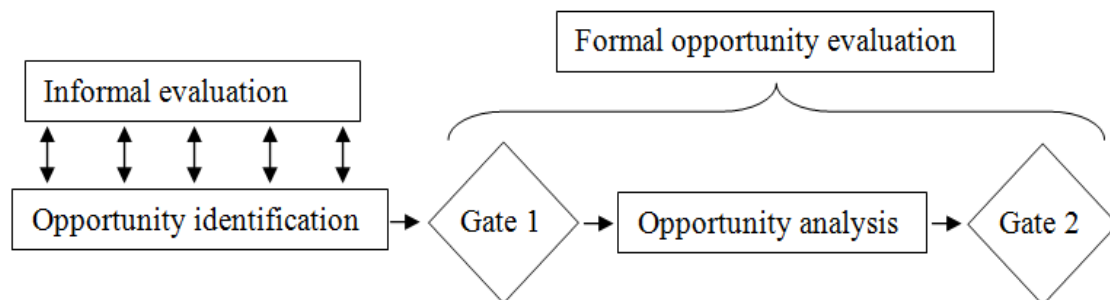
Figure 10. The foundation of the framework

If the opportunity passes the second gate, the development continues with generation of ideas, concepts and business models that can be used to exploit the opportunity. The processes that come after the second gate is briefly described in the literature review but are otherwise outside the scope of this thesis. It should also be noted that idea and concept generation to some extent can be performed simultaneously as the opportunity identification and evaluation.

3.2.   Opportunity Identification

The literature review has revealed that there are two ways of identifying opportunities, either through formal search or by accidental discovery. This chapter will provide the reader with an understanding for the concepts and tools for guiding the process.

3.2.1.   Formal Search

Formal search basically means that opportunities are actively sought after. Active search for opportunities is generally performed by consciously gathering information from different sources and by doing this coming across business opportunities. Koen et al (2003) has suggested a number of components to be included in the search for opportunities, for example a competitor analysis, customer analysis and a technology trend analysis. The PEST analysis is also an appropriate tool for identifying business opportunities by analyzing the environment of a company or an industry.
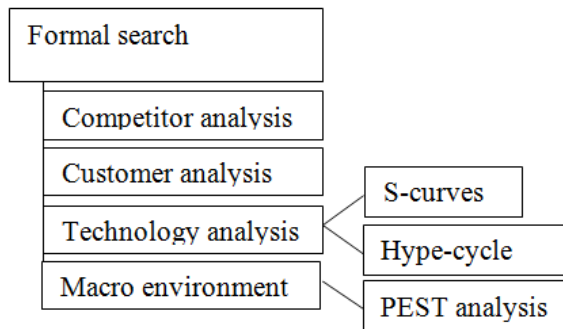
Figure 11. The formal search and its constituting parts

The purpose of the competitor analysis is to gather information about what kind of products and markets they are currently developing and investigating if any current competitor activity might present opportunities.

The purpose of the customer analysis is to see if there are any trends in the customer behavior that could present new opportunities. For example some type of product is increasing in popularity or the customer behavior is changing in another way.

New technologies can also present opportunities, which is why it is interesting to analyze technology trends. S-curves and the Gartner's Hype cycle are methods that can be used to analyze technology trends.

Analyzing the macro environment with a PEST analysis may reveal opportunities that arise due to political change and changes in the macroeconomic environment.

3.2.2. Accidental Discovery

Accidental discovery means that some opportunities are identified without actually searching. This kind of opportunity identification is harder to control but a couple of factors increase the chances of accidentally discovering business opportunities.

Having prior knowledge about the industry, experience and customer needs are examples that will facilitate identification of opportunities. Being alert to new opportunities is another factor that can help. Some persons are also more likely to find opportunities than others, which relates to different personal characteristics.
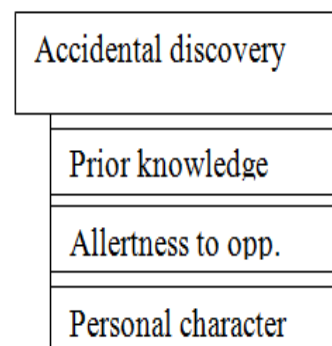
Figure 12. Accidental discovery and its constituting parts

3.3. Opportunity Evaluation

When having identified opportunities Ardichvili et al (2003) argues that these need to be evaluated. These evaluations are, according to Ardichvili, often done on an informal basis in the beginning and then proceed to more formal methods. In this framework, the formal evaluation of opportunities will be performed through an opportunity analysis and two gates.

3.3.1. Opportunity Analysis

If the first gate is passed a formal analysis will be initiated aiming to assess the attractiveness and feasibility to exploit a particular opportunity.

The feasibility and attractiveness and their constituting parts are presented in figure 13.

Feasibility analysis	Attractiveness analysis
Technology	Profitability
Economy	Market size
Legal	Market Growth
Orgnaization	Industry analysis
Time	
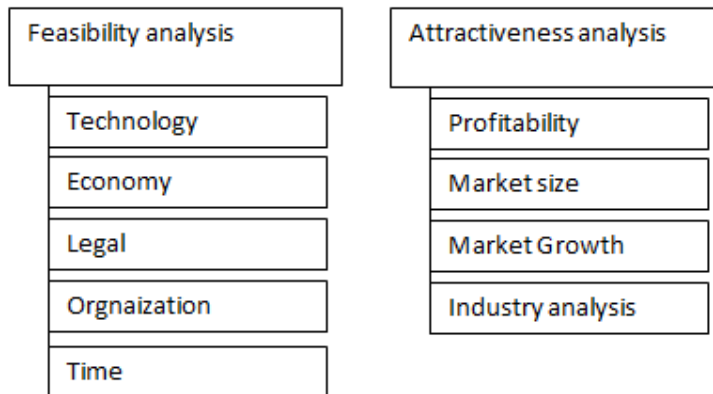
Figure 13. The feasibility and attractiveness analysis

In the feasibility analysis five factors are investigated. The feasibility analysis first examines if the opportunity is technically possible. It then moves on to investigate whether the opportunity is economic affordable, if it is legal, if the organization has the resources and capabilities and how long time the opportunity will take to carry out. Deciding whether these factors are reasonable mostly depends on the goal and characteristics of the organization that undertakes the business opportunity evaluation.

In the attractiveness analysis the profitability is first examined, which is done by examining potential price, cost and margin. After the profitability analysis a market size analysis is carried out. This analysis aims to decide the market size of the opportunity. Market size could be estimated through investigating potential customers and estimating their purchase volumes. Finally is an industry analysis performed. This analysis could include several aspects such as competitive landscape, suppliers and substitutes.

3.4. Gates

The framework includes two gates or decision points. In the first gate it is decided whether or not to invest resources in a formal evaluation. The second gate concerns the decision to proceed to development of new ideas and concept related to the opportunity. If the opportunity does not pass the gate, it can either be looped back for further analysis or the project can be killed if it is discovered that the opportunity will never be able to meet the requirements to pass the gates. The requirements to include in the gates may depend on company specific objectives regarding profitability, willingness to take risk and other factors related to the overall strategy.
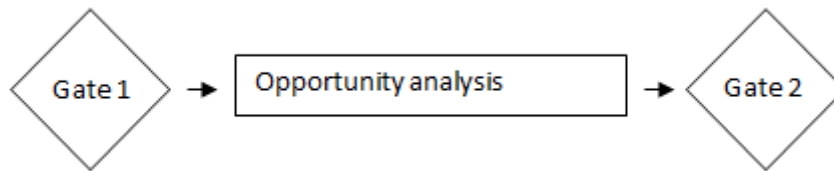
Figure 14. Illustration of the two gates.

The requirements to pass a gate have to be adapted for every specific company but the authors recommend that they are linked to the analyses that are performed in opportunity identification.

Table 1. Examples of selection criteria for gate 1

Gate 1: Examples of selection criteria
- Can we compete in the new market? - Is there an interest among customers? - Does the new technology have the potential to deliver value? - Is the macro environment favorable?

Table 2 illustrates how opportunities may be selected in gate 1. The sample questions have been developed related to the analyses that are performed in the opportunity identification stage. The opportunities that give the most positive answers should be selected for further analysis.

Table 2. Examples of selection criteria for gate 2

Gate 2: Examples of selection criteria	
Is it feasible for us to develop concepts related to the opportunity?	Is it attractive for us to develop concepts related to the opportunity?
- Can we develop the technology? - Is there room in our budget? - Are there any legal hurdles? - Can we make the necessary organizational changes? - Can we develop the market or product in time?	- Is the profit potential high enough? - Is the market big enough? - Is the market growing? - Is the industry attractive enough?

Table 3 illustrates how opportunities can be selected in gate 2. The sample questions have been developed related to the feasibility and attractiveness analyses that have been performed. The first step in the gate is to sort out the opportunities that are not feasible. The reaming opportunities should be selected based on their attractiveness.

3.5.   The Business Opportunity Framework

The complete framework can now be created by assembling all the components that have been described in this chapter. The framework will from now on be called the business opportunity framework (BOF). The process will start with the identification of opportunities either by formal search or by accidental discovery. In the first gate it is decided which opportunities are interesting enough analyze further. Those opportunities are analyzed in terms of feasibility and attractiveness. In gate 2 it is decided which opportunities that are interesting enough to continue with development of ideas and new concepts.
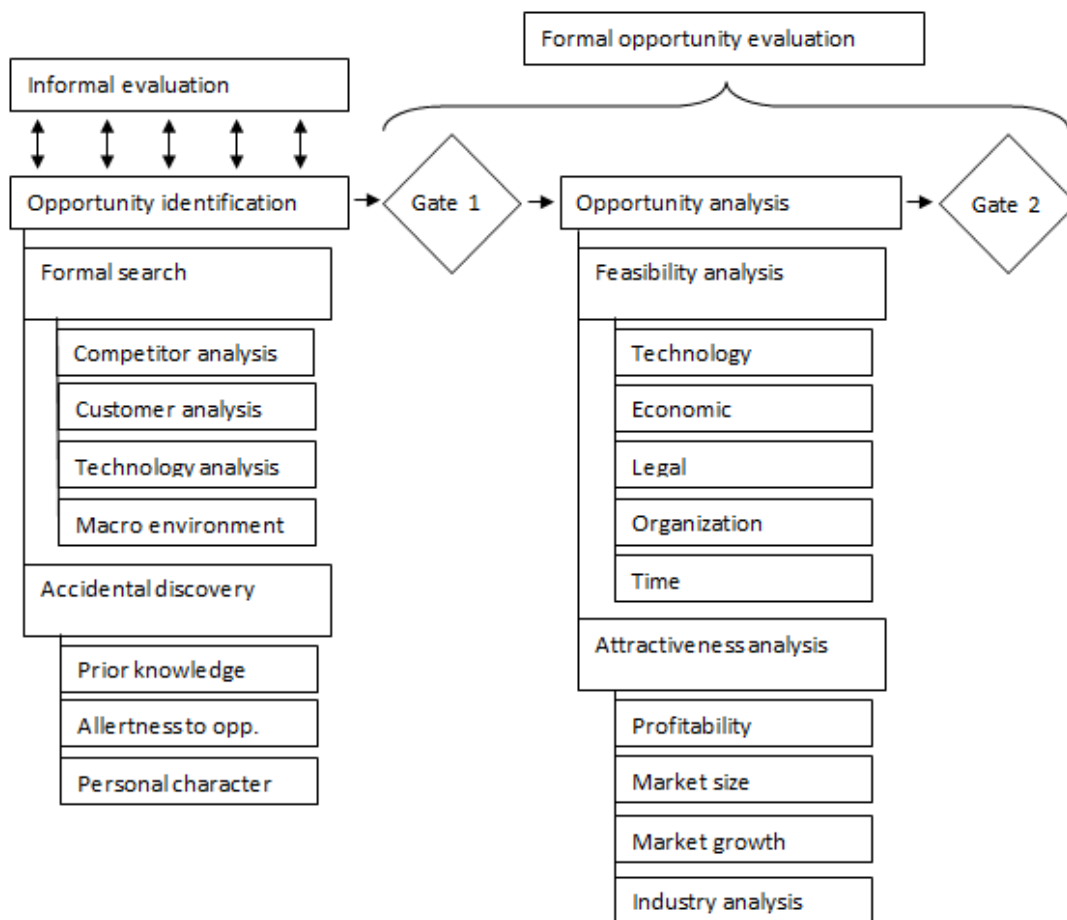
Figure 15. The complete framework for opportunity identification and evaluation

When applying the BOF, the first step is to define an area where the search for opportunities will be focused. For example, the search can be focused on a specific market or a business area. When having defined an area where interesting opportunities may be found, the BOF can be applied to help guide the process.

