Business Model Evaluation and Generation System

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Preface

This master´s thesis was conducted during the spring of 2011 and represents the final part of our Industrial Engineering and Management master´s degree at Lund Institute of Technology, Lund University.

Particularly the case study taking place at the host company was truly intense, engaging and stimulating for us, why we would like to start by sincerely express our gratitude towards the persons who have provided us with valuable support.

First, a very large thank you to Ola Jönsson, supervisor at the host company, for your deep knowledge, trust in us – letting us work freely, and of course your support, time and effort. Also, thank you to Gustaf Piper, external supervisor at Centigo, for your prompt responses, analytical guidance, tremendous discussion sessions, and valuable contacts. Thank you to Carl-Johan Asplund, supervisor at Lund Institute of Technology, for your guidance, support, inspiration and the valuable discussions we have had along the way.

In addition, we would also like to thank all of the participants in the interview sessions, the workshop and other colleagues at the host company for your appreciated input and for making us feel very welcome since the first day.

Lund, 2011-05-30
Fredrik Engdahl
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Abstract

Title: The Business Model Evaluation and Generation System

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Carl-Johan Asplund, Adjunct, Lund Institute of Technology
Gutaf Piper, Associate Partner, Centigo

Background: The thesis came to be in cooperation with a Swedish company producing and providing high-tech products. The product and service produced by the company which have been the focus of this thesis is considered an innovation, as it in contrast to similar products or services in the market uses a unique hosting system developed by the company, utilizing network and cloud computing. Even though the product and service was considered unique and innovative by the company, and was projected to appeal to a market in strong growth, the success in terms of sales failed to materialise.

Purpose: The purpose of this thesis is to develop a system that can be used to evaluate a company's current business model and generate a new and improved version of it.

Objectives: The thesis objectives may be divided into two separate, but interlinked objectives.
1. A fully developed system which may be used by any company to evaluate and generate alternative business models.

2. A case study performed with the host company's business model as object of interest, in which the developed system is put into practice and tested.

Method: The method used is a Systems approach with quantitative elements, which was used to ensure the holistic perspective. Data was gathered through literature studies, interviews and observations and a case study.

Conclusion: The thesis resulted in a six step system, easy to use by any company consisting of the following: 1. Market Analysis, 2. Business Model Evaluation, 3. Workshop, 4. Business Model Generation, 5. Investments Needed and 6. Implementation plan. In addition a case study was conducted, putting the system into practise targeting the host company´s business model. The system made it possible to identify shortcomings and key success factors used to improve the business model.

Keywords: Business model evaluation, business model generation, business development, Incremental innovation.

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1 Introduction

This chapter serves to introduce the host company and the product and service, which served as a background to the thesis. Further presented is a definition of the problem, purpose and objective of this thesis. Lastly, the structure of the thesis is described.

1.1 Host Company and Product/Service

The thesis came to be in cooperation with a Swedish company producing and providing high-tech products and which is considered to be a world leader in their field. The company has a global presence and distribute products to markets all around the world. Most of the company's products and services are all found in the same product category and are mostly built around the same technology (Jönsson, 2011) as it in contrast to similar products or services in the market uses a unique hosting system developed by the company, utilizing network and cloud computing.

This new product and service, with its new features and functions, has made it possible for the company to target a new market segment outside of their current customer base. As well as making it possible to target a new market segment, the unique hosting system has presented new business opportunities for potential stakeholders and partners in this new product and service venture in the form of a technique known as "*Software as a Service*" (Jönsson, 2011). Adding a product and service utilizing Software as a Service-technique has produced entirely new business opportunities and challenges for the company.

1.1.1 Software as a Service

Software as a Service, or SaaS, describes a technique based on cloud computing, in which the software run by a user from a computer with access to Internet, is actually installed and run from a server connected to Internet which may be located anywhere in the world (Banerjee, Bash, Friedrich, Goldsack, Huberman, & Manley, 2011). It typically involves over-the-Internet deliverance and operation of dynamically scalable and often virtualised resources, such as customer relationship management- and accounting systems. The usage and offering of Software as a Service is getting more and more common among large actors, such as Oracle, Google and Amazon, but have recently also

gained more attention among smaller actors providing it-solutions (Marks & Lozano, 2010, p. 57)

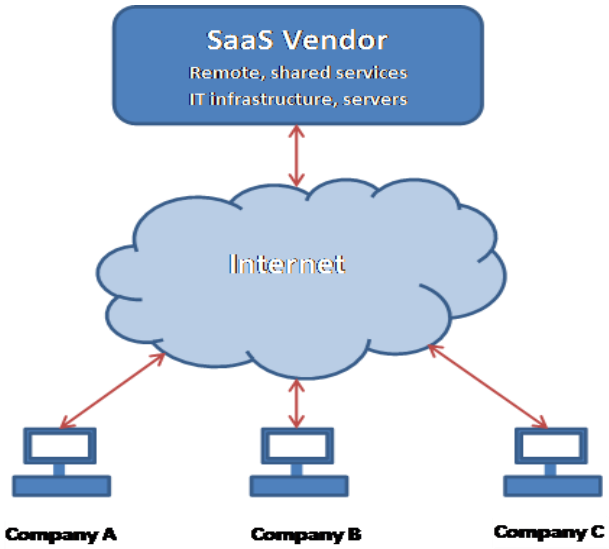

Figure 1 Overview of the structure of SaaS

One of the prime advantages of Software as a Service is the new pathway to business agility and faster time to market it offers potential users. No longer is a large capital investment in IT infrastructure, such as servers for storage and high capacity bandwidth, needed to support a customer base of thousands with web based interface (Marks & Lozano, 2010, p. 75). This opens up opportunities for new start-ups as a mean to quickly respond to new markets and test new business model concepts without up-front costs and time delays in acquiring and operating IT infrastructure (Marks & Lozano, 2010, p. 75).

1.2 Definition of a business model

As definition of a business model for the study performed in this thesis, the authors have chosen to follow the definitions as proposed by Timmers (Timmers, 1998) and Osterwalder (Osterwalder, 2010).

Timmers proposes that “A business model is an architecture for the product, service, information flows, including a description of various business actors and their roles, a

description of potential benefits for the various actors, and a description of the sources of revenue." (Timmers, 1998) Osterwalder defines a business model in a more systematic approach than Timmers and suggests that a business model is based on the following areas:

- Product innovation and the implicit value proposition
- Customer management, including the description of the target customer, channels and customer relations
- Infrastructure management, the capabilities and resources, value configuration, web or network and partnerships
- Financial aspects, the revenue models, cost structure, and profit.

(Osterwalder, 2010)

The areas of a business model proposed by Osterwalder provides a structured and systematic approach for evaluating and developing business models and constitutes a basis for the research carried out in this study.

1.3 Problem discussion

The company's new product and service proposed a shift from the company's traditional field of services and products. Even though the product and service was considered unique and innovative by the company, and was projected to appeal to a market in strong growth, the success in terms of sales failed to materialise. Since its founding the company has adhered to a simple, yet successful business model, which has been applied to all of its products and services. As the new product and service failed to meet the level of sales expected, questions were raised at the company if the business model which has proven to be a success in regards to all their other products and services might not be suitable for this new product and service.

A new business model which took into consideration the alterations of operations the new product and service gave rise to through SaaS was developed by the Host Company. The business model did however not function as it was intended to. It thus became apparent that the current business model used for the new product and service was deficient and a new one, better suited to the market and features of the product and service, had to be developed.

As a consequence the host company desired an analysis and evaluation of the current business model, identifying the weak points, areas and issues in need of change with the desired end result of a new and improved business model better suited for the selected markets of the product and service.

In addition to the evaluation and generation of a new business model, the host company presented a market analysis they wished performed to determine attractiveness and potential of the product and service.

In collaboration with the host company the following analysis was suggested to be performed and delivered by the authors:

- Estimation of market potential and market growth.
- Competitor analysis and possible candidates for acquisition.
- Identify and analyse existing product segments and eventual product substitutes.
- Identify eventual barriers.
- Identify structure of market.
- Distribution channels.
- Customer analysis and verticals.
- Appropriate sales model.
- Alignment with the host company's present business.
- Estimate expected market share, revenue and gross profit.

1.4 Purpose

The purpose of this thesis is to develop a system that can be used to evaluate a company's current business model and generate a new and improved version of it. This is accomplished by a full review and evaluation of the business model for the host company's product and service.

The system produced will then put into practice by performing a case study with the host company's business model as object of interest for the study.

1.5 Objective

The thesis objectives may be divided into three separate, but interlinked goals.

1.5.1 A fully developed system which may be used by any company to evaluate and generate business models.

1.5.2 A case study performed with the Host Company's business model as object of interest, in which the developed method and model is put into practice.

1.5.2.1 Value created to the Host Company by delivering an evaluation of the product and service's current business model and generation of an improved business model.

1.6 Outline of thesis

The outline of the thesis is structured in a logical and coherent way to present the reader with an easy to follow development process of the BMEG system. Each chapter is introduced with a short description of its contents and purpose to present the reader with a brief summary.

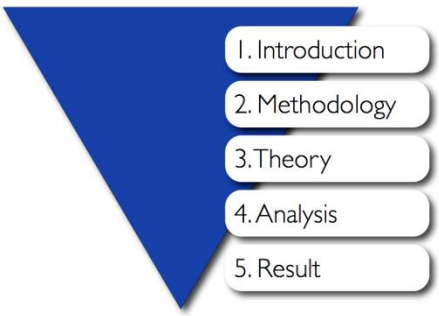

Figure 2 Structure of thesis

The structure and process is visually presented in figure 2, as an inverted triangle. The outline begins by presenting the methodology and theory used in the research process at the top of the triangle where it is at its broadest. The process then continues downwards in the triangle as it narrows down to the thesis end result.

2 Methodology

In this chapter the methods chosen for conducting research, analysis and data collection are defined. Each method chosen is briefly explained and the authors reasoning for applying the method is discussed. The methods chosen are divided into two sections, Research Methods and Methods for Data Collection.

2.1 Scientific approach

To examine and explain the nature of reality regarding the research performed in this thesis assumptions are needed to be made (Arbnor & Bjerke, 1977, p. 4). When formulating these assumptions the authors decided upon a choice of scientific approaches deemed best to suit the process and nature of the thesis. The choice represents three different methods for scientific approach and these are the *Analytical approach*, the *System approach* and the *Actor approach* (Arbnor & Bjerke, 1977, p. 5).

2.1.1 System approach

The authors have chosen to apply the system approach as the nature of the thesis demands an approach which investigates and explains the system as whole by investigating the sub-parts of it. The system approach assumes that the reality is arranged in a way where the whole of the system differs from the sum of its sub-parts. Thus each sub-part individually impacts the system as a whole, where the system is defined as a quantity of components and the relations between these (Arbnor & Bjerke, 1977, p. 72). The authors therefor consider this approach to be very suitable for the understanding and examination necessary for this thesis, where the business model may be considered a system and its different units its sub-parts.

2.1.2 Hermeneutics

By using a system approach the process is viewed in a holistic perspective. This perspective aims to explain the parts of the system based on the properties of the wholeness (Arbnor & Bjerke, 1977, p. 96). As it is necessary to look at both the different parts of a business model and their interaction with each other, as well as the business

model as a whole (Shin & Park, 2008, p. 325) to perform a comprehensive analysis, the authors have chosen a holistic perspective.

2.1 Research methods

Research mostly refers to generalizable knowledge and often takes a long and not always predestined path (Eriksson & Weidersheim-Paul, 2011, p. 17). One of the central starting points when it comes to research is to take a creative and systematic approach when collecting material and evaluating information as well as when analysing the results and drawing conclusions (Eriksson & Weidersheim-Paul, 2011, p. 18).

To perform the research necessary to develop the BMEG system, research in a holistic perspective was deemed by the authors to be the most appropriate method. The nature of the thesis necessities research methods which are adaptive and deliver results both in a general level as the object of research may be of an extensive nature, as well as a detailed level when results obtained from deeper research is appropriate. The methods for research chosen are discussed in the following chapters.