The first stage is opportunity identification which will be initiated by a formal search for opportunities. The formal search for opportunities is conducted by collecting and analyzing information about competitors, customers, technology trends and the macro

environment. At the same time, opportunities may be identified by accident by someone who is not actively searching for opportunities. During the search for opportunities they are also informally evaluated but only some will be selected for formal evaluation. This selection is made in gate 1 where all opportunities are compared to choose some that will go through a structured analysis in terms of feasibility and attractiveness.

The first step in the opportunity analysis should be to evaluate the feasibility of every opportunity in terms of technological, economical, legal, organizational, and time factors. The opportunities that are feasible to develop will be assessed in terms of attractiveness regarding profitability, market size, market growth and industry attractiveness. After completing the opportunity analysis the most promising ones shall be selected in gate 2. Those opportunities will be exploited by developing new ideas and concepts and finally a new product or offering.

4. Method

This chapter introduces the reader to the research methods used for this thesis. An overview is first given of the research process where iteration between data and theoretical work has produced the framework. The two studies are then presented and a detailed description of the research design, sampling and research methods is given. The chapter is concluded with a reflection of the quality of the research.

4.1.   The research process

This thesis is theory orientated and aims to contribute to the theory building regarding how technology companies identify and evaluate business opportunities. To be able to fulfill this aim and answer the research questions, this thesis followed a circular research process as described by Eisenhardt (1989). In this process, the researcher is iterating between data and theoretical work in order to create theory. The process for this thesis is presented in figure 16 below.
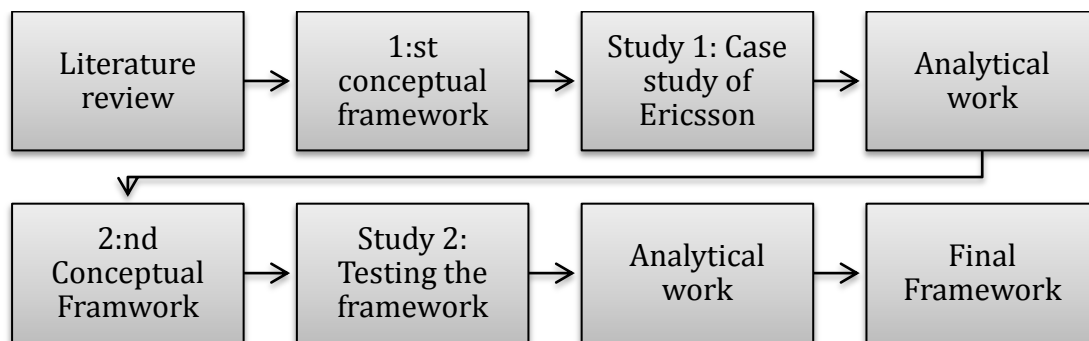
Figure 16. The research process of the thesis

A literature review was first performed in order to provide a theoretical background to the topic. After the literature review a conceptual framework was developed which represented the author's current perspective on the topic. A study of Ericsson's business unit Multimedia then provided empirical data on the topic. After this study, the data was analyzed and the conceptual framework was updated with the findings until theoretical saturation was achieved. The second conceptual framework was then used in study two in collaboration between the authors and employees at Ericsson in order to identify and evaluate business opportunities. This study thus provided data about areas of improvement for the framework, which was analyzed and resulted in a second version of the framework.

An overview of the two studies that were carried out in order to gather empirical data and develop the framework is presented below.

Study 1: Case study
The first study was carried out as a case study of Ericsson's business unit Multimedia and aimed to provide a description of how a typical technology company identifies and evaluates business opportunities.

Study 2: Applying the framework

The second study was designed as an action research where the proposed framework was used by the authors in order to identify and evaluate business opportunities at Ericsson. By using the framework in a real-life situation, valuable insights could be drawn regarding the usage and pitfalls of the proposed framework.

A summary of the research methods used for the two studies is presented in table 3 below.

Table 3. Summary of research strategy and research methods used for the two studies.

	Study 1 – Case study	**Study 2 – Applying the framework**
Research questions investigated	RQ1, RQ2	RQ2, RQ3
Research Strategy	Qualitative	Qualitative & Quantitative
Research Design	Case study	Action research
Research Methods	Semi-structured interviews Secondary data	Secondary data

These studies and how they relate to the research questions are shown in figure 17 below.
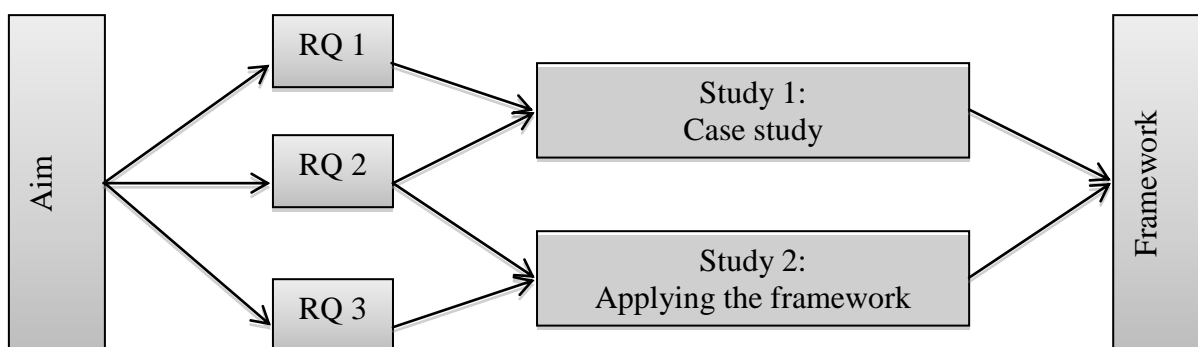
Figure 17. The relation between aim, research questions and the two studies

The aim thus provided the base for the three different research questions. The two studies were then developed in order to answer the three research questions. The first research question is answered by the first study, the second by both study one and two and the third research question is answered by study two. The two studies together with the literature review then provided the necessary data, which formed the framework.

Below follows a detailed description of the research strategy, design and methods for the two different studies.

4.2. Study 1: Case study

The aim of the first study was to describe and explore how a technology company identified and evaluated business opportunities. This was important in order to develop the framework and provide an insight into the topic. The first study was performed as a case study as this design allowed to probe deeper and build theory.

4.2.1. Research Strategy

A qualitative research strategy was used for the first study. According to Bryman & Bell (2011), using a qualitative research strategy is preferable when the researcher takes an inductive view of the relationship between theory and data and is interested in understanding a topic from the view of its participants.

This study aimed at providing a description of how a technology company is identifying and evaluating business opportunities. It also aimed at describing what practices and methods that could be used and how its users perceived them. A quantitative research strategy would thus have made it unable to generate a thick description of the methods and a qualitative research strategy was therefore used. A qualitative research strategy also emphasizes understanding what the actors who perform the business identification and evaluation perceive the main problems with their current methods are, which was desirable in order to fulfill the aim.

Also, the overall aim of this thesis was to build theories rather than test them. An inductive approach is therefore used in order to generate a conceptual framework based on the findings from the study. An inductive view also makes it possible to generate new theories from data by examining pattern of association, which was in line with the aim of the first study.

4.2.2. Research design

The first study was designed as a case study. A case study is, according to Tharenou (2007) an in-depth empirical investigation of a single instance or setting to explain the processes of a phenomenon in context. The case study is, according to Yin (2009) used for "Why" and "How" research question.

The reason for designing this study as a case was that it gave the possibility to examine in detail the methods used for identifying and evaluating business opportunities. The research topic is also rather unexplored and a case study is thus more preferable than other designs as it gives the possibility to explore and probe deeper into the topic. The research questions were also aimed at investigating how business opportunities are identified and evaluated. This type of question is according to Yin (2009) well suited for case studies.

A case study is, according to Capeda & Martin (2005) appropriate when the researcher wants to iterate between data collection and theoretical work in order to create theory. This was the aim of the study as the first conceptual framework was to be compared to

empirical data in order to improve the framework and the case study is therefore preferable as a research design.

4.2.3. Sampling

Ericsson was chosen as the case using purposive sampling. Purposive sampling is a non-probability sampling method where the goal is to select cases in a strategic way so that the cases are relevant to the research question (Bryman & Bell, 2011). The reason to the usage of purposive rather than random sampling was that a purposive selection of a case provided the possibility to choose a case where business opportunity identification and evaluation are of great importance.

Ericsson and their business unit Multimedia were selected for this case study. Several reasons to this selection exist. First their products are very technologically intense, which fitted our research question and scope well. Secondly, the industry is dynamic with much change, which creates a need for constant business opportunity identification and evaluation. The business unit mostly consists of technologies that can deliver TV signals and this is a field faced with rapid technological- and competitive change. Also, Ericsson is a company that has well-established processes for identifying and evaluation business opportunities and thus performing an in depth case study would give a detailed description of how different methods are used in a technology company.

Using a purposive sampling can, according to Bryman & Bell (2011) make it more difficult to generalize the findings. However, since describing rather than generalizing was the primary goal of the first study, random sample would have created uncertainty regarding the outcome of the study. Purposive sampling thus made it possible to choose a case that would provide us with a detailed description of the research topic.

4.2.4. Research methods

The main method to obtain data for the first study was semi-structured interviews. Semi-structured interviews are often used when flexibility is wanted while a focus is also preferable (Bryman & Bell, 2011). This was suitable for this study as the aim was to describe and explore how business opportunities are identified and evaluated. However, most of our interviewees weren't used to discussing business opportunity identification and evaluation. A semi-structured interview was therefore used because it gave us the flexibility to probe deeper while it also ensured a clear focus, which would have been difficult to obtain with an unstructured interview method.

The interviewees where sampled using a combination of purposive and snowball sampling. Some interviewees where identified by an examination of their position and past experience. These were chosen due to their insight into the topic and possibility to triangulate the data. Snowball sampling was also used to identify some interviewees as each interview was ended with the question "do you know any other person that might have further knowledge about this field".

Each interview was carried out in the interviewees' own offices during working hours. This provided a familiar environment for the interviewees, which was important in order to get as detailed answers as possible. The interview started with a brief introduction of the thesis and then followed the interview guides presented in appendix B. Each interview lasted for 30-90 minutes and was performed by two interviewers. These were arranged as one interviewer asking the questions while the other were observing and taking notes. This made it possible to get different perspectives on the interview and thus achieve investigator triangulation. Every interview guide was also pretested on two persons before being used. This made it possible to improve the interview guide to better fit the respondents' level of knowledge.

The interviews were also recorded and transcribed. The main reason to this selection was that it allowed the interviews to be transcribed in detail and thus made it possible to compare the findings from the different interviews. The drawback of using a recording device is according to Bryman & Bell (2011) that it can be off-putting for the interviewee and thus limit their answers. This potential problem was mitigated with the usage of a very small recording device and offering the interviewees to read and change the transcript after the interview.

Secondary data was also examined in order to triangulate and complement the findings from the interviews. These secondary data was mostly in the form of documents that were available at Ericsson's intranet.

4.2.5.   Data analysis

When the data had been collected it was analyzed by comparing the findings from the interviews in order to see patterns and understand what methods Ericsson used for identifying and evaluating business opportunities. This resulted in a list of methods and concepts that Ericsson used during their identification and evaluation. The list was then compared with the theories and concept in the literature review in order to understand similarities and differences between concepts proposed by the literature and how Ericsson worked. This gave the possibility to identify gaps and areas of improvement.

The last step was to compare the findings with the conceptual framework. Differences and similarities were then listed and areas of improvement for the conceptual framework were identified based on this analysis. The conceptual framework was then updated with some of the findings from the case study.

4.3.   Study 2: Applying the framework

The aim of the second study was to answer research questions two and three. This was done by using action research as the design and was performed in collaboration between the research team and Ericsson employees. The framework was used on two examples in order to identify differences and compare the outcome when using the framework in different situations.

The framework was applied to cable TV and cloud TV. These are two areas within Ericsson's business unit Multimedia, which are of particular interest since these are two dynamic areas where several business opportunities exist

The process for the action research is presented in figure 18. This was performed for both cable TV and cloud TV.
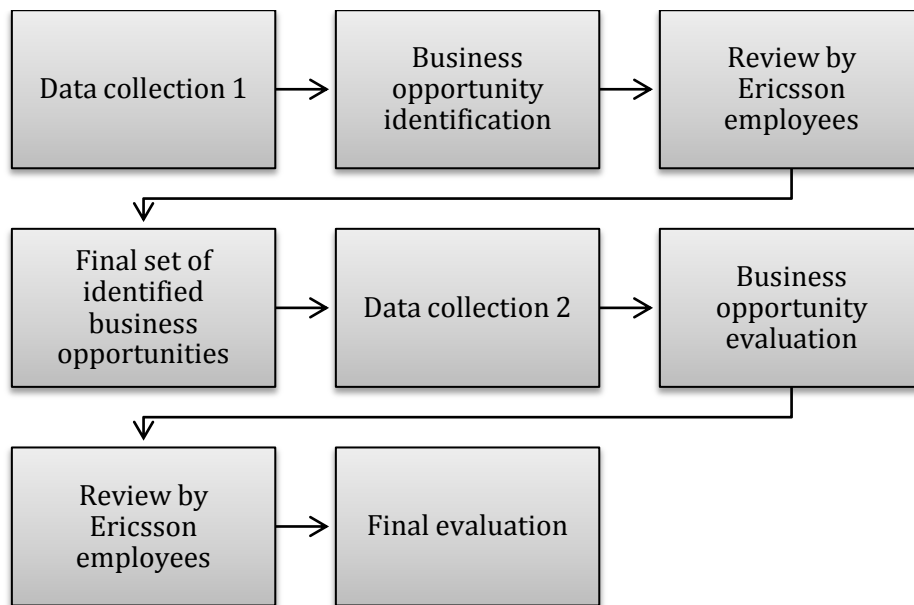
Figure 18. The research process for the action research

The different stages are in more detailed explained in the following two chapters.

4.3.1. Opportunity identification

The first stage in applying the framework is to identify business opportunities. According to the BOF framework the identification can be divided into a formal search and accidental discovery. Only the formal search, which involves a competitor-, customer-, technology and macro environment analysis, was used during the application. Accidental discovery was thus excluded since this area is done on an occasional basis and thus is very difficult to obtain during a research.

Customers
Data for the customer analysis was gained by semi-structured interviews of customers and Ericsson employees. Also secondary sources such as customer surveys were used in order to understand the needs of the customers. The interviewees were selected based on their understanding of the customer and was focused on sales persons who has a regular contact with the customer.

Competitors
Data regarding competitors where gained by examining secondary resources such as the Internet and internal documents at Ericsson. Data regarding competitors where also gained by semi-structured interviews of Ericsson employees. Interviewees where selected based on their understanding of the competitors.

Technology

Data regarding technology trends was gained trough semi-structured interviews of Ericsson employees and by examining secondary resources. Interviewees for the interviews where focused on the R&D department since these had the most knowledge of the field.

Macro-environment

Secondary sources were the main source for data collection in the macro environment. This was mainly done by searches on the Internet, which focused on government reports on the area and the overall macro environment. It could for example be government reports focusing on the regulatory framework for cloud TV and government statements on future investments in telecom infrastructure.

Based on the data collected from the four different areas, the data was then compared and analyzed by the research team in order to identify irregularities, areas of improvement and areas where possible opportunities could exist. This analysis then resulted in a list with a range of possible opportunities. Based on the list with possible opportunities, employees at Ericsson made a selection of which opportunities to proceed to the evaluation phase. This selection was based on their subjective opinion and prior knowledge of the field.

4.3.2.   Opportunitet evaluation

The identified business opportunities proceeded then to the business evaluation phase of the BOF framework. This phase consisted of a feasibility analysis and an attractiveness analysis.

Feasibility analysis

In the feasibility analysis is technology, economic, legal, organization and time evaluated. These were assessed on a scale low, medium high based on the semi-structured interviews performed by the research team. These semi-structured interviews aimed at employees at Ericsson who had prior knowledge of the field and thus could make reasonable estimations. Ericsson employees then reviewed the assessment in order to find areas where the assessment could be improved. A drawback of using this method is that it then reflects the subjective opinions of the authors. However, this was mitigated to some extent by having several employees at Ericsson reviewing the rating.

Attractiveness analysis

The attractiveness analysis consists of an analysis of the opportunities' profitability, market size, market growth and industry. These analyses were performed by examining patterns in the collected data from the semi-structured interviews and the secondary sources. Based on the subjective opinion of the research team these criteria were then rated on a scale of low, medium or high. However, in order to triangulate and make the assessment more objective, Ericsson employees also reviewed the assessment.

4.3.3. Research Strategy

The second study used a qualitative research strategy. The reason to this selection was that the aim of the second study was to gather data regarding how the framework could be used and what advantages and pitfalls it might have. This involves the perceptions and subjective impressions from its participants, which fits the qualitative research strategy well. Also, the second study takes an inductive view of theory and data where theory is generated from the usage of the framework.

4.3.4. Research Design

The second study was designed as an action research. An action research is, according to Bryman & Bell (2011) a research design where the action researcher and a client collaborate in the diagnosis of a problem and then in the development of a solution. Action research is appropriate when the researcher wants to link theory and practice and gain insights that wouldn't be able to gain from observing or interviewing (Backerville, 1996).

This type of design allowed the researchers to draw conclusions regarding how the framework is applied and if the framework is possible to use in practice. This would have been difficult to do with a case study, which is more focused on describing rather than test how new methods could be used, and their benefits. Also the action research allowed the research team to understand what difficulties that might exists when using the framework and possible areas where it might be too time consuming to use the framework.

The design was selected also since in order to create a fully functional framework for identifying and evaluating business opportunity it must be well anchored in practice. This helps to mitigate the problem with theories built from cases being too complex (Eisenhardt, 1989). The action research thus allowed the research team to test whether the framework was too complex and identify areas of improvement.

Action research is often criticized for its lack of repeatability and for concentrating too much on organizational action at the expenses of the research finding (Bryman & Bell, 2011). However, using the action research provides insight that would have been very difficult to obtain by only observing or interviewing users. It is a risk that participants wouldn't express if the framework were too complex because of being afraid to loose face.

4.3.5. Research Methods

In order to identify and evaluate the possible business opportunities in the two selected fields, the conceptual framework was used as a basis for the data collection. The main method for collecting data for the framework was semi-structured interviews.

Semi structured interviews were used in order to collect data for the action research. The reason that semi-structured interviews were used was that it provided the flexibility

needed to explore the fields and identify business opportunities while it also provided a focus for the interview. Flexibility was important to achieve since a too structured approach might have made it impossible to identify all possible opportunities.

A total of 15 interviews were carried out in order to apply the framework to the two areas. Each interview lasted for about 60 minutes and followed the interview guides presented in appendix B. The interviews were recorded and transcribed using a small recording device. The interview questions were pretested on two persons with different backgrounds before being used.

The interviews were sampled using a purposive sampling where interviewees where identified based on their potential knowledge of the field. Also snowball sampling was used in order to identify others that were of potential interest for the study.

Secondary data was also used extensively during the second study. This made it possible to triangulate the data gained from the interviews and get different perspectives on certain business opportunities. This was important in order evaluate the business opportunities. The secondary data was obtained by examining Ericsson internal databases as well as webpages.

4.3.6. Data analysis

Based on the finding from the data collection and applying the framework, the research team made an analysis of the strengths and weaknesses of the framework.

Questions that the were asked during the analysis phase was:

- What difficulties where experienced during the application?
- How applicable was the framework?
- Did it produce desirable outcome?

By reflecting on these question after the action research areas of improvement could be identified. These areas of improvement where then listed and finally incorporated in the framework.

4.4. Quality of the study

Several different opinions exists on how qualitative research should be evaluated since qualitative research such as case studies involve unique features that are very difficult to replicate (Bryman & Bell, 2011). The methods used in this thesis have been evaluated using the quality measures: external validity, construct validity and reliability.

External validity refers to the generalizability of the studies. High external validity is, according to Bryman & Bell (2011) difficult to achieve for qualitative studies since it would require the social setting and external circumstances to freeze. However, some generalizability has been achieved through the extensive link with general theories throughout the development of the framework. The findings from the study have for example been linked with theories such as Porter's five forces, which are well tested

theories and thus have a high degree of generalizability. The framework could thus be generalized to other companies in technology industries. However, the findings from the two studies have a lower degree of external validity as these refer to the specific situation of one company.

Construct validity measures whether the concepts and measures actually measures what they intend to measure (Bryman & Bell, 2011). High construct validity was achieved by triangulating the findings by using both method and data triangulation. Data triangulation was achieved for the both studies by using both interviews and secondary data. This was achieved by using the same interview guide for several interviews and checking the findings with secondary sources of information such as webpages and documents. Method triangulation was achieved for the second research question as the findings for this question came from both the first and second study. Further construct validity was also achieved by letting the interviewees review the transcripts and the report before finalizing.

The reliability of the study relates to whether the results are repeatable. Reliability is according to Bryman & Bell (2011) especially an issue in qualitative research. Reliability for the case study could be assessed to be adequate. In order to ensure reliability, the interview guides are presented in appendix B together with at tick description of the methods used in the method chapter. Reliability for the action research can be assessed to be low due to the highly changing nature of business opportunity. It would for example be difficult to evaluate the business opportunities with the same people and methods without being affected by the prior identification. However, some reliability have been ensured by a throughout description of the research process together with the interview guides presented in appendix B.

5. Study 1 – Case study

This chapter presents the findings from the case study that was performed at Ericsson AB. The data was mostly gathered with semi-structured interviews but secondary sources such as documents were also used. The chapter is divided into two parts depending on where in the organization that business opportunities are evaluated.

5.1. Business opportunity identification and evaluation at several levels

After some initial interviews it could be seen that business opportunity identification and evaluation is performed on several levels and instances at Ericsson. To give an overview of how business opportunities are identified and evaluated at different parts of the company this chapter has been divided into two different sections. The first section deals with how business opportunities are evaluated on a strategic level. The second section shows how business opportunities are evaluated in the new product development process. The information in this chapter, if otherwise not is stated, comes from the interviews presented in appendix A.

5.2. The strategic level

Ericsson uses a structured approach to identify and evaluate business opportunities for its long-term strategy. The strategy is updated annually and the CEO initiates the process in January with an executive leadership team kick off. During the process new business opportunities are identified in a phase called business intelligence scanning where intelligence about e.g. main competitors, partners and customers analyzed and compiled. The outcome of the phase is also an annual report called Business Environment Outlook. In this report are the following data included:

Competitors – The development of Ericsson's main competitors is monitored. Both competitor's strategic direction as well as their offering is analyzed in detail.

Customers – Customers' development and strategies are also analyzed in order to understand e.g. their issues, financial status and market position.

Macroeconomics – In this section is the macro environmental development analyzed. Issues that are included in this part are e.g. infrastructure investments, GDP growth and currency movements.

Regulation / Standardization – A major factor that is affecting the players in the telecom industry is the adoption of standards and regulations. Ericsson therefore monitors closely the development of standards and regulations.

Technology – The development of technologies are also monitored. This includes e.g. the adoption rate of major technologies and upcoming technological shifts.

Users – The development of social factors and other end-user trends are important to monitor since this can change the demand for certain products.

New players – New players could be suppliers, competitors and customers. These are important to monitor since a new player can change the basis for competition in the industry.

The Business Environment Outlook and the business intelligence scanning then act as the basis for the strategy discussions that are held during the year. Those business opportunities those are considered as potentially attractive and in line with Ericsson's core business proceed to an evaluation process.

Those business opportunities that aren't considered as a part of Ericsson's current core business but could provide substantial value for Ericsson and its shareholders proceeds to a process called New Business Development and Innovation (NBDI). The main focus for this process is to identify, select, fund and executive business opportunities that have a substantial growth potential but are out of Ericsson's current core business. For a business opportunity to be considered by the NBDI process it should fulfill the following criteria.

- Significant revenue potential (over 500 MUSD seen in a 5 year perspective) and good profitability potential, or equivalent potential value contribution to Ericsson

- Strategic relevance at Ericsson-level and a differentiating competitive advantage by leveraging key Ericsson assets and capabilities

- Feasible to pursue the opportunity in terms of timing, engaging internal stakeholders and ability to secure the right people

Also, each of the three business units has a specific function called Business Intelligence. The aim of this function is to analyze e.g. competitors' activities, emerging technologies and changing trends in the business environment. These analysis and reports are then used as basis for decisions in the business unit's management team. However, the reports are also made available at Ericsson's intranet and could be used by all Ericsson employees in their daily work. This analysis usually follows a schedule with for example the competitor analysis updated every quarter. The Business Intelligence also produces monthly a document called market briefs that are made available at Ericsson's intranet. These documents contain information about changes in the competitive landscape, technology trends, customer' market position and changes in the regulatory framework.