2.1.1 Goal-mean-orientation

In a goal-mean-orientation approach to a study, a goal for both the study and the system is decided upon early in the process. After having established this goal the researcher may then gather the means necessary to reach the goal. The problem, which the study aims to solve, is defined as a lack of goal fulfilment (Arbnor & Bjerke, 1977, p. 191).

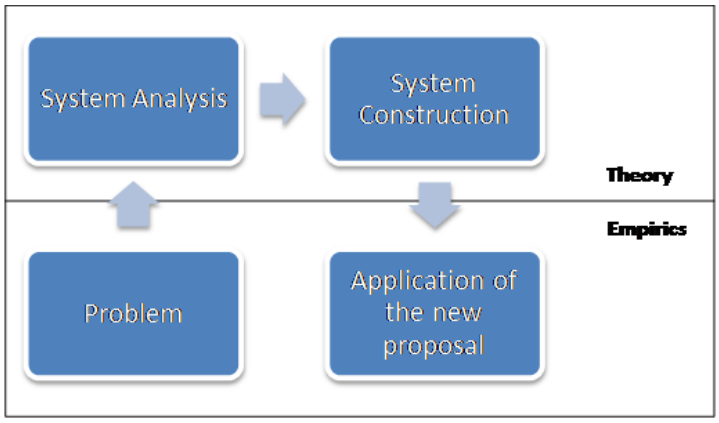

Figure 3 Work flow of System Process (Arbnor & Bjerke, 1977, p. 192)

Since the objectives and goals of the thesis were decided upon in an early phase, the authors chose the goal-mean-orientation as it was the best suited approach to the study. By defining the objective and goal of the thesis, the process could then continue with identifying the necessary means to reach these objectives and goals, such as tools, analytics and research to be used and performed.

2.1.2 Abductive research

"The abductive theory of scientific method serves as an organizing framework within which a variety of more specific research methods can be located" (Haig, 2008).

By applying an abductive research approach the research process may include data gathering and analysis from fields of both empirics and theories. This method is appropriate as it provides conclusions and connections to be made between these two fields which suits the research process of the study.

Adding to this is the nature of the thesis, which is one of investigation of innovation and search for new knowledge. An abductive approach is therefore suitable to choose to produce these results (Holme & Solvang, 1997, s. 51).

2.1.3 Quantitative and qualitative research methods

A number of different methods are often available when one sets out to collect data and information. The choice of method is often based on the method's cost, quality and

accessibility (Eriksson & Weidersheim-Paul, 2011, p. 63). A trade-off between these factors have to be done in most cases as it rarely is possible to choose a method which is both cost efficient, high quality and accessible. The choice one often is presented with is therefore to do either a quantitative research method or a qualitative, or both. (Eriksson & Weidersheim-Paul, 2011, p. 63). In addition to the aspect of cost, quality, and accessibility, is the appropriateness of choice of method in regards to the study itself. Quantitative methods are often more suitable if an analytical approach have been taken, while a qualitative often is more suitable for a system approach (Arbnor & Bjerke, 1977, p. 216).

The approach chosen by the authors for the thesis is a system approach and most of the research methods chosen are therefore of a qualitative nature. Hard data such as market figures and financials are however obtained through quantitative research methods.

2.1.4 Case studies as research

Case studies, according to Backman (Backman, 1998), "investigates a phenomenon in its realistic environment or its context, where the boundaries between phenomenon and context aren't given."

Case studies are especially applicable in evaluations, where the object of study often is very complex. The object of study may for example consist of an individual, a group or an organisation (Backman, 1998, p. 49). When choosing case study as methodology the objective may be to understand or describe large phenomenon such as organisations, which aren't easily evaluated with other methods. A case study may be descriptive, explanatory or explorative. (Backman, 1998, p. 49).

The research method chosen by the authors is an explorative one and the object of research may be said to be of a very complex nature. The authors reasoning in choosing case studies as a method may be traced to these two factors and the undefined boundaries of the object of research.

2.1.5 Strategy of research

When approaching the research process a strategy of research was developed by the authors and followed in order to make the process as coherent and productive as possible. This also assisted in making sure no field of interest were left out and presented the authors with a clear road map for the different phases of the research. The strategy of research was compared with the objectives and goals of the thesis to ensure an alignment existed with the desired outcome of the research. The strategy was presented to the host company to explain and receive their approval to the authors intended way of proceeding.

The different phases of the research strategy are visually presented in figure 4. Shown as interlinked arrows in the figure is the iteration process of the research strategy. Movements back and forth between the different phases occurred since more feedback was received as the research progressed.

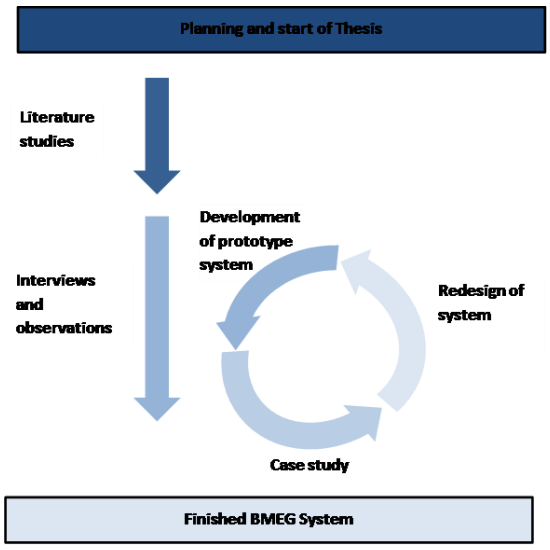

Figure 4 Work process as implemented from Strategy of Research

The first phase consisted of **literature studies** with the objective of giving the authors insight and knowledge of the product and service in question, as well as the methods to

be used in the research process. This was obtained through articles, books and reports supplied by the host company or the authors. Relevant literature was obtained by using keywords such as: Business model, Business model generation, business model evaluation, innovation.

This phase was followed by **interviews and observations** carried out by the authors internally at the host company. The goal of these interviews and observations were to further the understanding of the product and service and hear the opinions of employees who in some way were involved in the product and service. As the research progressed external interviews with potential end users of the product and service were carried out.

After the data gathering phases had been carried out a first attempt was made to perform **development of prototype system**. This prototype of the BMEG system was developed by using knowledge and data gathered from the earlier phases of the research strategy.

The prototype model developed was then put into practise by performing a **case study** in which it was applied to the host company's current business model. By performing the case study valuable feedback of shortcomings and errors of the prototype was obtained.

The feedback generated from the case study was used in the final phase of the strategy to perform a **redesign of system**.

2.2 Methods for data collection

Quantitative and qualitative data collected for research may be either primary or secondary data (Arbnor & Bjerke, 1977, p. 209). All kinds of data which has been collected by any other person than the person utilizing it are considered to be secondary data (Arbnor & Bjerke, 1977, p. 191). Primary data is thus considered to be all kinds of data collected in first hand by the person with intention to use it in his or her research. As such, data of both primary and secondary kind have been collected for use in the thesis.

2.2.1 Primary data

Collecting primary data may be done by either observations, interviews or by conducting experiments (Arbnor & Bjerke, 1977, p. 210). During the research phase of the thesis primary data was collected through observations from a workshop conducted internally at the host company and through interviews also conducted internally at the host company.

2.2.1.1 Interviews

Interviews are a common way to collect information and different types of interviews may be conducted. These types are *personal interview, telephone interview, postal survey* and *group survey* (Arbnor & Bjerke, 1977, p. 211). Two types of interviews were conducted during the study and these were personal interviews and telephone interviews.

Personal interviews were deemed to offer the best interview option to gather data internally at the host company. As the authors were located at the host company's office and had easy access to those interviewees who were of interest, time or travel posed no problem to performing personal interviews. The questions asked during internal interviews were based on the Business Model Canvas (Osterwalder, 2010). This approach was chosen as it enabled the authors to obtain input relating to all fields of interest concerning the business model and compare the answers from interviewees. External interviews were conducted with potential end users of the product and service and where chosen by the authors to be conducted over telephone. Since many of the external interviewees were located all over Sweden and these interviews typically had duration of 20 minutes this type of interview was considered to be the most appropriate.

The questions asked during interviews may be either open or closed, with open being defined as a "question without bound response alternatives" and closed being defined as a "question with bound response alternatives" (Arbnor & Bjerke, 1977, p. 211). When conducting personal and telephone interviews the objective was to gain insight of the

interviewees opinions and perceptions and the authors therefore chose open questions to be best suited.

2.2.1.2 Workshop

During the workshop data was gathered through direct observation. Direct observation is commonly divided into four different types: *participatory observation*, *complete participatory observation*, *minor participatory observation* and *complete observation* (Arbnor & Bjerke, 1977, p. 210). The observation methods differ in the amount of participation from the observers and the level of knowledge the observed population has of them being observed.

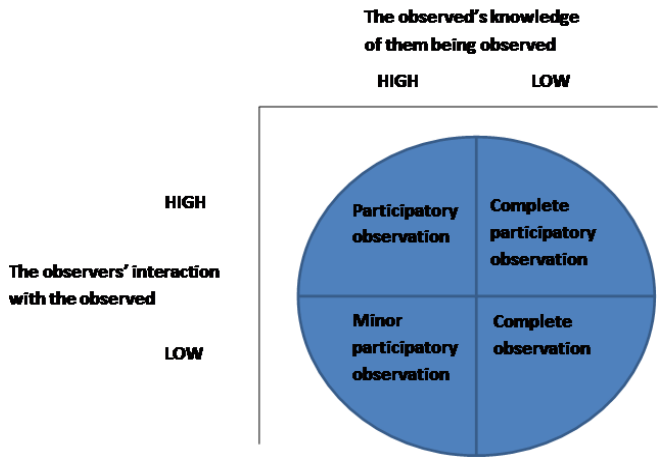

Figure 5 The different types of direct observation

All who participated in the workshop were fully aware they were being observed and the authors' interaction with the participant was decided to be limited. The workshop may thus be said to have been a form of minor participatory observation.

2.2.2 Secondary data

Secondary data typically involves different types of literature, such as books, reports, protocols and articles (Arbnor & Bjerke, 1977, p. 213). Compared to primary data the

resources and time necessary to collect secondary data is usually less, with the exception of secondary data prepared by a third part, which usually may be obtained for a fee and thus incur a high expense. Secondary data is often easier to get access to and in larger volumes compared to primary data and has thus been an important source of data collection for the thesis.

Market and industry reports have been a considerable resource when performing market analysis. A number of scientific articles covering models and methods of interest have been obtained using the LibHub database (LibHub, 2011) supplied by Lund University. Books of interest have been obtained at libraries of Lund University as well as purchased by the host company at the wish of the authors.

2.2.2.1 Market and industry reports

A market analysis and market projection was a part of the thesis objectives and a number of market and industry reports were thus obtained by the authors to collect necessary data. These reports where in some cases supplied by the host company and in others obtained by the authors by using Internet and databases.

2.2.2.2 Relevant scientific articles

Scientific methods and models relevant to the field of study of the thesis were gathered by collecting and reading scientific articles obtained through Lund University's database LibHub. The objective of obtaining scientific articles was to gather methods and theories concerning evaluation of different business models developed by other authors. This enabled the authors to gain insight of previous work conducted in this field and apply suitable theories and methods. Articles used may be found in the list of references.

2.2.2.3 Books

To be able to approach the problem defined in the thesis with the necessary knowledge and preparedness the authors opted to select appropriate books deemed to cover relevant topics. The books were mostly chosen in the early phase of the thesis and studying them where part of the phase of literature studies in the research strategy. However, as the research progressed it became apparent that the thesis library needed to be expanded further and additional books were added. The books chosen covered topics such as market analysis, cloud computing and business model theories.