Closely linked with the Business Intelligence function is Ericsson Consumer Lab. Ericsson Consumer Lab monitor changes in end-user demand and analyzes how consumers use different telecom applications. This information is then feed back to the management and R&D with presentations and documents.

The Business Intelligence function also subscribes to several third-party analyses such as trend reports and statistics, which are made available for all Ericsson employees. These third party analyses could then be used in order to identify business opportunities and emerging technologies.

5.3.   New product development

At Ericsson a standardized process called Product Life Cycle Management (PLCM) controls the new product development process. This process is controlled by the product manager and entails eight different phases of a product's life cycle.

Two of these eight phases are directly related to business opportunity identification and evaluation. These are the two first phases called "identify" and "evaluate". The aim of the identification stage is to identify market/technical opportunities based on end-user interest, customer needs, market and industry trends and technology breakthrough.

Currently no structured approach exists that guides the product managers when identifying new business opportunities. Instead they rely on a unstructured approach where they mostly identifies new business opportunities by compiling customer requirement and new technological standards. The customer requirements have an especially strong position and guides most of the new business opportunity identification. The customer requirement is identified by having a close contact with the customer and is often compiled by the local sales manager.

New technological standards are also an important source of new business opportunities. This is especially important for Ericsson, as standards are important in a network environment. The product manager is thus screening for emerging new standards and after having identified a new standard initiates the evaluation phase.

However, Daniel Molander, product manager at mobile TV says that Ericsson sometimes misses on business opportunities. This is according to him partly because Ericsson lacks a structured process for identifying business opportunities. Also Ericsson has according to him been rather slow to identify and evaluate new business opportunities.

The second stage is the evaluation stage. The aim of this stage is to translate the opportunities into ideas and technical specifications. These ideas and technical specifications are then evaluated based on their market attractiveness and feasibility. A stage gate model governs this stage and the opportunities are evaluated according to several formal criteria. Before the evaluation can be performed the project manager must submit a proposal to the product management steering committee. In this proposal should feasibility study and an attractiveness analysis be included.

In the feasibility study is mostly the technological feasibility investigated. However, other factors are also examined such as cost, time and legal factors. A very important factor is also competitive advantage where it is analyzed whether Ericsson can take a leading position in the field and if it is in line with their current capabilities. Ericsson

has always the ambition to be the leading in the new product group. This leadership is not limited to market share but is also extended to technological leadership

The opportunity is also evaluated based on its attractiveness. The attractiveness is measured by its market size, profit possibility and market growth. In the attractiveness is also a short description of the environment of the opportunity described. This involves factors such as potential suppliers, competitors, substitutes and complements. The proposal should also include a risk assessment where the major risks of the new product development project are to be considered.

The proposal is then evaluated by the product management steering committee, which consists of the R&D management team. If they can se a considerable market and profit potential as well as a potential for Ericsson to take a leading position in the field the opportunity is approved a budget and the business opportunity is developed into a new product.

6. Study 2 – Applying the framework

In this chapter are the results from the action research presented. In the action research the BOF framework was applied to two areas at Ericsson in order to evaluate and improve the framework. The chapter is divided into two sections, which each present the BOF framework applied to a specific field.

6.1. Applying the Framework to Cable TV

Television programs could be sent to the television with several different methods. One of the most common methods is cable TV, which is a system where television programs are sent via radio frequency trough coaxial cables. Coaxial cables differ from other cables by having a copper core surrounded by two insulating layers (Ali, 2012). Cable TV is the most widely used television delivery method in RECA and 37% of all households are getting their television programs from cable. (MRG, 2012)

Ericsson entered the Cable TV market in 2010 when they adapted their current TV solution to the specific requirement of the Cable TV market. Ericsson had since 2007 been providing IPTV solutions for telecom operators. The main difference between Ericsson's IPTV solution and the one for Cable TV is that IPTV is sending over the telephone cable while Cable TV is transmitted over coaxial cables. Ericsson is an end-to-end solution provider, which means that Ericsson can, together with partners, deliver a full cable TV solution. The customer can thus rely on Ericsson as the only vendor for all of its cable TV equipment. (Ali, 2012)

A full cable TV solution comprises of several constituting parts. The most important parts are the content management system, the content delivery system, the middleware and the CA/DRM system. First, the content management system includes the technologies for ingesting and processing the video files that comes from the content owners. The content delivery system constitutes of technologies that create the stream of data that makes it possible to get the picture to the TV. The middleware is a software component that makes the different parts of the solution work together. The middleware facilitates for example the billing system and makes the user able to integrate with the system. The CA/DRM system relates to security and regulates who are able to se the content and what they are able to do with it. For example only those that have paid for the premium channels should be able to see them and no user should be able to copy the content and distribute it on e.g. the Internet (Hyddén & Olsson, 2012).

6.1.1. Opportunity identification

The first step in the BOF framework is to identify business opportunities. The identification of new business opportunities starts with the examination of: competitors, customers, macro environment and the technologies.

Competitor analysis

The main competitors to Ericsson in the field of Cable TV are according to Haidar Ali (2012), Motorola, Cisco and Alcatel Lucent.

Motorola has a strong position in the field of cable TV and has carried out several acquisitions, which have positioned them as a full end-to-end solution provider. Some of the recent acquisitions are the one of Dreampark, a provider of middleware, and SecureMedia, which provides CA/DRM systems. (Current Analysis, 2011)

In May 2011, Google bought Motorola Mobility for $12 billion. Google initially claimed that the reason to the acquisition was to gain access to Motorola's patents and thus avoid an upcoming lawsuit (Carlson, 2012). However, Google also has, according to Lawler and Kim (2011), a plan for how Motorola's TV business should be used. Google has since 2010 offered a solution that they call Google TV. Google TV is a new way of connecting the TV to the internet and simplifies the way customers are searching for video content online. However, Google TV has, according to Lawler and Kim, been a failure and sales have been far less than e.g. the Apple TV. By using Motorola's strong relationships with cable TV operators Google could leverage this in order to expand its Google TV into more homes.

Cisco also offers a full end-to-end solution with several in-house products. In June 2011 Cisco launched its Videoscape solution which is a video solution for both telecom and cable operators. The Videoscape solution is according to Cisco (2012) a video solution that includes several new features such as social networking, access to the Internet and possibility to view television programs on multiple screens. A weakness for Cisco's TV solutions is, according to Current Analysis (2011), that it is a proprietary system, which means that the customer has to buy all the products from Cisco. Thus, if a customer already has a cable TV system it has to change all of its equipment in order to install a system from Cisco.

Table 4. Competitors' position, strengths and weaknesses. (Source: Ali (2012); Current analysis (2011))

Competitor	Offering	Strength	Weaknesses
Motorola	A full end-to-end solution of IPTV for the cable TV market.	A full end-to-end solution without relying on multiple partners. Strong presence in the cable TV market with many customers and subscribers	Currently lacks some technological solutions that other suppliers have Some of Motorola's products trails its competitors in the field of capacity which makes their solution more difficult to scale

Cisco	A full end-to-end solution for the cable TV market.	Has no end-to-end customer Hasn't proven scalability which limits their credibility	Proprietary system. The user has to buy all equipment from Cisco
Alcatel Lucent	Alcatel Lucent offers a full end-to-end TV solution for the cable TV market.	Strategic partnership with Microsoft Sizeable and experienced integration team	Lacks scale and customer references in the field of cable TV High cost for the customer when upgrading from a current Alcatel Lucent system

Alcatel Lucent has for long time been a major competitor to Ericsson on several products groups. When it comes to TV, Alcatel Lucent has been active in providing IPTV solutions for telecom providers. However, most recently Alcatel Lucent has adapted their IPTV products to meet the needs of the cable TV customers. Since they don't have many customers in the field of cable TV they lack proven scalability and customer references which could be a problem for them when selling their solution to new customers. (Ali, 2012)

The main competitors are also focused on different geographical regions. Motorola has an especially strong position in North America, Cisco has a strong position in North America and Russia and Alcatel Lucent is especially strong in Europe (MRG, 2012).

Customer analysis

The forecast for the four most common delivery methods for TV in number of subscribers is presented in figure 19. These four delivery methods are Cable TV, Satellite, Terrestrial (DTT) and IPTV.
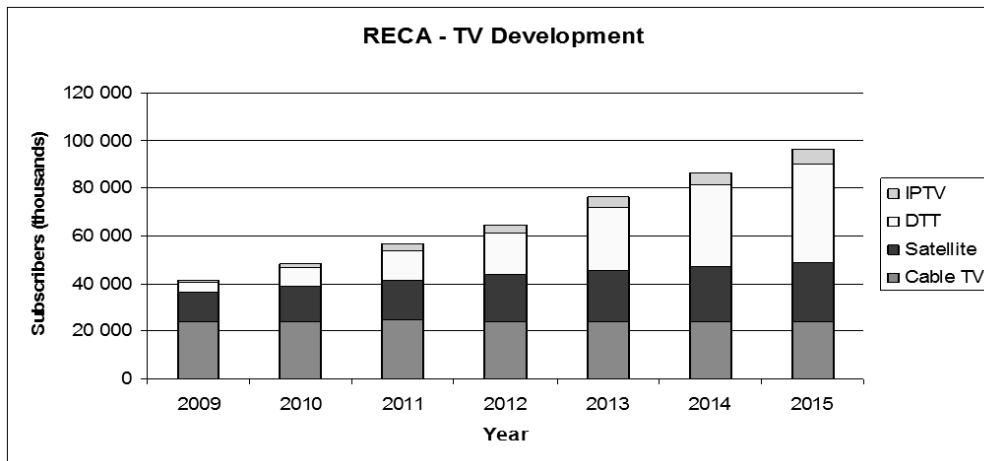
Figure 19. Subscriber development shown for different TV Platforms. (Source: Informa (2012))

From the figure 19 it can be seen that terrestrial is the most fast growing TV delivery technology in northern Europe and central Asia. The development of cable TV is rather stable and has reached a saturation point at about 24 million subscribers. However, the saturation of the Cable TV market can, according to Haidar Ali (2012), gives raise to several opportunities. The reason for this is that when an operator has no possibility to grow its subscriber base it start to focus on how to increase the average revenue per customers and how to decrease its costs as much as possible. This in turn creates opportunities for vendors such as Ericsson to deliver technologies that add services, which can increase the average revenue per user, or new technologies that decrease costs for the operator. (Ali, 2012)

One important factor when examining potential customers is according to Joachim Bergman (2012), the size of the operator and whether the operator has VOD capabilities. The size of the operator must be above 250 000 subscribers in order to be attractive for Ericsson as a customer. The reason for this is that the operator must have a considerable amount of subscribers in order to have the funds necessary to purchase an IPTV system from Ericsson. In figure 20 is therefore the operators in RECA with a subscriber number above 250 0000 presented.
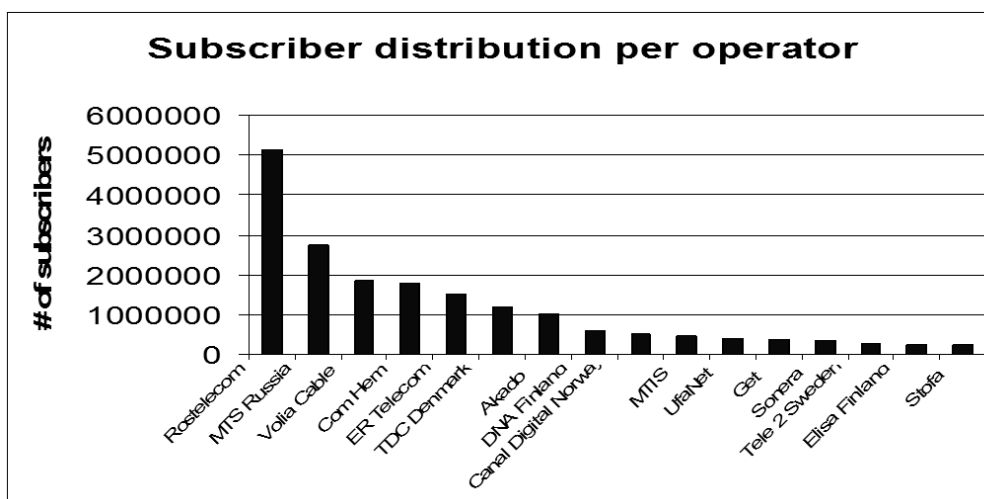
Figure 20. Subscriber distribution per operator in RECA. (Source: Informa (2012))

From this figure it can bee seen that 20 cable TV operators have more than 250 000 subscribers. It can also be inferred from the figure that the subscriber base is consolidated among a few operators since five of the operators have 50% of the subscribers and 14 have more than 70% of the subscribers. Of the cable TV operators with a subscriber base of more than 250 000 subscribers only Volia Cable lacks VOD capabilities. Volia Cable is Ukraine's largest cable TV operator and supports more than 1.85 million subscribers and has operations in 19 of Ukraine's largest cities.

However, other cable TV operators that could become possible opportunities for Ericsson are ER Telecom, Balticom and Akado. These are all in major restructuring and merger rumors, which can give, rise to new upgrades and purchases of new equipment.

Another possible opportunity is according to Haidar Ali (2012) that an increasing number of customers are considering upgrading their system. Many of the most well developed cable TV operators have already bought an IPTV enabled system and is now considering upgrading their current equipment. This can give raise to several opportunities for Ericsson

Technology analysis
There are several technologies that are emerging in the cable TV field. However, the most important will be described in the second part of the analysis.

Macro Environment
The macro environment consists of Political, Economical and Social factors. No political, economical or social factors where found during the analysis that could provide an opportunity for Ericsson.

6.1.2.   Results from the opportunity identification

Based on the findings from the identification phase the following business opportunities where identified.

1. Some large customers lacks VOD capabilities and could be approached
2. Saturated market where new technology services are increasingly important
3. The cable TV market is facing a consolidation trend which may give raise to a need for upgrades of equipment

It was mostly in the customer field where new business opportunities could be identified in the field of cable TV. The market is rather saturated and mature, which makes it more important for the actors with economies of scale. Much consolidation is therefore occurring in the market, which will give raise to opportunities for Ericsson.

6.1.3.   Opportunity analysis

The next step in the BOF framework is to make an opportunity analysis. This is done for all of the three identified business opportunities and consists of feasibility and

attractiveness analysis. These analysis were carried out in collaboration between the research team and Ericsson employees.

Feasibility analysis

The first factor to analyze according to the framework is whether the business opportunities are feasible. The table 5 below show the analysis performed with representatives from Ericsson.

Table 5. Feasibility analysis for the three identified opportunities in Cable TV (Source: Ali (2012))

Factor	Opportunity 1 (VOD)	Opportunity 2 (New technologies)	Opportunity 3 (Consolidation)
Technology	High	High	High
Economic	Medium	Medium	Medium
Legal	High	High	High
Organizational	High	High	High
Time	Medium	Medium	Low

The opportunities that where identified are connected to the customer and doesn't require Ericsson to develop any new products. However, according to Ali (2012), it is likely that some product adjustments must be done in order to make them fit for the specific customer but these won't limit the feasibility. The technological feasibility is therefore assessed to be high for all of the business opportunities in the field of Cable TV.

The economic feasibility is also assessed to be high for all of the three business opportunities. The reason to this is that Ericsson doesn't need to make any major investments in order to approach these customers. However, they need to focus their selling efforts to better reach these customers.

The legal as well as the organizational feasibility was also assessed to be high. The reason for this is that there exist no legal obstacles to sell to these customers. Also Ericsson made a major reorganization two years ago to better meet the needs of its customer and focus its selling effort on the customers in the area. Ericsson therefore now has an appropriate organization to serve these customers and their potential needs.

Time was assessed to be medium for opportunity one and two and low for opportunity three. The reason to this is that it might take long time to build a good relationship with these customers which is important in order to take advantage of opportunity one and two. Opportunity three is occurring slowly since the mergers of the companies may take long time. Opportunity 3 may therefore not be the current focus but something that should be in mind in the long run.

Attractiveness analysis

The three business opportunities were also assessed according to the attractiveness analysis. The assessment that was made with Ericsson employees is presented in table 2.

Table 6. Attractiveness analysis for the three identified opportunities in Cable TV (Source: Ali (2012))

Factor	Opportunity 1 (VOD)	Opportunity 2 (New technologies)	Opportunity 3 (Consolidation)
Profit potential	Medium	Medium	Medium
Market size	High	High	High
Market growth	Low	Low	Low
Industry attractiveness	Medium	Medium	Medium

First, the profit potential is assessed to be medium for all of the three opportunities. The reason for this is that even though the opportunities could give raise to large total sales amount the industry is faced with high competition, which therefore limits the profit potentials. Secondly, market size for cable TV is assessed to be high. The reason for this is that cable TV is the most widely deployed TV platform. Market growth, however, is assessed to be low which depends on the saturated nature of the market. Finally, industry attractiveness is assessed to be medium since high competition limits the possibility to compete; however, the industry also has some attractive characteristics such as strong market and low power of suppliers.

6.2.   Applying the Framework to Cloud TV

Cloud TV is a new concept that has gained a lot of attention in trend reports and industry analyses during the last couple of years, e.g. RCR (2010), Parks (2011), and MRG (2010). Cloud technologies have the potential to radically change how the TV is used in the future and is therefore an interesting area to search for opportunities. More and more televisions are becoming connected to the Internet making the cloud available for more and more TV customers (MRG, 2010).

There is currently no consensus about how to define cloud TV but it is often used to describe a concept that is sometimes used as a "buzzword" for Internet delivered TV. Examining, the concept of cloud computing can help bring some clarity of what cloud TV actually is. A commonly used definition is the one from National Institute of Standards and Technology (NIST):

"Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model is

composed of five essential characteristics, three service models, and four deployment models." (NIST, 2011)

A way of defining Cloud TV proposed by the authors is simply that it is cloud-computing services delivered to a TV. Since Internet delivered TV is often referred to as cloud TV, this area requires particular focus of attention for the opportunity identification. Having the TV connected to the internet opens up completely new opportunities for the end user such as social TV and over the top (OTT) services (MRG 2010).

6.2.1. Opportunity identification

To identify opportunities within the area of cloud TV, information will be gathered about competitors, customers, technology trends and the macro environment.

Competitor analysis
What to include in the competitor analysis has to be adapted depending on the area of search for opportunities. In this case the aim of a competitor analysis is to identifying cloud activity among competitors. A selection of competitors will be analyzed in terms of their current cloud TV offering and what other cloud services they provide.

The key information from this analysis is presented in table 7.

Table 7. Competitor analysis in the field of Cloud TV. (Source: Current analysis (2011), Huawei (2012, Cisco (2012), Motorola (2012), Alcatel Lucent (2012))

	Huawei	**Cisco**	**Motorola**	**Alcatel Lucent**
Current cloud TV offering	Noapparent cloud TV offering	Videoscape	Medios Xperience	No apparent cloud TV offering
Other cloud services	Many cloud services, e.g. Cloud services for mobile phones,	Delivers cloud infrastructures and datacenters	LTE cloud core services - shared hardware creating virtual private LTE networks	E.g. CloudBand – Enabling service providers to offer cloud computing services to their customers

Cisco has recently developed a new TV platform, Videoscape, which enables the end consumer to access several, cloud services. It is a multiscreen solution that enables video call, sharing video with your friends, send messages to friends, twitter, OTT, upload video to youtube and even make purchases with your TV. A multiscreen solution allows the customer to watch TV on multiple screens, for example a regular TV, mobile

phone, tablet or computer. The multiscreen solution provided by Cisco is comparable to Ericsson's multiscreen solution which they say delivers video content to "any screen anywhere". The main difference between Ericsson's and Cisco's solution is that Videoscape offers many more features and is more advanced. A few operators have already ordered Videoscape, for example Roger Comunications Canada, Yes of Israel and Numéricable of France. (Westfall, 2012), (Cisco, 2012), (Chambers, 2011)

Medios Xperience by Motorola is also a multiscreen solution and it enables cloud services like social networking, OTT and gaming in the TV (Motorola, 2012). In this sense it is not that different from either Ericssons or Ciscos multiscreen solution. A general conclusion about the competitors is that they have not yet developed any revolutionizing concepts. Cisco's and Motorola's solutions do include some more features compared to Ericssons offering but these features would probably not be very difficult for Ericsson to implement in their solution. An opportunity for Ericsson could be to also integrate cloud services in its current multiscreen solution. In order to be competitive they need to develop a solution that delivers some additional value for the customer that does not exist in the market today.

Customer analysis
A typical customer for Ericsson's TV offering is a telecom operator. They in turn deliver a range of telecom services to end consumers, for example Internet, TV, telephony etc. In order for a telecom operator to be profitable they need to deliver value to the end consumer and Ericsson has to deliver a solution that can help them achieve this (Ali, 2012).

To understand the dynamics of this market it is important to know that TV is rarely sold to end consumers as a separate service but it is usually bundled as a package with Internet and telephony, e.g. Rostelecom (2012), Com Hem (2012) and ER Telecom (2012). Having a competitive TV offering is therefore important for operators to keep Internet and telephony customers as well. Operators who do not keep up with the latest TV trends can therefore lose many subscribers not only for their TV offering but also for Internet and telephony. Customers are also becoming more and more demanding and are no longer satisfied with traditional linear TV programs that operators deliver. Some end consumers are dissatisfied with paying for a package of dozens of channels when they are only watching a few. They require a more flexible way of watching TV, which operators only partially can deliver through different video on demand services. (Parks Associates, 2010)

Instead, more and more consumers are turning to Internet delivered TV, which provides much more flexibility. This is a problem for operators since the emerging competition from Internet is decreasing the value of their TV offering. Online services like SVT play and tv4 play is becoming more and more popular. Over The Top (OTT), which is TV services delivered over the Internet to apps in the TV, is also becoming more and more popular. The increased popularity of Internet delivered TV is also putting more and more pressure on the networks, which means that costs for operators are increasing. At the same time, they are not making any money on the increasing traffic. One example

that illustrates this is Netflix a video content provider that accounted for 20 % of all Internet traffic in North America during 2010 (Parks et al, 2011) Video content is already contributing with the majority of traffic on the Internet and is still growing. Since Internet TV is only in the early stage of development, operators have to find a way to be able to benefit from the trend. (Kishore, 2011)

Operators have to adapt to the changing consumer behavior and find a way to take advantage of the new opportunities that are presented by the Internet. If Ericsson can develop a solution that will help operators do this the interests among operators is likely to be very high. One opportunity is to develop concepts for integrating Internet services in their current TV offering. Another opportunity could be to help operators profit from the increased Internet traffic.

Technology analysis

Social media like Facebook and Twitter has grown quickly in popularity in recent years. An interesting development is the emergence of social TV which is social media integrated in the TV. This enables the viewer to interact with friends and be social through the TV while watching, for example commenting on programs and check-in to TV-shows, recommend programs, text chatting and audio/video chatting. A benefit for operators with social TV is that it increases viewing time and advertising revenues. Social TV is just in the beginning of development but the potential for the future appears to be high.   (Alvear & Schultz, 2010)

Gartner's hype cycle confirms that social TV is in the early development stage, the technology trigger stage. This means that social TV is very early in its technological development and the expectations are starting to increase rapidly. Social TV is expected to reach mainstream adoption within 5-10 years (Gartner, 2011).
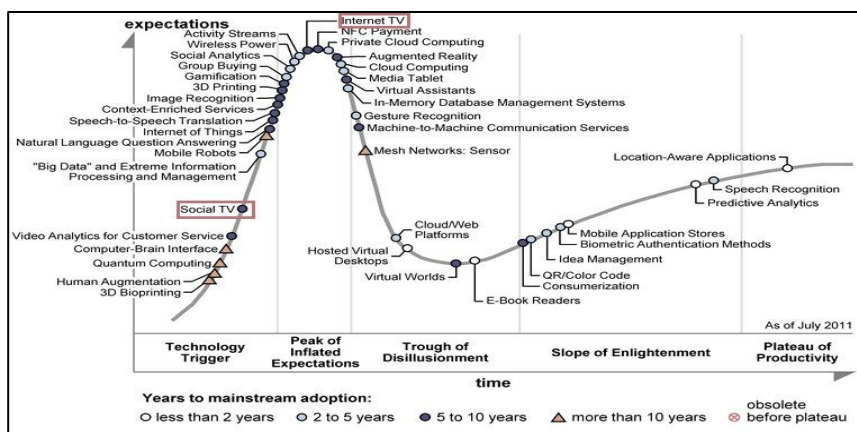
Figure 21. Gartner's hype cycle. (Source:Gartner (2011))