2.3 Validity and reliability

Validity is the most important factor to consider when assessing different results of research (Arbnor & Bjerke, 1977, p. 216). Without a well-defined answer to the question "what is the purpose of this research" the results are in danger of becoming meaningless. The validity may be seen as a central part of the relation between theory and data. Continuous adjustment between theory and research methods may therefore improve the validity (Arbnor & Bjerke, 1977, p. 216). To determine the validity the research and results may be presented to persons taking part in the system chosen for research. These persons may then provide feedback on their opinion of how reasonable and valid the results are. These persons could be experts within the specific field of interest concerning the research (Arbnor & Bjerke, 1977, p. 217).
The authors have approached the issue of validity by continuously presenting and discussing the results obtained with supervisors and experts at the host company.

Results obtained by research are considered reliable if the same results may be produced on repeated measurements (Arbnor & Bjerke, 1977, p. 216). Reliability is important when performing analytical research which emphasize quantitative analysis and should be verified as often as possible. When you are performing research according to a System approach, the reliability is of lesser concern since qualitative analysis account for the major part of the research conducted. Qualitative analysis is not as precise as quantitative and is therefore not as desirable to ensure reliability of (Arbnor & Bjerke, 1977, p. 216).

As the authors have chosen a system approach and most of the analysis conducted in the thesis is of a qualitative nature the issue of reliability was deemed to be of lesser concern. Results obtained during analysis of market forecasts and potential were verified to be reliable by conducting these analysis more than once and with different parameters to verify that the conclusion was consistent with ones drawn earlier.

2.4 Credibility of the study

The authors took a number of measures to ensure the credibility of the study performed in the thesis. This verification of credibility was achieved by constantly viewing the results from a critical perspective and pose the question “Is this a credible result?”. By conducting the study at the premise of the host company the results and conclusions drawn could instantly be verified by supervisors present at the host company. In addition, weekly discussions were held with an external supervisor, a consultant at a Swedish Management Consulting firm. This increased the credibility of the study as feedback could be received from a neutral part with considerable experience from business development.

To further ensure that the study had a high level of credibility and covered relevant fields of research a number of meetings were held with all involved during the process. These meetings served to present the conclusions drawn by the authors as well as issues which might have appeared to the supervisors at the company and university. The supervisors could thus provide input and feedback to these conclusions and issues and give their recommendations on how to proceed with the study.

A potential issue of working closely with the host company and at its premises is of course the issue of performing objective and unbiased research. When validating research performed and paths of process with supervisors present at the host company there always will be a risk of intentional as well as unintentional bias. This may result in the study covering areas or following a process as wished by the supervisors or stakeholders at the host company instead of the areas and processes planned by the authors. Methods chosen and data obtained may be biased as well, which is why this should always be reviewed with a critical view.

By having access to an external supervisor the risk of ending up with biased results were minimised as the process of the study and methods could be verified by this neutral part.

3 Theory

This chapter describes the models and theories used in the thesis to reach the main objective: "To create a tool to evaluate underperforming business models and generate new improved business models". It begins with theories used for market analysis and thereafter describes theories of evaluation of a business model. The third section covers workshop theories, and lastly it describes the generation a new business model.

3.1 Market Analysis

The market analysis was requested by the host company as a tool for gaining knowledge of the product and service's market, but it was also performed as a first step in trying to evaluate how to reach potential customers in a market and to assess their needs.

3.1.1 Market potential and market growth

Market potential and growth is obtained through primary data sources such as market research reports.

3.1.2 Product life cycle

The market will be evaluated using the product life cycle curve which is presented in figure 6.

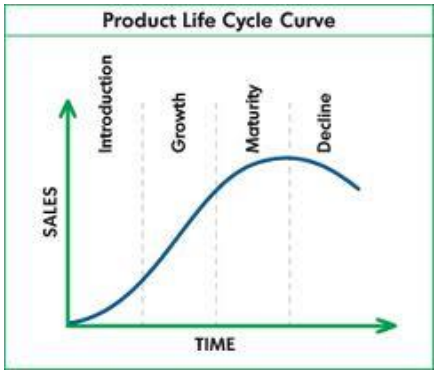

Figure 6 Product Life Cycle curve (Levitt, 1965)

The main objective is to analyse in which phase the market is currently in (Levitt, 1965).

3.1.3 Competitor analysis

A competitor analysis describes the largest actors in the market and the number of competitors present in the market. The analysis aims to investigate their strengths, weaknesses, positioning strategies, products advantages and disadvantages, and pricing strategies.

3.1.4 Possible candidates for acquisition and partnerships

Possible candidates for acquisition have been identified by using a framework where a number of aspects are considered (Consentino, 2009). The framework addresses the following four objectives when considering which company to partner with:

- Synergies are reached between the two companies
- An acquisition gives access to new markets
- To pre-empt competitors
- To diversify holdings

3.1.5 Identify eventual barriers.

When identifying possible barriers in an industry a theory that often is used is Michael Porter's model of "Five Forces framework" (Porter, 1979). A basic description and usage of the model and theory will hereby follow.

Michael Porter's theory was first formulated during the late 1970's as a tool for measuring who holds the power in a business situation. It deals with five forces that affect a company conducting business in the specific industry and these forces are: Supplier Power, Buyer Power, Competitive Rivalry, Threat of Substitution and Threat of New Entry.

The overall purpose is to identify who has the upper hand and why. Knowledge of where the power lies in an industry makes it easier to adapt planning and identify if the service or business have the potential to be profitable and in addition what is needed to stay competitive.

The authors have chosen to break Porter´s Five Forces into eight questions describing the barriers for the companies to be investigated. It was done in order to more easily

compare different advantages or disadvantages of the market of interest for a company. These questions are the following:

- Do the market actors require large amounts of capital?
- Which actor has control of resources?
- Are the customers loyal?
- Are there a large amount of distributors (to make agreements with)?
- Do the company benefit from economy of scale?
- Does the company benefit from intellectual property?
- Does the company benefit from strong R&D?
- Are the switching barriers high?

Each question will be given a score between 0, which indicates low barriers, to 5 indicating high barriers.

3.1.6 Identify structure of market

Market structure refers to the number and distribution of competing firms in a market (Besanko, Dranove, Shanley, & Schaefer, 2007, p. 192) and are often characterised by the degree of seller concentration. A competitor is hereby defined as a firm which offers similar product performance characteristics, similar occasions for use and which products sold in the same geographic market. The authors have chosen to visualise the market structure in a map showing actors from the different tiers and how they are connected to each other.

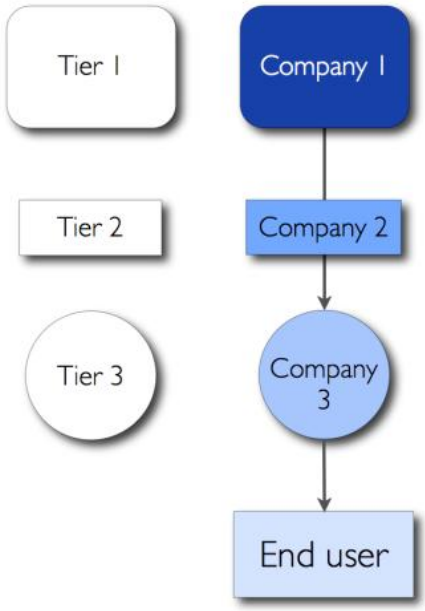

Figure 7 Map of market structure

3.1.8 Customer analysis and verticals

The first part of the analysis aims to identify how well the product fits with different customer verticals. A customer vertical is defined as a target customer group, which may contain more than one segment related to the group. An example is the retail vertical which contains shops and restaurants. It is done by listing product features and characteristics together with the customer verticals, giving each vertical a scoring between 0 - 5, where 0 indicates that the vertical does not find the product feature attractive, and vice versa.

Table 1 Customer grid analysis

Grid analysis	Vertical 1	Vertical 2	Vertical 3
Product feature 1	Scoring	Scoring	Scoring
Product feature 2	Scoring	Scoring	Scoring
TOTAL	**Scoring**	**Scoring**	**Scoring**

The second part of the analysis aims to clarify the sales potential for each vertical. This is done through data collection from primary sources such as market research.

3.1.7 Distribution channels.

In order to identify how products reach end users in the market, distribution channels need to be identified. It is done by studying the product flows from producer, to and between tiers and lastly to the end customers. The authors have chosen to visualise this graphically in a map describing the different levels and channels used for information and products between stakeholders. Data to construct the map is obtained from primary sources such as company websites.

3.2 Evaluation of business model

The following section deals with the theories used when constructing and evaluating a company's current business model. The most important part in this section is the "Business Canvas Model" (Osterwalder, 2010) which will later be used as a basis in the evaluation-, workshop- and generation phase of a business model.

3.2.1 The Business Model Canvas

The Business Model Canvas serves to create a common and shared understanding of a business model throughout the organisation and all its stakeholders. It is a graphical description of how an organisation goes from value proposition to satisfied customer.

The Business Model Canvas consists of nine important building blocks, which defines the current business model in a structured way, focusing on four main areas of a business:

- Customers
- Offer
- Infrastructure
- Financial viability

The full nine building blocks are the following:
First five, related to value creation:

- Customer segments
- Value proposition
- Channels
- Customer Relationships
- Revenue Streams

The last four, related to internal efficiency:

- Key Resources
- Key Activities
- Key Partnerships
- Cost structure

The nine building blocks will hereafter thoroughly be explained and are visualised in figure 8 (Osterwalder, 2010, p. 15).

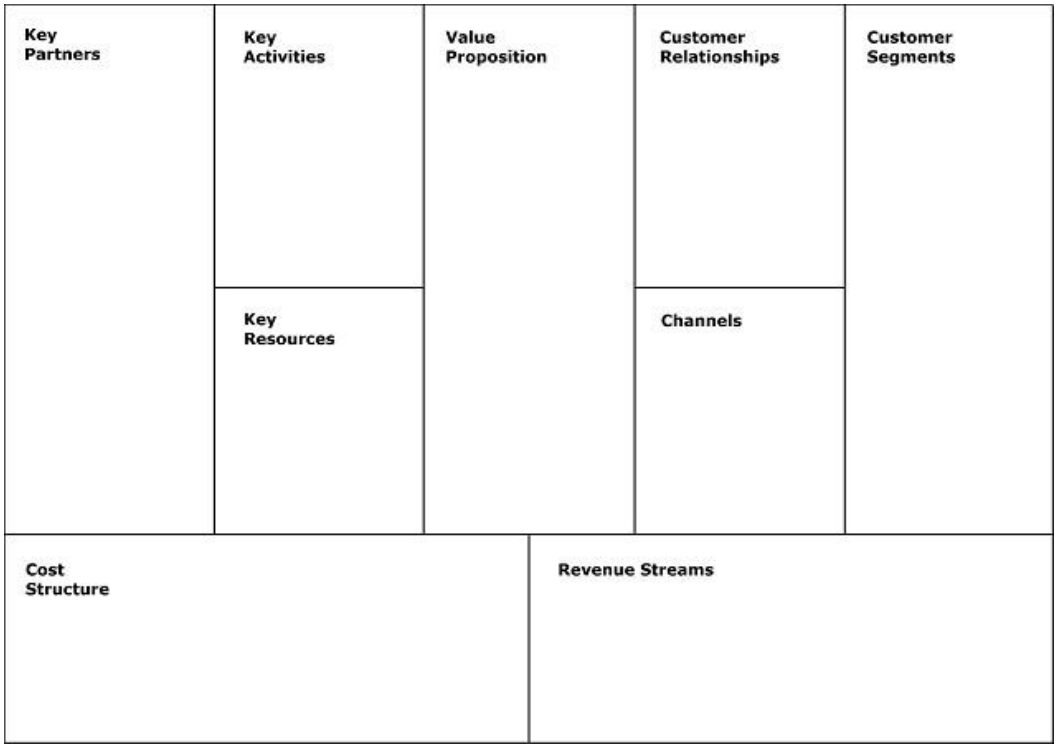

Figure 8 Business Model Canvas (Osterwalder, 2010)

3.2.1.1 Customer Segments

The groups of people or organizations an enterprise aims to reach and serve are defined as the customer segments. In order to better satisfy needs, a company may group its potential customers in distinct segments. This segmentation may be applied if the customers:

- Require distinct offer
- Reached through different distribution channels
- Require different types of relationships
- Substantially different profitability
- They are willing to pay for different aspects of the offer

In the Customer Segments building block it is important to identify for whom the company is creating value and who their most important customers are (Osterwalder, 2010, pp. 20-21).