The market for Internet delivered video content is growing all over the world driven by the increase of connected devices, penetration of broadband and increased number of Internet TV services. A connected device is simply a device that is connected to the Internet, for example computers Internet connected set-top boxes and tablets. As illustrated in figure 22 the number of connected TVs sold is expected to increase which will likely continue to drive the expansion of Internet TV. The content is either

delivered through a browser or through an application that is downloaded to a device (OTT), for example a TV tablet or phone. (Parks et al, 2011) In Gartner's hype cycle from 2011, Internet TV is at the peak of inflated expectation. At this stage the expectations of what the technology can deliver are often too high and resulting in disappointment when it does not deliver the results that were hoped for. Internet TV is expected to reach mainstream adoption within 5-10 years (Gartner, 2011).
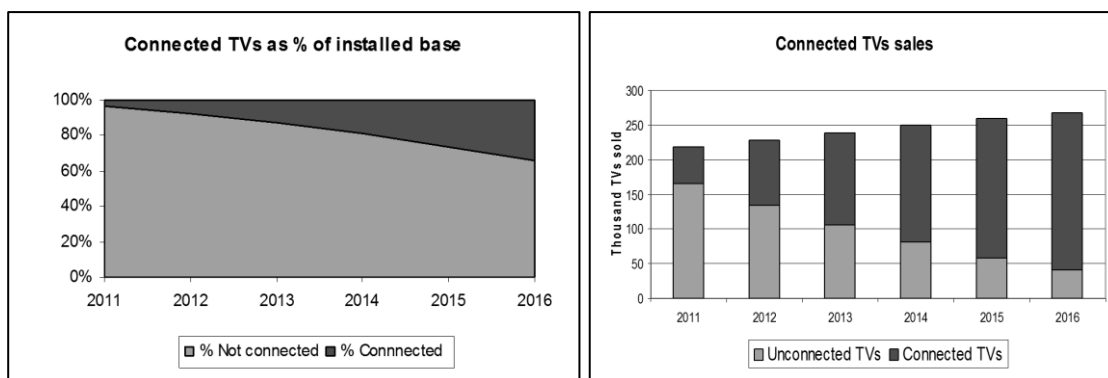
Figure 22. Connected TVs as % of installed base and Connected TVs sales. (Source: Informa (2012))

Social and Internet TV is expected to grow in the future which may present opportunities for Ericsson. One possible alternative is to integrate Social TV and Internet TV in their current multiscreen offering.

Macro environment

To understand the macro environment, political, economic, social and technological factors have been analyzed. The economic environment did not reveal anything particularly interesting for cloud TV. The technological analysis has been presented separately since it was considered to be of particular importance.

A political factor that has to be considered is legislation about distribution of content (Ali, 2012). A social factor to consider is the increased popularity of social media (Alvear & Schultz, 2010). Integrating social media in the TV can therefore be an interesting possibility.

6.2.2. Result from opportunity identification

The information that has been gathered revealed that a couple Ericsson's competitors have started to introduce cloud TV services in their existing TV solutions. It also showed that Internet TV services are growing in popularity and that customers are not completely happy with traditional linear TV. For this reason it would be interesting to evaluate the opportunity to integrate cloud TV services and Internet TV services in Ericsson's existing multiscreen solution.

The customer analysis also revealed that telecom operators have not found a way to make money on OTT and Internet TV, which at the same time are putting more pressure on the networks. Ericsson can develop a solution that will help operators capitalize on the increased Internet traffic created by video.

Opportunities:

1. Cloud TV services, social TV and OTT can be integrated to existing multiscreen solution

2. Help operators make money on internet TV and OTT

6.2.3. Opportunity Analysis

When potential opportunities are identified they are according to the BOF proceeding to the opportunity analysis stage. In this stage is first the feasibility of the opportunities assessed and then the attractiveness.

Feasibility analysis
The technological feasibility for Ericsson to further develop their multiscreen solution appears to be high. It would not require Ericsson to develop a completely new solution but only improving the existing multiscreen offering. Ericsson is constantly making incremental improvements on their products and services and there are no indications that this one would be particularly difficult. Some of Ericsson's competitors already have technologically successful concepts related to this opportunity. According to Ali (2012), the difficulty is to invent a concept that creates interest among customers rather than limitations in technology. What appears to be most difficult is to develop an innovative concept that will differentiate Ericson from the competitors. For the same reason, if Ericsson invents a concept that can help operators make money on OTT it is also most likely technically feasible.

The economic feasibility of the two opportunities can not be determined exactly because of lack of information about budgets for product and business development. However, Ericsson spends a lot of money in new product development so it is likely feasible depending on priorities. Legal aspects to consider have been searched for but no particular issues have been found. It is therefore reasonable to assume that the legal feasibility is also high for both opportunities. One aspect that must be considered is however patents that may cause problems for some new concepts. The organizational feasibility does also appear to be high since developing an improved multiscreen solution should not require any organizational changes. The same goes for helping operators making money on OTT.

Opportunity 1 has medium time feasibility since some of Ericsson's competitors are ahead in development. However their solutions are still rather basic so it is probably not too late for Ericsson to catch up. The time aspect of opportunity 2 show high feasibility since operators are now starting to have problems with increased traffic but at the moment no apparent solution to the problem exist.

Table 8. Feasibility analysis for the two opportunities in Cloud TV.

Factor	Opportunity 1 (Cloud in multiscreen)	Opportunity 2 (Help operators make money on OTT)
Technology	High	High
Economic	Medium	Medium
Legal	High	High
Organizational	High	High
Time	Medium	High

Attractiveness analysis

There is not yet any big establishes market for this kind of solutions but the potential market is very big for both opportunity 1 and 2. If taking the entire market potential in consideration the size is high even if not yet exploited. The growth of this market is low.

The number of pay TV subscribers gives an indication of the potential market, which is now 42 million in RECA. (Dataxis, 2011) However, it will most likely take many years to reach a high market penetration in some markets. In the Baltic countries and in Russia, the TV market is not as developed as in the Scandinavia. The average revenue per user is also considerably lower here meaning that they don't have the same resources to invest in new TV systems. Operators are also more likely to focus on increasing number of users rather than increasing the value of their offering. The Scandinavian market is saturated and operators therefore have to grow by increasing the revenue per user. In order to charge customers with higher prices, they have to increase the value of their offering. One way of doing this could be to offer more services such as OTT, Internet TV and social TV. The conclusion is that the Scandinavian market could be more interesting for this opportunity initially. The Scandinavian market has around 12 million pay TV subscribers. (Informa, 2010) However, the Baltic and Russia are very interesting growth markets that are likely to become more and more interesting also for more advanced TV services.

The threat of new entrants in the TV delivery market in general is not very high. However new players that integrate cloud services in their TV offering are likely to emerge. Most of Ericsson's competitors have not yet implemented cloud in their TV solution but it is reasonable to assume that many of them would be capable of doing so. This means that the threat of new entrants in the cloud TV business is high.

The bargain power of Ericson's main customers, the telecom operators, is high since they have many options to choose from. The operators have several suppliers and different kinds of solutions to choose from. In order to increase bargain power Ericsson must deliver a solution that is significantly better than the competitors'. The bargain power of end consumers, meaning the TV viewers, is also high. They can choose

between several operators but they also have other options, for example Internet TV that is not controlled by operators.

The threat of substitutes is medium. Internet TV and OTT services that are not integrated in a new multiscreen solution are substitutes that are increasing in popularity. Such services are often provided at lower cost compared to the traditional TV offerings from operators.

The Rivalry among existing competitors is high in the overall TV market. However there is not much competition with cloud services yet. If Ericsson can develop a solution that helps operators make money on OTT and Internet TV the competition will most likely be low in this market too. However competition may be higher once a finished concept is completed. To sum up, the industry analysis indicates that the overall industry attractiveness is medium.

Table 9. Attractiveness for the two opportunities in Cloud TV.

Factor	Opportunity 1 (Cloud in multiscreen)	Opportunity 2 (Help operators make money on OTT)
Profit potential	Medium	Medium
Market size	High	High
Market growth	Low	Low
Industry attractiveness	Medium	Medium

7. Analysis and Discussion

This chapter presents an analysis and discussion of the findings from study 1 and 2 at Ericsson and how they relate to the literature review and BOF.

7.1. Study 1 – Case Study

The aim with study 1 was to understand how opportunity identification and evaluation is performed at Ericsson. This process is different depending on which level in the organization it is performed. A structured approach is used on a strategic level and an unstructured approach is used in new product development. The existence of accidental discovery and informal evaluation of opportunities could also be confirmed at Ericsson though interviews.

Strategic level
On a strategic level, Ericsson uses a structured approach for identifying and evaluating business opportunities. This is consistent with how Hüsig et al (2005) proposes that business opportunities are identified and evaluated. However it is not consistent with Koen et al's (2001) description of the fuzzy front end where opportunity identification and evaluation is described as an unstructured process. The new concept model by Koen et al (2001) describes how opportunity identification and evaluation does not follow a linear process flow but it is a work flow that can go in several directions.

Ericsson's approach to opportunity identification and evaluation follow a stage gate process as described by Copper (1990). According to Ardichvili et al (2003) the stage gate model can be useful when evaluating business opportunities. The first stage at Ericsson is identification followed by a gate and formal opportunity evaluation followed by a second gate where opportunities are selected for further development in a process called New Business Development and Innovation. This is also how the BOF is structured.

A defined process for opportunity identification and evaluation is initiated annually starting with identification of opportunities in a phase they call business intelligence scanning. During this phase they analyze and compile information which is presented in a document called the business environment outlook. This is consistent with Baron's (2006) view on opportunity identification which he describes as consciously gathering information and thus coming across opportunities. Ericsson then makes a decision about which opportunities to take further to a formal evaluation of opportunities.

The formal evaluation at Ericsson is performed by analyzing the revenue potential, strategic relevance and feasibility of a specific opportunity. According to Koen et al (2002) the purpose of opportunity evaluation is to determine the attractiveness and feasibility of an opportunity. At Ericsson it thus appears like revenue potential and strategic relevance are the most important factors when determining the attractiveness. According to Ardicvili et al (2003) an important factor to consider when evaluating opportunities is the feasibility which they do at Ericsson.

To sum up, the process for identifying and evaluating business opportunities on a strategic level at Ericsson is very similar to the findings in the literature review. It is also very similar to the conceptual framework that was developed from literature, the BOF. At Ericsson they have a process that can be described as two stages and two gates corresponding to the stages and gates in the BOF. The content of each stage is also more or less the same, however sometimes described in other words.

New product development

Ericsson has a standardized process for new product development which includes the stages "identify" and "evaluate" corresponding to the identification and evaluation of opportunities. However, they don't have a structured approach to opportunity identification and evaluation. In this sense, opportunity identification and evaluation in new product development is more similar to Koen et al's (2001) description of the Fuzzy Front End. At this stage Molander (2012) say that Ericsson sometimes misses opportunities because Ericsson is too slow when identifying opportunities. In other cases Ericsson has not realized the value of an opportunity even if it was identified.

The identification of opportunities is usually performed by analyzing customer requirements and new technological standards but there exist no structured approach that can guide the process. A risk when not having a structured approach is that they miss opportunities in areas where they are not focusing the search. Koen et al (2002) suggests that opportunity identification should include customer analysis, competitor analysis and technology analysis. Without clear guidelines Ericsson risk that some factors are not investigated. Applying the BOF would mitigate the risk of forgetting to analyze for example competitors. Another possibility is to use the same approach as on the strategic level.

The evaluation of opportunities is performed by analyzing the feasibility and attractiveness of each opportunity. In this stage they appear to have a structured approach and putting together a proposal document that is evaluated. In this document the evaluation is based on the same parameters as described in the BOF however they also include other factors. For example, they analyze how likely Ericsson is to gain a competitive advantage, possible risks and if they can access the market for a certain product.

7.2.   Study 2 – Applying the Framework

The purpose of study 2 was to gain a better understanding of how the framework can be applied in practice. The result from study 2 was analyzed in terms of applicability of BOF, difficulties experienced when applying the BOF and if it produced the desirable outcome. By applying the BOF to two areas, cloud TV and cable TV the authors were able to conclude that the framework is applicable on real cases. The BOF enabled the user to follow a predetermined and logical workflow guiding the process. This helped focusing information gathering and analysis to relevant areas.

A difficulty that was experienced was that the BOF only guides which type of information to look for and not how to find it. Information is sometimes difficult to find and a limitation of the BOF is that it does not facilitate information gathering. It can also be difficult to objectively evaluate business opportunities on the parameters suggested by the BOF. When applying the framework, the evaluations of opportunities were qualitative which means that it is impossible to find a correct answer. Assessing the attractiveness of an opportunity to be high is more or less subjective. However, the authors have not found any credible solution to avoid a subjective opportunity evaluation.