3.2.1.2 Value Proposition

The value proposition describes the bundle of products and services that create value for a specific customer segment. The value can be of a quantitative or qualitative nature. It may be said to be the reason why customers turn to one company over another.

Examples of value for a customer may be:

Newness	Cost reduction
Performance	Risk Reduction
Customization	Accessibility
Getting the job done	Convenience Usability
Design	Brand
Price	

When contemplating the value proposition it is important to identify a number of aspects such as:

- What value is delivered to the customer?

- Which one of the customers' problems is helped?
- Which are the customer needs that are satisfied?

(Osterwalder, 2010, pp. 22-25)

3.2.1.3 Channels

The channels building block describes how a company communicates with its customer segments and how it reaches it to deliver the value proposition. It includes communication-, distribution-, and sales channels - interface with customers. Channels main objective is to raise awareness, help customers evaluate the value proposition and to allow customers to purchase specific products and services.

Table 2 Channel types

Different Channel types	
Direct	Sales Force
	Web sales
Own	Own Stores
Indirect	Partner Stores
	Wholesaler

Main questions to answer when investigating the channels are:

- Through which channels do our customer segments want to be reached?
- How are we reaching them now?
- How are our channels integrated?
- Which ones work best?
- How are we integrating them with customer routines?

(Osterwalder, 2010, pp. 26-27)

3.2.1.4 Customer Relationships

The customer relationship describes the types of relation a company establishes with its specific customer segments. When choosing which type of relationship it wishes to

maintain with a particular customer segment the motivation is often driven by the company's goal which may be customer acquisition, customer retention or boosting sales.

The main questions to answer regarding customer relationships are:

- What relationships does the customer expect us to establish and maintain?
- Which are the established customer relationships?
- How costly are they?
- How are they integrated with the rest of the business model?

(Osterwalder, 2010, pp. 28-29)

3.2.1.5 Revenue Streams

The revenue streams describe the income a company generates from each customer segment, where income is the cost subtracted from the revenues. A company's revenue stream is often considered to be the heart of its business model.

Revenues may be divided into two types:

- Transaction (one-time-buy)
- Recurring revenues

Examples of ways revenue may be generated:

- Asset sale (physical product)
- Usage Fee
- Subscription fees
- Lending/renting/leasing
- Licensing
- Brokerage fees
- Advertising

Table 3 Pricing mechanisms

Pricing mechanisms	
Fixed Menu Pricing	Dynamic Pricing
Prices are based on static variables	Prices change based on market condition
List price - Fixed prices for any value prop	Negotiation - negotiated by two parties (skill)
Product feature dependent- nr of features	Yield Management - inventory at time of pur.
Customer seg. - characteristics of customer	Real-time-market -Based on supply/demand
Volume dependent – quantity of purchase	Auctions - Competitive bidding

The main questions to answer regarding revenue streams are:

- For what are they really willing to pay?
- For what do they currently pay?
- How are they currently paying?
- How much does each revenue stream contribute to overall revenues?

(Osterwalder, 2010, pp. 30-33)

3.2.1.6 Key Resources

Key resources include the most important assets required to make the business model work. They describe what the company needs to create in order to be able to deliver the value proposition, reach its markets and maintain its relationships and to earn revenues.

A number of different types of resources may be considered key resources and examples are:

- Physical
- Intellectual

- Human
- Financial

The main questions to answer regarding key resources are:

- What key resources does our value proposition require?
- What key resources do our distribution channels require?
- What key resources do customer relationships require?
- What key resources do revenue streams require?

(Osterwalder, 2010, pp. 30-33)

3.2.1.7 Key activities

Key activities are considered to be the most important things which a company must undertake to successfully operate its business. Key activities describe the activities required in order to be able to deliver the value proposition, reach markets, customer relationships and to earn revenues.

Some examples of key activities are:

- Production
- Problem Solving
- Platform/Network

The main questions to answer regarding key activities are:

- What key activities does our value proposition require?
- What key activities does our distribution require?
- What key activities do our customer relationships require?
- What key activities do our revenue streams require?

(Osterwalder, 2010, pp. 36-37)

3.2.1.8 Key partnerships

The key partnerships describe a company's network of suppliers and partners which is a requisite to make the business model work. These key partnerships may take the form of the following:

- Strategic alliances
- Cooperation: Partnership between competitors
- Joint Ventures to develop business
- Buyer-supplier relationships to assure reliable supplies

A company may wish to establish a partnership for reasons of:

- Optimization and economy of scale
- Reduction of Risk and uncertainty
- Acquisition of particular resources and activities

The main questions to answer regarding key activities are:

- Who are our Key partners?
- Key suppliers?
- Which Resources are we acquiring from partners?
- Which activities do partners perform?

(Osterwalder, 2010, pp. 38-39)

3.2.1.9 Cost structure

The cost structure describes all the costs which are incurred to operate a company's business model. The costs present in the cost structure are then ones which are considered necessary when creating and delivering value, maintaining customer relationships and generating revenue.

There are two main structures when applying a cost structure to a business model:

- Cost-driven
- Value-driven

The focus is to minimise the cost wherever possible when opting for a cost-driven business model while cost is of lesser concern when opting for a value-driven. For the latter the focus is on value creation for customers.

The main questions to answer regarding cost structure are:

- Which is the most important cost inherent in our business model?
- Which key resources are most expensive?
- Which key activities are most expensive?

3.2.2 Business environment

The business environment is connected to the market data obtained in the section of market analysis. In this section it serves to analyse how the market data is affecting the business model in the sub areas, key trends, industry forces, market forces and macroeconomic forces.

3.2.2.1 Key trends

The key trends are identified by applying the concept present in the PESTEL-analysis (Gillespie, 2007) which covers the technology trends, the regulatory trends, the societal and cultural trends and the socioeconomic trends.

3.2.2.2 Industry forces

Industry forces are investigated and identified by performing an analysis based on Porter´s five forces (Porter, 1979), which is described in chapter 3.1.5.

3.2.2.3 Market forces

The market forces are identified by applying and performing a trend analysis in market segments, the needs and demands, the market issues, the switching costs and the revenue attractiveness.

3.2.2.4 Macroeconomic forces

Macroeconomic forces are identified by investigating key macroeconomic trends in global market conditions, the present condition of the capital markets, commodities and other resources and economic infrastructure of relevance.

3.2.5 Simplified Gap model

The authors have chosen to use a simplified Gap model (Parasuraman, Zeithaml, & Berry, 1985) in order to evaluate the difference (gap) between the value proposition given by a company and the perceived value proposition to end customers or customers in other tier levels. A common high-tech business model, shown in figure 9, uses distributors and resellers in a number of levels to get their products or services to market. The simplified Gap-model suggests that between each tier-level there is a gap between proposed value proposition and perceived value proposition, resulting in a large gap between "Company A" and its end customers. These gaps are identified by comparing results from interviews with external and internal stakeholders, where the main objective is to find ways to minimise or ultimately eliminate the gaps.

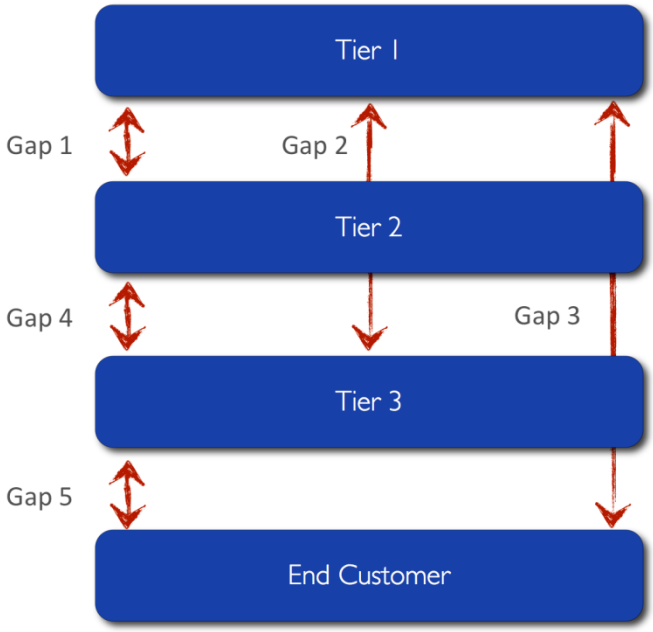

Figure 9 Gap analysis implemented in a high-tech business model

3.2.6 Business model SWOT analysis

The last step in evaluating a company's current business model is through a SWOT analysis. It measures the internal and external positive and negative sides of the business model (Besanko, Dranove, Shanley, & Schaefer, 2007, p. 312). This will be done by following a checklist for assessing each of the business model´s nine building blocks in detail, describing the strengths, weaknesses, opportunities and threats. The SWOT-analysis is based on all the prior evaluation methods when giving each building block a combined score for strengths and weaknesses (between -5 to +5), but an individual score for opportunities (0 to +5) and threats (0 to -5). It is graphically shown in figure 10. The full version of the checklist and SWOT analysis may be found in Appendix A.

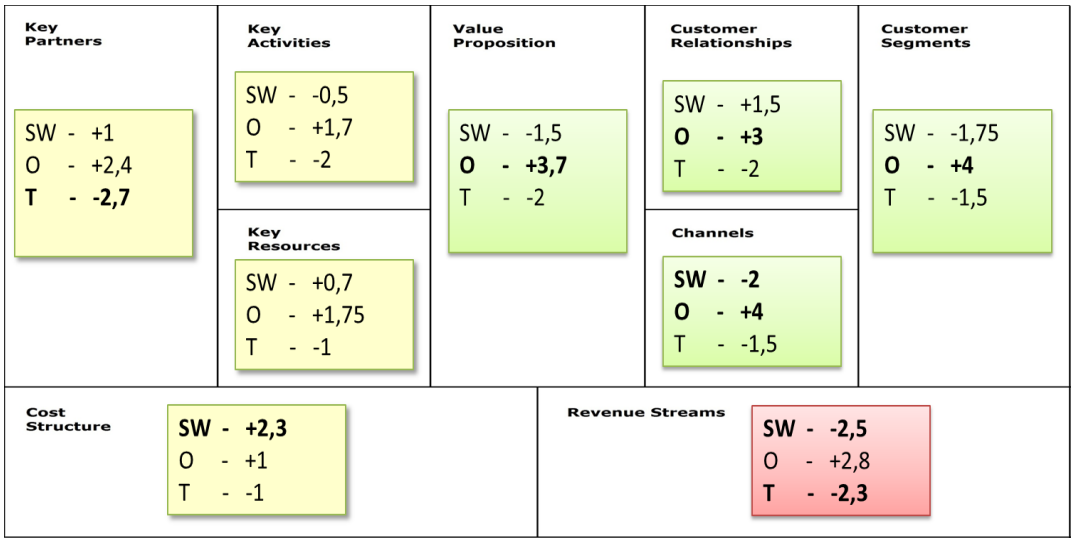

Figure 10 SWOT analysis implemented in Business Model Canvas

3.3 Workshop

In order to find in-house competence and ideas for improvement it was decided that a workshop would be a good way of obtaining that type of information and knowledge. It is also a good way of making employees co-creators of the business model and to create awareness of the problems and encourage discussions. The authors also saw this as an opportunity to teach about new ways of structuring and elaborating with business models at the host company.