The framework was also assessed by analyzing the desirability of outcome from opportunity identification and evaluation. Applying the framework resulted in identification of several new business opportunities for Ericsson. The relevance of the opportunities could then be confirmed by several employees at Ericsson. Thus the framework has produced a more or less desirable result in the two cases.

How the literature review relates to reality was also analyzed in study 2. Koen et al (2002) suggests that opportunity identification is performed by gathering and analyzing information. This view is supported in study 2 where gathering and analyzing information resulted in identification of several opportunities. As described by Ardichvili (2003) the authors experienced that opportunities are evaluated informally in parallel with identification. During the identification of opportunities they were inevitably also evaluated but without any defined parameters. The informal evaluation can be described as subjective and without clear structure or goals. Since the study was focused on the formal search for opportunities, the authors did not make any accidental discoveries. All the identified opportunities were a result from the conscious data gathering.

8. Reflections on the Framework

This chapter describes the author's personal reflections on the applicability and reliability of the different components in the framework.

8.1.   Identification of opportunities

When identifying opportunities, the framework has been very helpful in guiding the search for information. It seem like the more information that is available, the more opportunities are likely to be identified. However, not all information will lead to new opportunities. Looking for the right information and in the right places appears to be an important factor in order to be successful. Since the framework did facilitate the identification of new opportunities for Ericsson, it is reasonable to assume that the framework do guide the search for information in a successful way. A limitation of the framework is that having the correct information available does not necessarily lead to the identification of opportunities as described by Ardichvili et al (2003). Even when having access to perfect information, some persons will identify the opportunity and some persons will miss it. This is a problem that the framework cannot overcome.

The framework describes how some opportunities are identified by "accident"(informal discovery) and some opportunities are identified by consciously searching (Formal search). The existence of two distinctly different ways of finding opportunities has been verified at Ericsson through interviews. Formal search for opportunities are done on a regular basis but sometimes opportunities are discovered without searching.

Applying the framework to cloud and cable TV resulted in some interesting observations and experiences that can be helpful when using the framework. When performing the competitor analysis, it is important to not only consider the most obvious competitors but also indirect competitors and potential future competitors. Indirect competitors may have substitute products or technologies that will dominate the market in the future. When performing the customer analysis, it is important not to forget the entire downstream value chain. In the case of Ericsson, analyzing trends in the end consumer market is at least as important as understanding the direct customers.

The technology analysis was one of the harder parts to perform when applying the framework. A difficulty is to know where to look for new technology trends and how to find the relevant information. In this case, the technology trends were mainly found through interviews, TV trend reports and analyzing different players in the TV market. Applying the s-curves was another difficulty when using the framework. Gathering accurate and enough information to get a reliable result is a time consuming process which is why the s-curves were never applied. However, the s-curve is still a relevant tool to have in mind when analyzing a technology. A technology that is believed to be in a mature stage of the s-curve is less likely to present opportunities compared to technologies that are immature.

Analyzing the macro environment did not reveal any opportunities when applying the framework to cloud and cable TV. Although the macro environment analysis did not reveal any opportunities in this case it should not be eliminated from the framework. Changes in the macro environment can sometimes create huge opportunities. New market opportunities can emerge in countries with quick economic growth or changing political environment and legislation.

A common way that opportunities are identified at Ericsson is by a request from a customer for a new feature or product. Ericsson is constantly keeping contact with customers to be updated on upcoming needs and requirements. Ericson is also monitoring competitor activity but according to Molander (2012) this is often difficult due to lack of available information. It is also common that opportunities are identified by internal technology analysis. The internal technology analysis is performed by looking at Ericsson's intellectual property rights. This is an aspect that is not included in the framework since it is mostly focused on external search for opportunities.

8.2.   Evaluation of opportunities

Evaluating opportunities appears to be more difficult compared to identifying opportunities. According to Molander (2012) Ericsson identifies many promising opportunities but they only have the resources to pursue a few of them. Selecting the best opportunities is therefore very important. The opportunity analysis is aiming to facilitate and improve the selection of opportunities.

Validating this part of the framework is very difficult since the true outcome of the opportunity selection will not be available for many years. In this thesis the outcome of the opportunity evaluation can't be evaluated because of the limited scope and time frame. However it is possible to reflect on the process and how it can help guiding the evaluation of opportunities.

The opportunity analysis includes two main components, feasibility analysis and attractiveness analysis. Applying the framework at Ericsson revealed that the framework is easy to use in theory but some information can be hard or time consuming to obtain. The availability of information is likely to be different in other cases which mean that some information or analyses that were easy to find at Ericsson may be difficult to find in other cases.

Showing that an opportunity is economically feasible proved to be the most challenging task at Ericsson. This would require information about the cost of developing new products and concepts but also knowledge about available budget to spend on such projects. Obtaining this information would probably be easier for someone who is more senior at the company but it could still be challenging. Evaluating the attractiveness of an opportunity in terms of profit potential also proved to be difficult.

In general the framework for identification and evaluation of opportunities appear to be useful and relevant. However, some analyses that are performed at Ericsson are not included in the framework. An important step when evaluating the attractiveness of

opportunities at Ericsson is to determine how likely Ericson is to create a competitive advantage in the specific area. When evaluating the feasibility of an opportunity it is important to also consider the how accessible a possible new market is for Ericsson and what risks are involved in developing an opportunity.

8.3.   The gates

The position of the gates in the framework appears to be similar to the way Ericsson works today, first a decision to analyze the opportunity and then a decision to continue development of concepts. Regarding the content of the gates, it has to be adapted to every specific case depending on requirements for financial return, available funds to invest etc. Therefore, the thesis has not focused on the content of each gate.

8.4.   General reflections on the framework

A general reflection on the framework is that it has been a valuable tool when identifying and evaluating business opportunities for Ericsson. It has resulted in the identification of several interesting opportunities and the evaluation process has provided an indication of the potential of each opportunity.

It was discovered that some parts of the framework can be difficult or time consuming to use in certain cases. In those cases, one option could be to leave out some parts, for example evaluating the profit potential of a specific opportunity. This could be investigated further when an idea or concept related to the opportunity has been developed. The purpose of the framework is to give an indication of which opportunities to pursue rather than giving a definitive answer. The framework will deliver a number of opportunities that are likely to be interesting but the evaluation will continue even after all stages in the framework have been completed. This is when the phase of idea and concept generation initiates. If no interesting ideas or concepts can be generated, the opportunity should not be pursued further.

The framework should therefore not be used in too much detail and the analyses should not be too deep. A risk is that applying the framework becomes a very time consuming process, which it is not, meant to be. Another risk is that the framework is used too rigidly. It should more be considered as a guideline and in particular cases it makes sense to leave some parts out. For example when evaluating an opportunity that arises when a market is deregulated, it does not make sense to make a technological feasibility analysis but focus should be more on legal factors. What to emphasize in the framework, thus has to be adapted to each specific situation.

To sum up, the framework that was developed from literature is useful but there is some room for improvements. There are some analyses that are performed by Ericsson when identifying and evaluating business opportunities that are not included in the framework. In the next chapter, a new and revised framework will be created.

9. Revising the Framework

This chapter will present a number of suggested improvements to the framework, which are based on the case study at Ericsson and the experiences from applying the framework to cable TV and cloud TV.

The framework that was proposed in chapter four has now been tested by applying it to a real situation at Ericsson. It has also been compared to Ericsson's methods for opportunity identification and evaluation. Based on those two studies, a new and improved framework will be proposed.

As described in the reflection, the framework has proved to be useful when identifying and evaluating business opportunities. The order, in which the different tasks are performed in the framework have been confirmed to be relevant. It is similar to the way that Ericsson works and applying the framework have showed that it would be difficult to change this. The formal evaluation of opportunities should not be performed before an opportunity is completely defined. The relevance of each part of the framework has also been validated although some parts can be excluded when applying the framework in certain situations. It is also possible that the framework will require additional analyses in certain situations.

The first stage in the framework, opportunity identification has successfully identified business opportunities and only requires a minor change. The literature has been focused on external search for opportunities, which is also reflected in the framework. However, an important source for new opportunities comes from internal research at Ericsson by analyzing existing IPR and technology. This means that applying the framework at Ericsson will not discover those opportunities. The suggestion is therefore to add an internal analysis to the formal search for opportunities. The internal search may look different depending on the company but for example, as in the case of Ericsson, look at the availability of IPR.

The second stage of the framework, opportunity analysis could not be completely verified in terms of reliability of outcome. However it has been tested in terms of applicability and usability. This analysis confirms that the opportunity analysis is easy to use and can help guiding the process of opportunity evaluation. Even if it appears to be useful, it was discovered that some important analyses that are performed by Ericsson when evaluating business opportunities were not included in the initial framework.

When evaluating an opportunity in terms of feasibility it is important to also consider how accessible a potential new market is for the company. Some markets can be very accessible if the company already has established relationships or distribution channels. A completely new product can be easy to launch if it can be sold to existing customers but it can be very hard if the company must build completely new relationships. Some markets can be hard to access because of distance or tariffs. The accessibility of a market is therefore very important to evaluate before starting to develop products that

can't be sold. A feasibility study should also include risks that are involved with pursuing a certain opportunity. Factor to consider are if developing an opportunity can damage the brand or loss of assets.

When evaluating an opportunity in terms of attractiveness it is important to consider if the company can achieve a competitive advantage in a new market or with a new product related to an opportunity. If the company is not able to compete in a particular market it does not matter how attractive the market is. If the company will not be able to develop competitive products related to an opportunity it is not very attractive to pursue either.

To sum up, the initial framework did include most of the important components when identifying and evaluating business opportunities. There is no reason to make any major changes in the structure of the framework but some very important analyses were missing. The authors suggest that those analyses will be added to the framework to make increase the accuracy of identification and evaluation. The additions to the framework will be:

1. Internal analysis when searching for opportunities.

2. Determine the accessibility to market when evaluating the feasibility of opportunities

3. Analyze possible risk when evaluating the feasibility of opportunities

4. Analyze the likeliness of gaining a competitive advantage when evaluating the attractiveness of an opportunity

The proposed additions to the framework will significantly improve the result that can be achieved by applying the BOF. An improved framework will be suggested and presented in the following chapter, conclusions.

10. Conclusions

This chapter will present the conclusions including answers to the three research questions and presenting the final version of the business opportunity framework which fulfills the aim of the thesis

The conclusions are presented by answering the three research questions and presenting the framework for opportunity identification and evaluation, which was the aim of the thesis.

The case study of Ericsson indicates that business opportunities are identified and evaluated by using a structured approach on the strategic level and unstructured on new product development level. Identification and evaluation of business opportunities are performed differently on different levels in the organization.

The case study of Ericsson and the result from applying the framework indicate that a framework can help identify and evaluate business opportunities. By testing the framework that was developed from literature, the conclusion is that it can be helpful both when searching for and identifying opportunities and when evaluating and selecting opportunities. Ericsson is also using a more or less structured process, which has resulted in several successful businesses.

Using a framework when identifying business opportunities has the benefit that, search for opportunities is focused on relevant areas. Without a structured approach there is a risk that important information is not considered because the person searching for opportunities have not thought about, e.g. the macro environment. To use a framework when evaluating business opportunities has the benefit that all opportunities are evaluated on the same parameters. This facilitates the selection of opportunities.

The drawback with using a framework for opportunity identification and evaluation is that it can be used in the wrong way. It is not possible to create a framework that will fit perfectly to every situation and therefore it should not be used too strictly but instead seen as a guideline. In some situations it makes sense to put more emphasis on certain parts of the framework and in some situations it may even be better to skip some parts. If a framework is used too rigidly, there is a risk that it can become too time consuming.

As already described, a framework may have to look different depending on the situation and industry where it will be applied. In specific industries the framework may have to include specific components that are not relevant in other industries. However there are some parts that will have to be included regardless of situation. The framework has to include opportunity identification, which will be conducted by collecting and analyzing information from different sources. What information to collect and analyze can be adapted depending on the situation.

The framework also has to include an evaluation of opportunities, which can be conducted through a feasibility analysis and attractiveness analysis. The purpose is to evaluate if it is feasible to exploit the opportunity and how attractive the opportunity is

to exploit. The exact components of an attractiveness analysis can be different depending on the objectives of the company. The components of the feasibility analysis may also have to be adapted. A framework should include gates where it is decided whether or not to pursue with a specific opportunity. This is important in order to minimize the resources spent on opportunities that are not interesting.