3.3.1 Workshop team

When assembling the workshop team, the focus was to put together a team that was as diverse as possible. It is presumed by the authors that a diverse team will benefit from more diverse ideas than a more homogeneous team. By grouping persons with different backgrounds and experience together it is the authors' belief that the participants of the workshop are more likely to think outside of their everyday routines and commonly held perceptions.

An "objectives-list" was therefore prepared to make sure that the overall goal for diversity was met. The list contained the following:
Participants should consist of people...

- ...in different age groups
- ...of different sex
- ...in different business units
- ...with different customer knowledge
- ...in different professional level
- …with different knowledge of the current business model

(Osterwalder, 2010, pp. 142-143)

3.3.4 Workshop models

During a workshop a number of different models and exercises may be used to encourage creativeness and innovation, as well as to create a workshop framework (Townsend, 2003). These model, exercises and frameworks play a significant part in the workshop as they determine the quality of the outcome of the workshop and if the results from it are utilized and implemented.

3.3.4.1 The Silly Cow Exercise

A simple model called “the silly cow exercise” is used. The participants use their imagination to set up characteristics of a cow. Thereafter each participant comes up with an idea on how to use the characteristics of the cow to make a profitable business model. The purpose of the exercise is to boost the creative side of the brain and to act as an “ice-breaker”. (Osterwalder, 2010, p. 145)

3.3.4.2 The Empathy Map

The second model used is the Empathy Map (Osterwalder, 2010, pp. 130-133). The purpose of the Empathy Map is to create a customer profiling by defining the impressions that a certain customer might experience. It is used to understand environment, behaviour, concerns and aspirations of the customer. Figure 11 is printed in A1-A2 size. The workshop participants try to answer the questions described below by writing their ideas on post-it notes and then putting them up on the poster in the relating field.

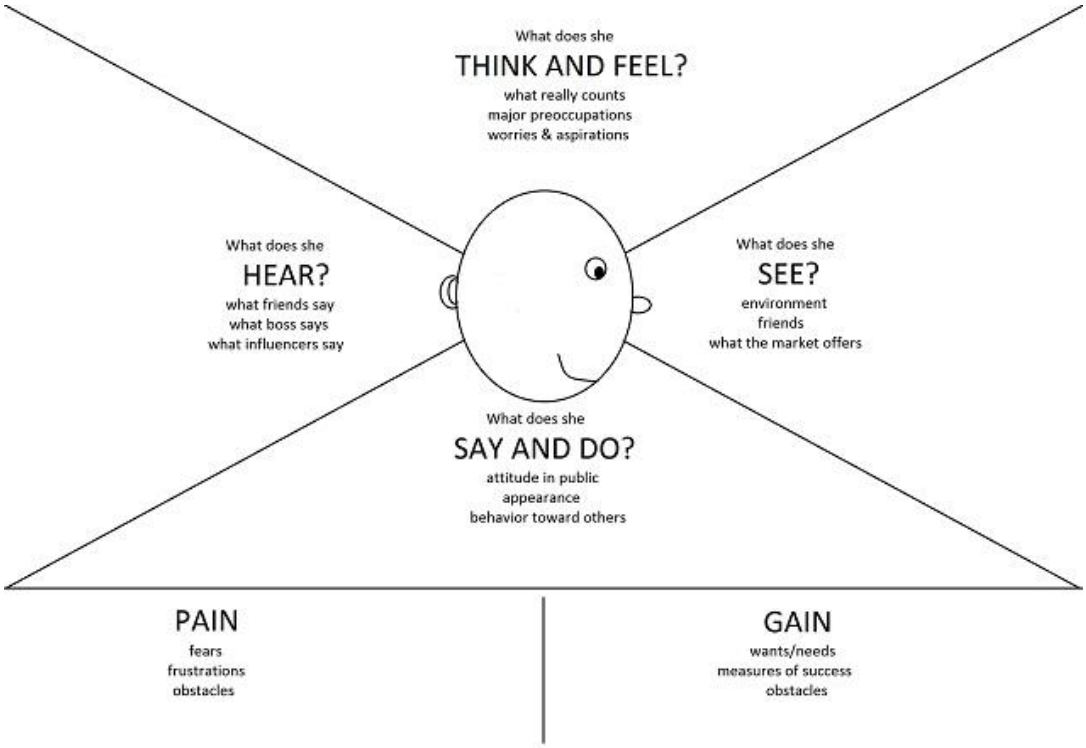

Figure 11 Example drawing of the Empathy Map

- What does she see?
  Describe what the customer sees in her environment.

  - What does it look like?
  - Who surrounds her?
  - Who are her friends?
  - What types of offers is she exposed to daily?
  - What problems does she encounter?

- What does she hear?
  Describe how the environment influences the customer.

  - What do her friends say? Her spouse?

- Who really influences her, and how?

- What does she really think and feel?
  Try to sketch out what goes on in the customer's mind.

  - What is really important to her?
  - Imagine her emotions. What moves her?
  - What might keep her up at night?
  - Try describing her dreams and inspirations

- What does she say and do?
  Imagine what the customer might say, or how she might behave in public.

  - What is her attitude?
  - What could she be telling others?
  - Pay particular attention to potential conflicts between what a customer might say and what she truly thinks.

- What is the customer´s pain?

  - What are her biggest frustrations?
  - What obstacles stand between her and what she wants or need to achieve?
  - Which risks might she fear taking?

- What is the customer´s gain?

  - What does she truly want or need to achieve?
  - How does she measure success?
  - Think of some strategies she might use to achieve her goals

3.3.4.3 Business Model Canvas

The Business Model Canvas is described in chapter 3.2.1.

3.4 Generation of business model

The generation of a new and improved business model is based on three steps that are closely connected to the evaluation chapter, Blue Ocean Strategies, Prototyping and Financial viability. The key conclusions from the evaluation theories should be used as input data in the following theories.

3.4.1 Blue Ocean Strategies

Blue Ocean Strategy is a method for questioning the value proposition and business models targeting new customer segments (Kim & Mauborgne, 2005). The Blue Ocean Strategy is about creating completely new industries through differentiation. As opposed to make small changes in the current business model, one should create a new uncontested market space. It means increasing the value for customers by creating new benefits and services. It is based on four key questions:

- Which of the factors that the industry takes for granted can be eliminated?
- Which factors should be reduced well below the industry standard?
- Which factors should be raised well above the industry standard?
- Which factors should be created that the industry has never offered?

The authors have chosen to show this graphically in a two by two matrix. In addition the blue ocean strategy can be used in cooperation with the Business Model Canvas, where Eliminate and Reduce aims to lower costs, while Raise and Create aims to increase the value.

Table 4 Blue Ocean Strategy matrix

Eliminate	Reduce
Raise	**Create**

3.4.2 Prototyping

The prototyping phase is where all the key evaluation conclusions are summarised to improve the business model. A prototype of a strategy or, in this case a system, is created to be used for communication, alignment, and living requirement specifications to provide clarity and transparency during the production of the end design (Holloway, 2009). When creating a prototype of a business model the following should be considered:

- Key conclusions from market analysis (examples: most valuable segments, trends, channels)
- Key conclusions from evaluation phase (examples: strengths, weaknesses,)
- Key conclusions from workshop (examples: most prominent ideas)
- Conclusions from Blue Ocean Strategy

3.4.3 Financial viability and cash flow analysis

The financial viability will be evaluated by performing a cash flow analysis which covers the projected revenues, the cost of goods sold (COGS), and the overhead cost incurred by the new business model. The projected cash flows are then discounted into present value using the method of net present value proposed by Damodaran and Aswath (Damodaran & Aswath, 1996).

4 Analysis

In this chapter an analysis of data obtained is conducted to produce the desired objectives, in which the basis for the BMEG system is conceived. This is presented along with the process of development of said system and the refinement of it. As part of the development process, the model is implemented in a case study.

4.1 Framework and delimitation

The focus of the analysis and its desired result is to produce the objectives stated in chapter 1.5. The authors have thus developed a framework to which the analysis have been applied and which will form the basis for reaching these objectives. The objectives may be transformed into the following statement and questions:

With the objective of evaluating an existing business model and generating a new and improved business model:

- How should a system for business model evaluation and generation be structured and which areas does it need to cover?
- How can this model be implemented to create value to the host company?

The analysis is performed with the purpose to produce answers to these questions and they are considered to be the delimitation of the analysis. The framework of the analysis is set by the authors to contain an evaluation of the areas needed to be examined to be able to evaluate a business model and its structure. The framework continues with methods to generate a new model and the process of refining the model to reach a state where it can be implemented by a company.

4.2 Framework for development of the BMEG system

A business model is according to Ballon et al "a description of how a company or a set of companies intends to create and capture value with a product or service. A business model defines the architecture of the product or service, the roles and relations of the company, its customers, partners and suppliers, and the physical, virtual and financial flows between them" (Ballon, Kern, Poel, Tee, & Munck, 2005).

As such a multitude of aspects of the architecture of a business model must be considered to be able to evaluate it in a holistic and meaningful way and even more so to generate an improved version of it. Ballon et al proposes a framework of five steps to evaluate a business model which is presented in table 4.

Table 5 Framework for evaluating business models (Poel, Renda, & Ballon, 2007)

Steps	Activities	Sources	Results
1. Objectives and scope	Decide on objectives of the study, scope (which services, markets, innovations, policy domains), case study selection	Discussion with client, plus desk research (e.g. for case selection)	Study implementation plan
2. Business models	For each case: analyse the design of business models: value proposition, value network, functional architecture, financial model	Desk research, to be validated in interviews with representatives of the cases/organisations	Business model descriptions
3. Market developments	Aggregate business model analysis (cases) to the level of market developments	Desk research, across all cases, to be confronted with existing studies	Overview of market developments
4. Innovation topics	Aggregate business model analysis (cases) to the level of innovation topics	Desk research, across all cases, to be confronted with existing studies	List of innovation topics
5. Bottlenecks	Identify, position and explore perceived bottlenecks in the business model framework: what and where are the bottlenecks?	Interviews with representatives of the cases/organisations	Overview of bottlenecks and how they are linked to the business model

The framework presented by Ballon et al provides a systematic approach to evaluate business models and is together with the areas of a business model proposed by Osterwalder used as a basis for analysis and built upon by the authors.

When approaching the development of the system the authors considered the primary use of the system should be to enable a dynamic, multi-domain and multi-stakeholder approach, focusing on identifying and possibly remedying bottlenecks and systemic failures of a current business model (Poel, Renda, & Ballon, 2007, p. 88). From this a decision is made on which business areas of interest should be analysed, as well as the most appropriate structure of the BMEG system.

4.2.1 Areas of interest

From the framework presented in table 4 and the definition of a business model as proposed by Timmers and Osterwalder (chapter 1.2) the areas of interest to consider when evaluating and generating business models are identified. These areas constitute the basis for the process of developing the BMEG system.

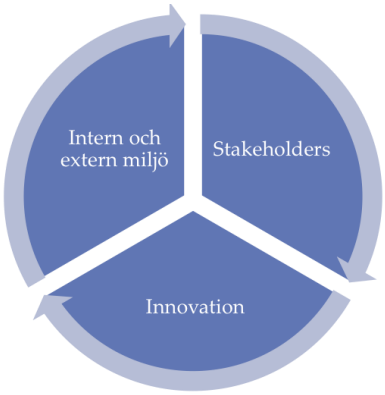

Figure 12 Areas of interest

4.2.1.1 Environment internally and externally

When evaluating an existing business model the authors propose investigating the internal environment of the business model, i.e. the company, as well as the external environment, i.e. the market. It is proposed by the authors that harmony in both of these environments is a requisite for a business model to be successful.

By looking at the internal environment of the business model core issues of the model may quickly become apparent, such as frictions between those responsible for the business at the company or mismatch in delivery of the business model as proposed by theory and what is actually carried out in practice. If issues present in the internal environment is not addressed, the chances for the business model to be successful quickly diminishes.