The aim of the thesis was to develop a framework that can be used to find and evaluate opportunities for technology companies. A framework was first developed based on existing literature about opportunity identification and evaluation. The framework was then tested, validated and improved by applying it to specific cases at Ericsson. It was also compared to the methods that are currently being used at Ericsson for opportunity identification and evaluation. The improved framework is presented in figure 23.
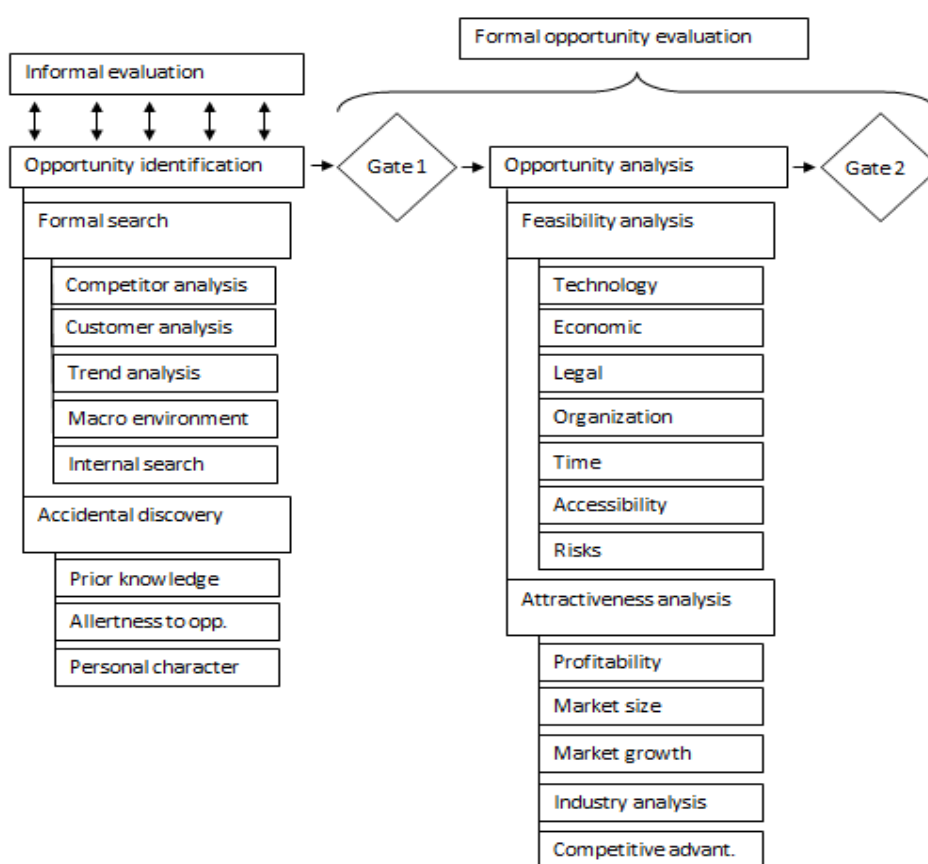
Figure 23. The complete Business Opportunity Framework (BOF).

This framework can help persons in technology companies achieve a more structured way of identifying and evaluating business opportunities. In some particular cases it may have to be adapted. It would also require more testing to further improve the accuracy when selecting the right opportunities to invest in.

The complete framework, illustrated in figure 23, is very similar to the one that was developed from literature since the study at Ericsson showed that it was relevant except for one detail. The initial framework was focused on external search for opportunities but at Ericsson many opportunities are also found through internal search, for example analysis of IPR. This parameter was therefore added to the framework.

11.   Suggestions for further research

In this chapter, the authors give their suggestion for further research in the area of business opportunity identification and evaluation. The authors also suggest how to continue research on the BOF in order to further improve and validate the framework.

This thesis developed a framework for identifying and evaluating business opportunities in technology industries. The study indicated that it could be a very useful tool to help guide a structured process of opportunity identification and evaluation. However, in order to provide a framework that could be generalized to other industries a cross sectional study could be performed. This cross sectional study could be formed as a survey that is sent out to a wide sample of companies.

Such a study would provide other perspectives on how business opportunities are identified and evaluated. Such a survey would also be able to test whether the different concepts in the framework is valid and useful in other context than technology companies. Also, studying a larger set of companies would make it possible to draw conclusions regarding if a structured framework always is preferable or if a unstructured process is more preferable during some circumstances.

Also the study could be complemented with an experimental study where a study group is able to use the framework. This would provide data on whether the framework is not only applicable for a large set of companies but also on a large group of people. It could for example be differences between how people work and some might be more able to identify opportunities using a structured approach while others might be more able using a more unstructured approach. Doing an experimental study could provide evidence whether this is the fact or not.

Another suggestion for further research is whether the framework is facilitated by experience of its user of if it produces the same result regardless of experience. Such a study could be conducted by setting up a longitudinal study where the effectiveness of the framework could be measured over time. This could be measured by measuring the amount of opportunities that are identified over time.

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Appendix A – Interview Schedule

Person	Date	Duration	Position and Department	Interview guide
Gunnar Jonsson	07-02-12	60 min	Consultant - System Integration	**CT**
Joachim Bergman	07-02-12 17-01-12	60 min 30 min	Head of Practice - Engagement Practice RECA	**Cloud** **CT**
Henri Caddéo	07-02-12	60 min	Head of Solution Development - Engagement Practice RECA	**Cloud**
Carlos Gamboa Renzo	09-02-12	60 min	Commercial Support Manager - IPTV	**CT, ESDP**
Niclas Hyddén & Jonas Olsson	12-02-12	60 min	Solution Integrator Solution Integrator	**Lecture about Ericsson TV solution**
Staffan Wallin	20-03-12	60 min	System Manager	**Cloud**
Johan Larsson	22-03-12 19-04-12	60 min 30 min	Line Manager – TV Delivery	**CT, Cloud, ESDP**
Haidar Ali	22-03-12 19-04-12	60 min 30 min	Solutions Architect - IPTV	**CT, Cloud, ESDP**
Carmith Fäldt	22-03-12 19-04-12	60 min 30 min	Solutions Architect - IPTV	**CT, Cloud, ESDP**
Gunnar Slott	21-03-12	N/A (Mail)	Product owner – SVT Play	**ITP**
Jenny Johansson	28-03-12	N/A (Mail)	Technical Project Manager - Headweb	**ITP**
Båb Bengtsson	04-05-12	30 min	Employer Branding manager - Telia	**TO**
Daniel Molander	15-05-12	60 min	Product Manager – Mobile TV	**PM**

Mia Blomberg	05-06-11	60 min	Senior Product Manager - Portals	**CT, ESDP, PM**
Ganesh Seshadri	03-07-11	30 min	Manager- Global Excellerate	**CT, ESDP**
John Rehnborg	05-06-11	60 min	KAM - Telenor	**CT**
Mike Knowles	05-06-11	N/A (Mail)	Vice President - Strategy	**ESDP**
Niklas Rönnblom	01-06-11	60 min	Advisor – Consumer Lab	**CT, Cloud**

Appendix B – Interview guides

Interview guide – Cable TV (CT)

1. **What drives the purchase of IPTV and Cable?**
   1.1. Which factors determine who is a potential customer for Cable?
   1.2. Which are the most common reasons for purchasing a new cable TV solution? E.g. expanding customer base? Increase revenues from existing customers?
   1.3. Who is the traditional Cable TV customer? What do they have in common? E.g. telephone operator? Existing TV-supplier?
   1.4. Are the drivers for purchase static or are there any trends?

2. **Which factors determine who is a potential customer for IPTV?**
   2.1. Which are the most common reasons for purchasing a new IPTV solution? E.g. expanding customer base? Increase revenues from existing customers?
   2.2. Who is the traditional IPTV customer? What do they have in common? E.g. telephone operator? Existing TV-supplier?
   2.3. Are the drivers for purchase static or can you see any trends?

3. **What types of customers are most attractive to Ericsson?**
   3.1. How are target customers identified for Cable and IPTV?
   3.2. What characterizes an attractive customer?
   3.3. Have any kind of customer segmentation been done? If yes, how was it performed and on what parameters?
   3.4. Are there any groups of customers that Ericsson has not targeted yet but are potentially attractive?
   3.5. Can you see any emerging groups of customers or markets that could present new opportunities for Ericsson?

4. **Are there any new markets or applications for Ericsson's TV offering that have not yet been exploited?**
   4.1. Can you see any opportunity where Ericsson could expand their TV offering with new applications?
   4.2. Can Ericsson expand their offering with new applications to suit new markets or customers?
   4.3. Can Ericsson target customers that traditionally would not be seen as potential customers for TV-delivery?

Interview guide – Cloud TV (Cloud)

1. **What is cloud TV?**
   1.1. How would you define cloud TV?
   1.2. What cloud services do you know of that exist today?
   1.3. What services could be delivered through the cloud?
   1.4. What are the opportunities and limitations of what cloud TV can deliver to consumers?

2. **What do you think about the future of TV/cloud TV?**
   2.1. How will the TV be used in the future? Social TV, VoD, cloud services?
   2.2. Do you think that cloud TV will be adopted by the mainstream consumers in the future?
   2.3. Will it change the way consumers use their TV?
   2.4. What role do you think that OTT and internet TV will have in the future?
   2.5. What role will linear TV play in the future?

3. **Do you know if your competitors are doing anything related to cloud TV?**
   3.1. Have they developed any interesting cloud TV offerings that you know of?

4. **Do you see any opportunities for Ericsson related to Cloud TV?**

Interview guide – Internet TV providers (ITP)

1. **What does the system architecture look like for your TV solution?**
   1.1. Where is the content stored? Do you own the servers or is it outsourced?
   1.2. How is the content delivered?
   1.3. What are the components in the network that delivers the content?

2. **How do you secure high quality of delivery?**
   2.1. How is quality affected by the speed of Internet connection of the consumer?
   2.2. Can you improve quality for that kind of consumer?
   2.3. Do you think that you loose customers because of issues with quality?

3. **What do you think about TV in the future?**
   3.1. What will change in the way consumers watch TV?
   3.2. What do you think is the role of Internet delivered TV?
   3.3. Do you think that linear TV will continue to be dominating?

Interview guide - Telecom Operators (TO)

1. **What trends can you see in the way end-consumers are using their TV?**
   1.1. Do you see any trends in the use of VoD?
   1.2. Do you see any trends in the use of internet TV?
   1.3. Are customers using their TV for other than traditional purposes? For example, social TV.

2. **What is your strategy for dealing with the increased popularity of Internet TV and OTT?**
   2.1. Do you see it as a threat or as an opportunity?
   2.2. How will you make money on Internet TV and OTT? For example integrating in your TV package
   2.3. How will you deal with the increased network traffic that Internet TV is creating? For example, charging content providers or end consumers.

3. **What do you know about the concept Cloud TV?**
   3.1. What do you think about it?
   3.2. Are you planning to integrate any cloud services in your TV package?

Interview Guide - Ericsson's Strategy development process (ESDP)

1. **How does Ericsson identify new business opportunities in its strategy development process?**
   1.1. Do you have a structured approach?
   1.2. How does the process look like?
   1.3. Who is performing the identification?
   1.4. Which factors are considered?
   1.5. Is any factor missing?
   1.6. Could the identification process be improved?
   1.7. If yes, how?

2. **How do you evaluate business opportunities?**
   2.1. Are you using a structured approach?
   2.2. How does the process look like?
   2.3. Who is performing the evaluation?
   2.4. Which factors are considered?

3. **Are there any times when you feel that Ericsson has failed in its business opportunity identification and evaluation?**
   3.1. Why did Ericsson fail?
   3.2. Could the identification and evaluation process

Interview Guide - Product Manager (PM)

1. **Could you describe the new product development process?**

2. **How are you identifying new business opportunities?**
   2.1. What factors are you using when scanning for new business opportunities?
   2.2. Do you use a structured approach?
   2.3. How do you find data for the identification phase?
   2.4. What sources do you use?
   2.5. Are any other persons involved in the identification?

3. **How do you evaluate business opportunities?**
   3.1. Which criteria do you use (e.g financial, market attractiveness, feasibility)?
   3.2. Do you use a structured approach?
   3.3. How are you gathering the data necessary for the evaluation?
   3.4. Are any other persons involved in the identification process?

4. **Do you feel that you have the necessary tools to identify and evaluate business opportunities?**

5. **Have it ever happened that you have identified a business opportunity to late? (e.g. after competitors have launched a product or after a technological shift)**
   5.1. What was the reason?
   5.2. Could it have been avoided?
   5.3. If yes, how?