To determine the feasibility of the business model an investigation of its external environment, i.e. market, is a necessity. This includes researching the factors constituting the market targeted by the business model, such as consumers, competitors and market trends. This provides information and feedback such as the business models suitability in the market and how it compares to competitors business models.

4.2.1.2 Stakeholders

In every business model an important factor to consider are the stakeholders present in the business model. Stakeholders are defined as “Any identifiable group or individual who can affect the achievement of an organisation’s objectives or who is affected by the achievement of an organisation’s objectives” (Freeman, 1983).

It is proposed that development of a successful business model is dependent on balancing demand and finding a ‘‘strategic fit’’ between the stakeholder groups involved (Poel, Renda, & Ballon, 2007, p. 88). The stakeholder factor is therefore a key area for both evaluating and generating a business model.

4.2.1.3 Innovation

Without innovation, the suggested system would only become of analysing character. In extension it would mean that it would not create any value to the company. Since the objective clearly states that a value must be delivered to the company, it is of highest importance that after analysing the company business model an innovation phase should be conducted to generate a new and improved business model.

Research has however shown that businesses face significant barriers when attempting business model experimentation or to innovate their current business model. These barriers and resistance to innovation often arise due to managers' impression of conflicts with the prevailing business model, or with the underlying configuration of assets that support that prevailing model (Chesbrough, 2010).

The innovation phase of the BMEG system should therefore be anchored at the company by involving company stakeholders, such as managers, in the innovation phase.

4.2.2 Structure of BMEG system

When trying to structure the system in an easily understandable way, the main focus was to use triangulation as a part of the analysing phase. It means that the business model is evaluated using a combination of different frameworks. It also suggests that if the same problem can be found using different ways of analysing, the probability and accuracy of the identification of the problem should increase.

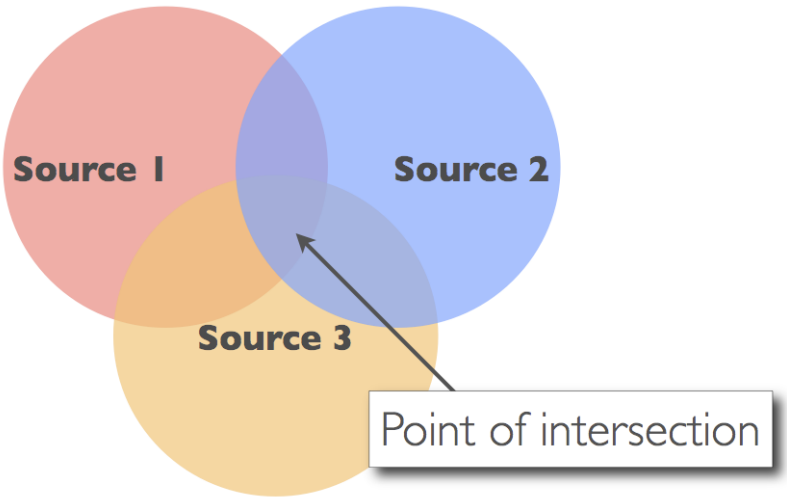

Figure 13 Method of triangulation

Considering that the host company suggested an initial market analysis, this was chosen as the first phase. The next phase was for all parties to understand and evaluate the current business model, using widely accepted frameworks. The third phase is to use innovation and in-house competence. For the third phase a workshop was agreed to be the best tool to reach the objective of innovation in an efficient way.

The BMEG system is therefore structured to contain phases for evaluating market data, evaluating the current business model and a workshop to engage and commit the host company. These are the three ways to identify and "surround" problems before generating new ideas.

4.3 Prototype system

In order to cover the suggested areas of interest and use the proposed structure, a first prototype of the "Business Model Evaluation and Generation"-system was conducted as follows:

1) **Know your market analysis**
2) **Business model evaluation**
3) **Workshop**
4) **Business model generation**

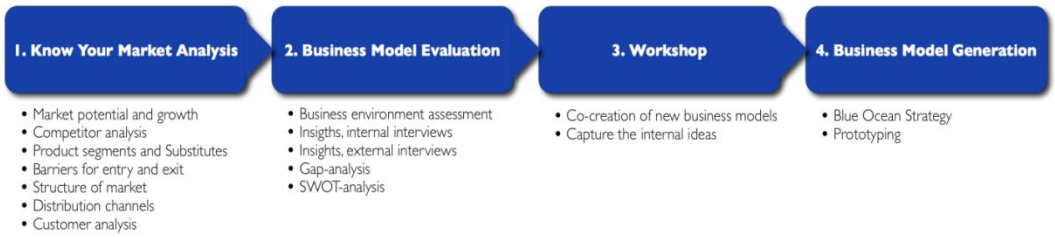

Figure 14 Prototype of the BMEG system

4.3.1 Know Your Market Analysis

The market analysis, named "Know Your Market" by the authors, was an initial request from the host company since they wished for the user of the BMEG-system to first of all

understand the company environment, the market trends, the competitors and the customers. The analysis consists of the following:

- Estimation of market potential and market growth.
- Competitor analysis and possible candidates for acquisition.
- Identify and analyse existing product segments and eventual product substitutes.
- Identify eventual barriers.
- Identify structure of market.
- Distribution channels.
- Customer analysis and verticals.

4.3.2 Business model evaluation

In order to set up a good framework for the evaluation step, the nine building blocks from Business Model Generation (Osterwalder, 2010) was considered a good basis for structure. The nine building blocks made it easy for all parts of the internal organisation to understand. In addition common frameworks and tools were used to get a wide base in the evaluation, covering both personal opinions from interview objects and facts from market figures and trends. The evaluation step consists of the following:

- Business environment evaluation
- Insights from internal interviews
- Insights from external interviews
- A Gap-analysis
- SWOT-analysis
- Tier-analysis

Theories for each of the frameworks can be found in chapter 3.2.

4.3.3 Workshop

As the BMEG-system also focus on innovation, the authors found that a workshop is a way to enable the organisation to take a part of the innovation phase of a business model transition. In addition, the in-house organisation is likely to hold many good ideas for areas of improvement. Therefore the workshop purpose is two-sided:

- Co-creation and acceptance from the organisation
- Find and capture in house ideas for improvement

4.3.4 Business model generation

When generating a new and improved business model the three prior steps are to be taken into account, acting as a triangulation of problems and findings. The key conclusions from prior steps are to be evaluated according to the Blue Ocean Strategy (Kim & Mauborgne, 2005). Thereafter the first prototype of the new business model is generated. Through iterative feedback and improvements from the host company, the finished business model is conceived.

4.4 Case study

Case studies are regarded as effective methods to understand the behaviour of organisations and the role of factors such as competition in dynamic and complex contexts (Poel, Renda, & Ballon, 2007, p. 89). A case study is therefore deemed to be an appropriate method to evaluate the prototype of the BMEG system by applying it at the host company.

Parts of the execution may be found in the separate part of the report called “BMEG - system – A Case Study”. As the case study performed at the host company involved classified information some sections are missing.

The execution and close cooperation with the host company lead to three suggestions for improvement and redesign:

i. The financial viability analysis of the new business model should be performed under the fourth step of the model.
ii. The investments needed for changing the model from the old version to the new version should be analysed and added as an additional step after the generation phase.
iii. A clear implementation plan, prioritising the importance and defining the timeline of each suggested change should be the final phase of the system.

4.5 Redesign of system

By performing a case study of the business model for the host company's product and service valuable feedback and insight concerning short comings and errors of the BMEG system was obtained. Feedback from the case study and Host Company indicated that the BMEG system in its current form was lacking in evaluation and recommendation of investments needed to implement the generated business model. A recommendation and plan for how the generated business model should be implemented was also identified as missing from the current BMEG system.

The input from the performed case study was taken into consideration and consequently the final BMEG-system was changed into the following six steps:

1) **Know your market analysis**
2) **Business model evaluation**
3) **Workshop**
4) **Business model generation**
5) **Investments needed**
6) **Implementation plan**

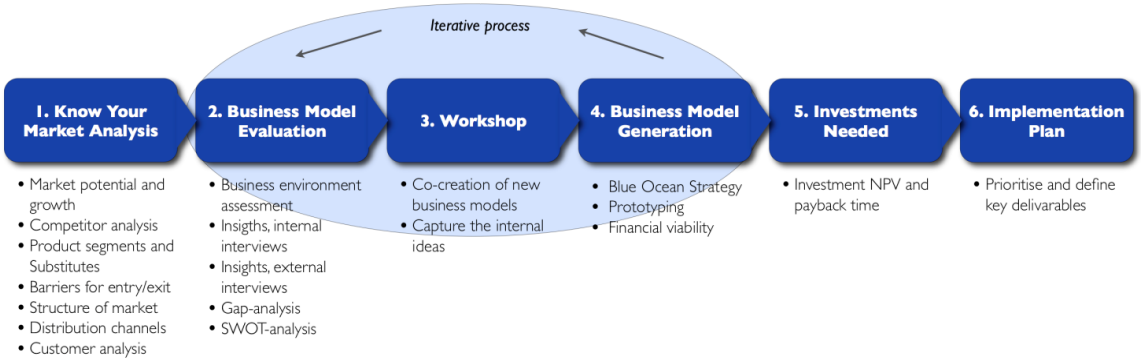

Figure 15 End design of the BMEG system

5 Result - Business Model Evaluation and Generation System

In the following chapter the result of this master thesis will be presented, a new tool for evaluating and generating improved business models. The new tool consists of six steps, beginning in a thorough market analysis and ending in an implementation plan to execute the new changes. Hereby follows a description of how to use the six steps in order to understand, evaluate, and generate a business model.

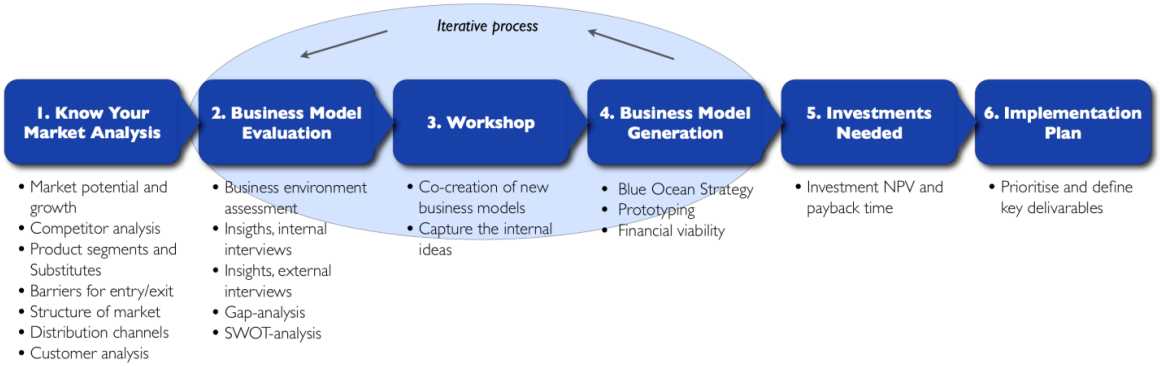

Figure 16 End design of the BMEG system

5.1 Know Your Market

The first step, "Know your market", is a natural step in understanding a business and it´s driving forces. In addition the host company for this thesis also addressed the fact that a thorough market analysis needed to be performed before any analysing of a company could begin. The Know Your Market Analysis is divided into six sub-analysis based on underlying marketing theories.

a. Market potential and growth

The first step is to determine how the overall market is performing in terms of total sales, sales in different segments and sales in different countries and regions. One

should also investigate whether the market has been growing, declining or been constant over a set period of time.

The first priority when gathering this type of information is to use market research from firms specialising in this as they often have a long history of following and researching the relevant market.

If there are no firms specialising in the company´s specific market, the authors suggest that one should investigate the market using the 80/20 rule. This imply defining the actors that currently holds 80 per cent of the market share and evaluate them using the earlier mentioned premises.

The second step is to use the product life cycle (Chapter 3.1.2) to determine if the market is in an introduction- , growth-, maturity- or declining phase, as this has a large impact in what strategies to use when approaching the market.

The last step to be performed is to investigate if the product or service shows signs of seasonality or cyclical behaviour, preferably done by comparing the company sales figures over a number of years.

b. Competitor analysis

Companies selling products often use tier models to reach their market, which is why it is in some cases interesting to look at competition in more than one tier. The competition among for example production tier might have strong impact on sales within reseller tier. Therefore step one is to identify if one should investigate the competition in more than one tier.

After the tier analysis has been conducted, an attempt to map the number of competitors and to describe their strengths, weaknesses, positioning strategies, products advantages and disadvantages, and pricing strategy should be made.

In addition, depending on the seniority and access to capital of the company under investigation, it could be an alternative to look for possible candidates for acquisition or partnerships in order to complement the business model. Theories used can be found in

chapter 3.1.4 and aims to find synergies, access to new markets, ways to pre-empt competition and to diversify holdings.

c. Analysis of market barriers

When analysing the market barriers the base is taken from a five forces analysis (Chapter 3.1.5) and broken down into eight defining questions, easily visualised in a spider diagram, see fictional example in figure 17. Again, it could be interesting to know the barriers of more than one tier in order to evaluate if the company should move their position in the value chain.

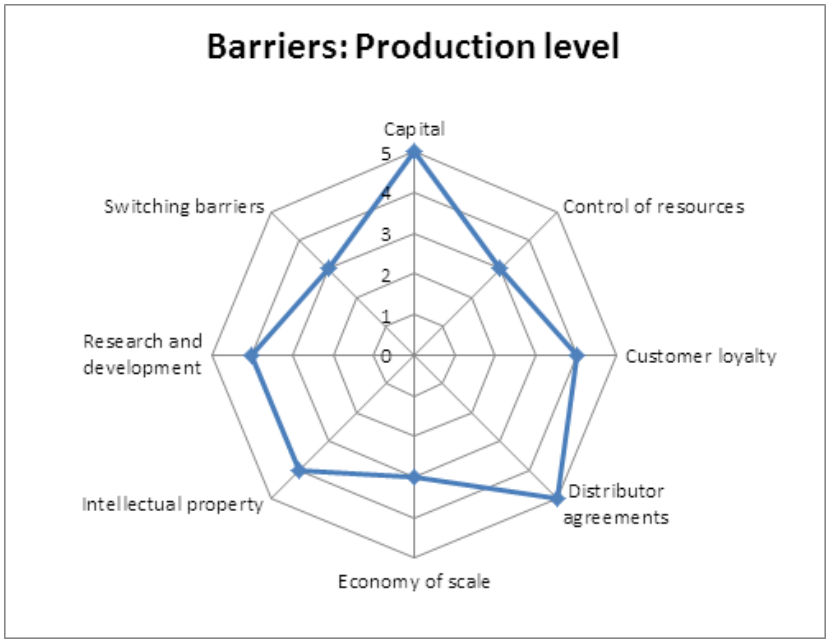

Figure 17 Example of a barrier analysis presented in a spider diagram

d. Market structure

The market structure is shown by mapping actors in the different tiers and how their products and services are tied together. This is done by drawing a map showing:

1) Actors in tier 1

2) Actors in tier 2

3) Draw lines showing how the actors are connected with products and services. If the examined company´s business model includes more than two tiers, these should also be included.

e. Customer verticals

The next step is to find out which customer verticals that is interesting for the specific market. This is done by performing a grid analysis providing key characteristics of products aimed for the market on rows while the different customer verticals, such as retail, education etc, is put on columns. Each characteristic is given a score from 0 to 5, 5 representing a good fit between product and customer vertical. The purpose is to more accurately target these verticals at a later stage.

In addition more detailed potential sales figures for each vertical should be identified at this stage.

f. Distribution channels

The last step of the Know Your Market Analysis is to identify the distribution channels and customer relation channels currently used by actors. It can be tracked through their sales channels and the product flows from producer to market.

5.2 Evaluate the present business model

The second stage of the model describes the evaluation of a business model and serves to find shortcomings and key success factors to use in later stages.

a. Establish clear understanding of current business model

By using the Business Model Canvas, one has a good checklist covering both the internal efficiency, represented by the left side in the model and value creation towards the clients, represented by the right side in the model. The nine building blocks constitute efficient and simple method to visually present the current business model. Please see chapter 3.2.1 for a clear description of what goes into each building block.

b. Business environment

When the current business model is clearly understood the first part of the evaluating section is to understand how it stands against the most important trends in its business environment:

> **Key trends** – Investigated by using the concept of the parts in the PESTEL-analysis which covers the technology trends, the regulatory trends, the societal and cultural trends and the socioeconomic trends.
>
> **Industry forces** – Investigated by using Porter´s Five Forces analysis, which may be found in chapter 3.2.2.
>
> **Market forces** – The market forces are identified through trend analysis performed in regards to market segments, needs and demands, market issues, switching costs and revenue attractiveness.
>
> **Macroeconomic forces** – The macroeconomic forces are identified by investigating key macroeconomic trends in global market conditions, capital markets, commodities and other resources and economic infrastructure.

c. Internal interviews

Managers and other stakeholders continuously working with executing the business model and its operations often have many ideas on how to improve upon it and make it more efficient. Therefore, the next step is to perform internal interviews, using the Business Model Canvas as basis. The interviews are performed by going through the same nine building blocks in all interviews conducted. The employees' perception of the product offering may to a substantial degree be different, which is why it is interesting to interview people with different positions and relation to the product or service. The overall purpose is to understand how the internal environment views the business model and its products or services.

d. External interviews

The purpose of the external interviews is two-headed. First, they should help evaluate the value proposition and determine if it presently is capturing the needs that are considered valuable by the customers. Secondly, the interviews should focus on what type of customer relationships and channels the customer wishes, require or could do without. Note that there are often customers and stakeholders in different tiers of the business model.

e. Gap analysis

When a clear understanding of the business model have been achieved by using the Business Model Canvas and internal interviews and external interviews have given insight of the customers impressions and needs, the next phase is a Gap analysis (Parasuraman, Zeithaml, & Berry, 1985). The Gap analysis is especially helpful in multiple-tier-business models, where the difference between proposed value and perceived value can differ significantly between tiers. The proposed value proposition for each tier is compared against the value proposition as perceived by customers and the difference between them is identified as a gap. Even if there are only small gaps between two tiers, a multiple-tier-model can result in a large gap between upper tier and lower end tier. The purpose in identifying these gaps is to minimise, or preferably eliminate them in the following iterations of the business model.

f. Business model SWOT analysis

The next step is to perform a SWOT analysis (Besanko, Dranove, Shanley, & Schaefer, 2007, p. 312), evaluating the business model's strengths, weaknesses, opportunities and threats. This thesis will use a standard frame of questions applicable on a large variety of businesses which may be found in Appendix A. The addition to the model in this thesis is a scoring system based on values from minus 5 to 0 if the proposal is considered a weakness and a scoring from 0 to 5 if it is considered to be strength. It means that opportunities can only be scored positively, 0 to 5, while threats can only be scored negatively 0 to minus 5. Further explanation may be found in chapter 3.2.6.

5.3 Perform a workshop

The third step of the BMEG system consists of a workshop. Again, it rests on the presumption that the organisation holds a lot of in-house competence and ideas for improvements. The workshop should focus on putting a group of employees from all parts of the organisation together in a creative environment that focuses on finding/generating those ideas and to structure them. The overall goal is to generate a lot of ideas, not to synthesize them. The authors recommend a minimum time of 3 hours to perform the workshop.

a. Preparations

To be able to efficiently execute the workshop a number of preparations will be necessary.

Begin with choosing the team that should participate focusing on the goal, described in chapter 3.3.1, of assembling a team as diverse as possible with the following objectives: Participants should consist of people...

- ...in different age groups
- ...of different sex
- ...in different levels
- ...in different business units
- ...with different customer knowledge
- ...in different professional level

After assembling the team and deciding a time and place for the workshop, a workshop manual containing a description of each model that are to be used should be sent to each participant. It is beneficial if also clear examples of filled in models with examples from well-known companies are a part of this manual. Make sure to also include a schedule estimating the time spent on each exercise.

Lastly, one should prepare a (limited) number of customer profiles, based on prior conclusions on which the most interesting verticals are. They will later serve as input data for the models. Make sure to describe the customer in detail, such as age, position, marital status, it will help workshop participants to embrace the thoughts of the customer profile in the exercises.

b. Execution

1) The execution starts with a short introduction describing the goal for the day, which models are to be used and by going through the schedule.

2) A short description of "the Silly Cow Exercise", found in chapter 3.3.4, after which the participants are given about 10 minutes to plot down their ideas. Thereafter a five minute presentation round is sure to have started the creative side of the brain and brought laughter to the crowd.

3) After a short introduction of "the Empathy Map" (Chapter 3.3.4), the participants are introduced to the prepared customer profiles and chooses one they find interesting. A large poster of the empathy map is already placed on each workshop table, and the participants plot their ideas on post-it notes that are put on the poster. Let participants plot ideas for about a half an hour at the time, then pause and let the different groups discuss between them.

4) A short introduction of the Business Model Canvas is conducted. The printed Empathy Map posters should be put on the wall close to the relating workshop table, as the customer profile described in it will be used at the customer segments building block on the Business Model Canvas. Get the workshop participants started once again and remind them that all ideas are of interest, and that the focus is on generating ideas for their customer profile. An example

of how the business model of Lund Institute of Technology has been applied to the Business Model Canvas may be seen in Appendix B.

Let the first session last about an hour and end it with discussion between the tables, where groups can also shortly present their findings, something that will also generate ideas in other groups. Depending on the time scheduled a number of shorter sessions of 30-45 minutes with an additional discussion should follow the first longer session.

5) Make sure to leave at least 30 minutes for a free end discussion between all the groups, where everyone can speak freely about interesting topics discussed in their group, their thoughts and their opinions. It should give some last good ideas to put in the notebook.

6) End the workshop with a short summary of the day and explain when participants can expect to see what came out of the workshop.

c. Conclusions

To draw conclusions from the Empathy map, a fishbone diagram has been used for structuring the thoughts and opinions. The four different worries of the customer profile represent “fish bones”, which all lead to the “head” which represents the pains and gains of the customer profile.

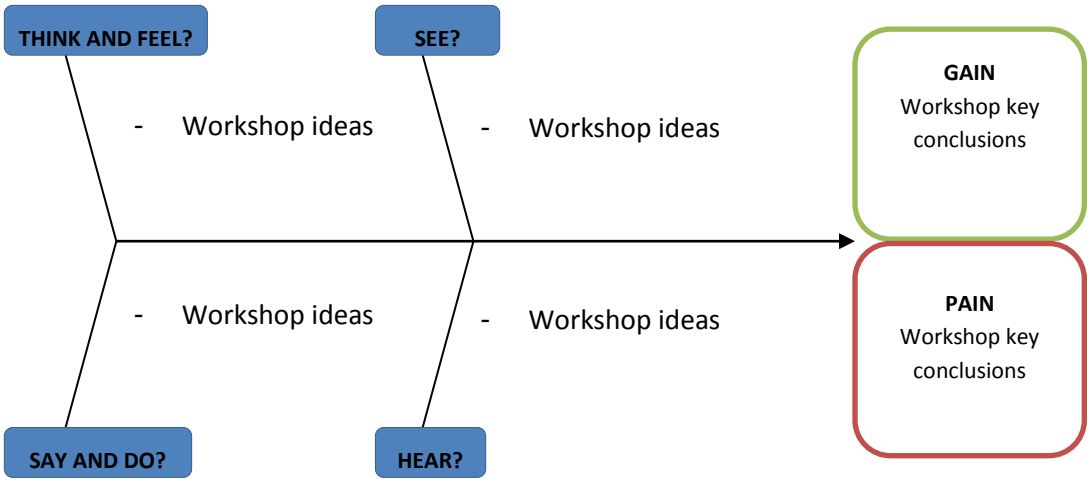

Figure 18 Fishbone diagram example

The Business Model Canvas, on the other hand, is already a good tool for structuring the ideas generated from the workshop, why the exact ideas given from the post-it notes during the workshop, is plotted into a the Business Model Canvas. It makes it easy to compare the outcomes from the different groups and compare it with the current company business model.

5.4 Generate a new and improved business model

The fourth step of the system is of the highest importance as it is the step where all the weaknesses, shortcomings and key success factors are used in order to improve the deliveries set up for the particular business model. This could be such deliveries as increased sales, better customer relationships and so on.

a. Blue Ocean Strategy

As the market analysis and evaluation together with the workshop has given areas for improvement, the first step is to use Blue Ocean Strategy, answering the following questions

- Which of the factors that the industry takes for granted can be eliminated?
- Which factors should be reduced well below the industry standard?
- Which factors should be raised well above the industry standard?

- Which factors should be created that the industry has never offered?

b. Prototyping

In the prototyping phase all prior conclusions drawn from the market analysis, the evaluation phase, the workshop and the Blue Ocean Strategy is processed to develop a prototype of an improved business model.

c. Financial viability

Many business models may at a glance seem like a sound idea, but to determine business model feasibility a comprehensive financial analysis, determining the models financial viability is recommended. The financial viability is determined by estimating the future sales, cost of goods and overhead costs and from these figures estimating the business models future cash flows. The financial viability should give a good indication of if and when the business model is expected to be profitable.

5.5 Estimate the investments needed

A new business model may lead to a need for new investments and capital. It is therefore recommended to evaluate if any investments are needed in order to be able to fulfil the new business model and the amount of capital needed. If investments are needed financial analysis should be conducted using methods such as pay back and net present value.

5.6 Implementation plan

The final step of the BMEG system is to develop an implementation plan for the generated business model. This is done by creating a priority list containing all actions needed to implement the business model and the estimated time needed for implementation. It is important to define which key deliverables indicate that an action of implementation has been reached and when the next action in the implementation plan may be initiated. A discussion with all involved should be conducted where it is agreed upon why each implementation action is prioritised in the suggested order.

Table 6 Example of an implementation plan

Timeline (Month)	Phase/Priority	Key deliverables
0 – 1	**1. Find new distributors**	**Signed contracts**
1 – 2	**2. Alter revenue model**	**Working concept**
…….	**……..**	**……..**

6 Discussion and Further Studies

Working in accordance to the described methodology has made the authors confident that the presented BMEG system can be considered both useful and trustworthy. But one should have in mind that when using the system approach and primarily qualitative data, the data is always subject to personal thoughts and interpretations, which may affect the objectivity of the study. The study and the resulting system try to avoid the objectivity problem through triangulation and it is the authors' belief that the objectivity problem as a result has been minimised. The BMEG system was to much satisfaction proven to meet the objectives as had been set up by the authors in collaboration with the Host Company.

Working in collaboration with the host company provided the authors with invaluable feedback and input to the development of the BMEG system. By having access to company representatives from different departments such as sale, support and development, input could be obtained to determine which areas should be considered necessities when evaluating a business model. Meetings with company supervisors and experts at the company enabled the authors to develop the BMEG system using an iterative process approach. When a prototype of the system had been produced it could be presented for the company supervisor who gave feedback and suggestions for improvement. This was then taken into consideration when developing the next prototype of the system. Not only did this assist in improving the quality of the system, but also made company representatives active participants in developing the system which improves the chances of the system being well received and accepted at the host company.

As mentioned the authors also chose to discuss problems and findings with an external supervisor, Gustaf Piper. It was primarily done to make sure that more than the host company´s perspective was considered when determining the structure of the BMEG system and what each part of the system should contain. Gustaf's extensive experience from business development related projects helped the authors to develop a generic system that may be used for a wide number of firms and types of organisations.

Even though the feedback from the host company has already been very positive, the authors choose to be humble, considering the fact that the changes need to be thoroughly implemented before the value can be seen in terms of increased sales. Therefore, more input data suggesting if actual value has been created could be added in the future and the iterative process of improving the BMEG-system thus continued. In addition more case studies should be performed in order to improve the accuracy of the analysis and the value creating parts of the system.

The authors consider themselves satisfied with the outcome of the thesis and the BMEG system as it was accepted by the Host Company and considered easy to follow and value creating.

6.1 Further Studies

As the authors chose to use a customer -driven business model evaluation and generation, since it was most appropriate when cooperating with the host company, the first step of the system is a market analysis. A market analysis was deemed necessary to evaluate potential in terms of customers and their needs. Data obtained from this step is continuously applied in later steps of the BMEG system and was thus an obvious choice as the first step of the system. Osterwalder however describes a number of different “epicentres” to start from, for example offer-driven, resource-driven or finance-driven. Choosing another epicentre might lead to the fact that another type of analysis should constitute the starting point in the BMEG system. The authors therefore suggest that more case studies starting at other epicentres of the Business Model Canvas in the generation phase could be done in order to generalise the BMEG system further.

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APPENDIX A – SWOT analysis questions

	+	-	
<u>Value Proposition Assessment</u>			
Value Propositions are well aligned with customer needs			Value Propositions and customer needs are misaligned
Value Propositions have strong network effects (When network effect is present, the value of a product or service increases as more people use it)			Value Propositions have no network effects
There are strong synergies between products and services			There are no synergies between products and services
Our customers are very satisfied			We have frequent complaints
<u>Value Proposition Threats</u>			
Are substitute products and services available? -5 = 40+ (# of substitute products and services) -4 = 30-39 -3 = 20-29 -2 = 10-19 -1 = 1-9 0 = None			
Are competitors threatening to offer better pricing or value? -5 = Yes			

-4 = Very likely -3 = Likely -2 = Not Likely -1 = Very unlikely 0 = No			
<u>Value Proposition Opportunities</u>			
Could we generate recurring revenues by converting products into services? 5 = Yes 4 = Very likely 3 = Likely 2 = Not Likely 1 = Very unlikely 0 = No			
Could we better integrate our products or services? 5 = Yes 4 = Very likely 3 = Likely 2 = Not Likely 1 = Very unlikely 0 = No			
Could we expand into other customer segments then presently offered to? 5 = Yes 4 = Very likely 3 = Likely 2 = Not Likely 1 = Very unlikely 0 = No			
<u>Revenue Assessment</u>			

We benefit from strong margins			Our margins are poor
We revenues are predictable			Our revenues are unpredictable
We have recurring Revenue Streams and frequent repeat purchases.			Our revenues are transactional with few repeat purchases
Our Revenue Streams are diversified			We depend on a single Revenue
Our Revenue Streams are sustainable			Our revenue sustainability is questionable
We collect revenues before we incur expenses			We incur high costs before we collect revenues
We charge for what customers are really willing to pay for			We fail to charge for things customers are willing to pay for
Our pricing mechanisms capture full willingness to pay			Our pricing mechanisms leave money on the table
<u>Revenue Threats</u>			
Are our margins threatened by competitors? By technology?			
Do we depend excessively on one or more Revenue Streams?			
Which Revenue Streams are likely to disappear in the future?			
<u>Revenue Opportunities</u>			
Can we replace one-time transaction revenues with recurring revenues?			
What other elements would customers be			

willing to pay for?			
Do we have cross-selling opportunities either internally or with partners?			
What other Revenue Streams could we add or create?			
Can we increase prices?			
Building block average score			
Cost Assessment			
Costs are predictable			Costs are unpredictable
Cost Structure is correctly matched to the business model			Cost Structure and business model are poorly matched
Operations are cost-efficient			Operations are cost-inefficient
We benefit from economies of scale			We enjoy no economies of scale
Cost Threats			
Which costs threaten to become unpredictable?			
Which costs threaten to grow more quickly than the revenues they support?			
Cost Opportunities			
Where can we reduce costs?			
Building block average score			
Key Resources Assessment			

Key Resources are difficult for competitors to replicate			Key Resources are easily replicated
Resource needs are predictable			Resource needs are unpredictable
We deploy Key Resources in the right amount at the right time			We have trouble deploying the right resource at the right time
Key Resources Threats			
Could we face disruption in the supply of certain resources?			
Is the quality of our resources threatened in any way?			
Key resources Opportunities			
Could we use less costly resources to achieve the same result?			
Which Key Resource could be better sourced from partners?			
Which Key Resources are under-exploited?			
Do we have unused intellectual property of value to others?			
Building block average score			
Key Activities Assessment			
We efficiently execute Key Activities			Key Activity execution is inefficient
Our Key Activities are difficult to copy			Our Key Activities are easily copied

Execution quality is high			Execution quality is low
Balance of in-house versus outsourced execution is ideal			We execute too many or too few activities ourselves
Key Activities Threats			
What Key Activities might be disrupted?			
Is the quality of our activities threatened in any way?			
Key Activities Opportunities			
Could we standardise some Key Activities?			
How could we improve efficiency in general?			
Would IT support boost efficiency?			
Building block average score			
Key Partners Assessment			
We are focused and work with partners when necessary			We are unfocused and fail to work sufficiently with partners
We enjoy good working relationships with Key Partners			Working relationships with Key Partners are conflict-ridden
Key Partners Threats			
Are we in danger of losing any partners?			
Might our partners collaborate with competitors?			

Are we too dependent on certain partners?			
Key Partners Opportunities			
Are there outsourcing opportunities?			
Could greater collaboration with partners help us focus on our core business?			
Are there cross-selling opportunities with partners?			
Could partner Channels help us better reach customers?			
Could partners complement our Value Proposition?			
Building block average score			
Customer Segments Assessment			
Customer churn rates are low			Customer churn rates are high
Customer base is well segmented			Customer base is unsegmented
Customer base is well segmented			Customer base is unsegmented
We are continuously acquiring new customers			We are failing to acquire new customers
Customer Segments Threats			
Could our market be saturated soon?			
Are competitors threatening our market share?			

How likely are customers to defect?			
How quickly will competition in our market intensify?			
<u>Customer Segments Opportunities</u>			
How can we benefit from a growing market?			
Could we serve new Customer Segments?			
Could we better serve our customers through finer segmentation?			
Building block average score			
<u>Channels Assessment</u>			
Our Channels are very efficient			Our Channels are inefficient
Our Channels are very effective			Our Channels are ineffective
Channel reach is strong among customers			Channel reach among prospects is weak
Customers can easily see our Channels			Prospects fail to notice our channels
Channels are strongly integrated			Channels are poorly integrated
Channels provide economies of scope			Channels provide no economies of scope
Channels are well matched to Customer Segments			Channels are poorly matched to Customer Segments

Channels Threats			
Do competitors threaten our Channels?			
Are our Channels in danger of becoming irrelevant to customers?			
Channels Opportunities			
How could we improve channel efficiency or effectiveness?			
Could we integrate our Channels better?			
Could we find new complementary partner Channels?			
Could we increase margins by directly serving customers?			
Could we better align Channels with Customer Segments?			
Building block average score			
Customer Relationship Assessment			
Strong Customer Relationships			Weak Customer Relationships
Relationship quality correctly matches customer Segments			Relationship quality is poorly matched to customer Segments
Relationships bind customers through high switching costs			Customers switching costs are low
Our brand is strong			Our brand is weak
Customer Relationship Threats			

Are any of our Customer Relationships in danger of deteriorating?			
<u>Customer Relationship Opportunities</u>			
Is there potential to improve customer follow-up?			
How could we tighten our relationships with customers?			
Could we improve personalisation?			
How could we increase switching costs?			
Have we identified and “fired” unprofitable customers?			
Do we need to automate some relationships?			
Building block average score			

APPENDIX B – Lund Institute of Technology applied to Business Model Canvas