CHALMERS

Comparing Effectuation and Customer Development in a real time startup case

Master of Science Thesis
in the Management and Economics of Innovation Programme

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Preface

This master's thesis is a part of the program of Management and Economics of Innovation at Chalmers University of Technology. The thesis investigates two entrepreneurial approaches that have been a part of the studies within the master's program.

We would like to thank our mentor, Sören Sjölander from Chalmers University of Technology, for giving us insight within the field of entrepreneurship. He provided us with great advise throughout the study and encouraged us to look for business ideas to pursue. We would also like to thank all of the professionals that we have been in contact with for sharing their knowledge. Likewise, all participants in our interviews deserve great thanks. Without them there would not be any stakeholder interactions, which were vital for this study.

Gothenburg, 2014
Nanna Stranne and Mai Thai

Abstract

Within the entrepreneurial field, researchers have tended to describe either the personality of the entrepreneur or the entrepreneurial activities. The fact that entrepreneurship can be taught is a relatively new angle within the entrepreneurial literature. In line with this have two teachable entrepreneurial approaches been widely spread and adopted among both academia and practitioners. The entrepreneurial approach of Customer Development was derived based on experiences. The aim was to help entrepreneurs step by step to develop a scalable business. At the same time, the Effectuation approach was developed through research, and with no direct connection with Customer Development. The Effectuation approach presents an entrepreneurial way of thinking and acting to reach the goal of new business and market creation. These two entrepreneurial approaches utilize different principles to reach the same end goal. Each have contributed and influenced the entrepreneurial field in their own way. What would the effect be if these two approaches were combined? We found no previous studies that have investigated the combination of the two approaches.

This study, with Effectuation and Customer Development in mind, performs and records a real time startup case, and later analyzes how the approaches were applied. Through content analysis, this study codes the activities in the startup case in order to explore how the approaches can be combined and complemented with additional activities.

Due to the extent of this study, the startup case only includes the first phase within Customer Development, the Customer Discovery phase. The result and the proposed startup approach therefore only includes suggestions for startups in earlier phases. The process presents a combination of principles within both the approaches and is complemented with additional activities used in the startup case. All principles within Customer Discovery are included, but only three within Effectuation. According to the results of this study, the principles could be performed simultaneously and complemented with technology analysis, as well as market research and regulation analysis.

Through the use of the proposed startup approach, we hope to help entrepreneurs better perform a startup case and to make the process more clear and efficient from the start. We also want to contribute our findings from this study to the existing entrepreneurial approaches.

Keywords: Entrepreneurial approaches, Customer Development, Effectuation, Startup case, Scalable business, Market creation, Entrepreneurship.

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1 Introduction

Effectuation and Customer Development are two well-known entrepreneurial approaches for creating new markets. Both approaches are teachable and describe how to develop new businesses from peoples' own means. They are widely spread and adopted among both academia and practitioners. Each of the approaches has the same end goal, but were derived from different foundations and established independently. However, there are no recent studies that try to relate them to each other. This study applies Effectuation and Customer Development in a real time startup case, and explores how they can be combined and complemented with additional activities.

1.1 Background

Within the entrepreneurial field, researchers have tended to describe either the personality of the entrepreneur or the entrepreneurial activities (Hsieh, Nickerson, & Zenger, 2007; Shane, 2000). The fact that entrepreneurship can be taught is a relatively new angle within the entrepreneurial literature (Sarasvathy & Venkataraman, 2010). The approaches of Effectuation and Customer Development were chose to be investigated in this study due to their teachable entrepreneurial methods and their different origins.

In the mid 90s Steve Blank, a serial entrepreneur, developed the Customer Development methodology based on own experiences (Blank, 2003). Customer Development describes how products and services can be improved through better customer understanding.

Meanwhile, in 1997 Saras Sarasvathy started an investigation of how entrepreneurs solve problems (Sarasvathy, 1998). Twenty-seven professional entrepreneurs were studied and a clear use of effectuation over causation was proven. Effectuation is about what one can achieve from his or her own resources. Causation occurs when the result of several actions is given, and to reach the result one should perform the needed actions (Sarasvathy, 2001). In 2001 Sarasvathy presented Effectuation as an approach. The Effectuation approach generally describes the entrepreneurial attitude and intention, and is an entrepreneurial way of thinking and acting to reach the goal of new business and market creation. The Customer Development approach on the other hand more clearly states step by step how to become an entrepreneur, and how to develop a business.

Both of the approaches are widely accepted and are used as general guidelines within many entrepreneurial schools. However, even if the Effectuation and Customer Development approaches are well used and studied, there are no previous studies that examine how they can be combined. The approaches are described very differently, but to some extent are based on the same perceptions. Therefore, it is relevant to perform and record a real time startup case influenced by both Effectuation and Customer Development.

1.2 Problem discussion

Since no clear investigation has been found on how Effectuation and Customer Development can be combined, there is no clear comparison between the approaches. The combination is interesting since the different approaches are based on different foundations, but still fulfill the same purpose. Effectuation is a research-based approach while Customer Development is experience-based.

There is also no record of how the principles of Effectuation or Customer Development have been implemented in startup cases. Therefore, recording the process of a startup while using Effectuation or Customer Development would be interesting. By applying both approaches in the same real time startup case, it is also interesting to discover what parts of the approaches that were not used. Additional activities used in the startup case that are not included in Effectuation and Customer Development approaches, should also be taken into consideration.

1.3 Purpose

The purpose of this study is to apply the approaches of Effectuation and Customer Development in a real time startup case, and analyze how they can be combined and complemented with additional activities.

1.3.1 Research questions

In order to present how Effectuation and Customer Development can be combined and complemented, the startup case in this study needs to be analyzed in three steps. The first step is to map out the principles of the approaches that are used in the case. Then, the activities that are not included in either Effectuation or Customer Development are considered. Lastly, the results of the first and second steps are then used to explore how the approaches can be combined and complemented with additional activities. These three steps resulted in the three research questions found below.

RQ1: What principles within Effectuation and Customer Development are performed?

RQ2: What additional activities are performed that are not found within the principles of Effectuation and Customer Development?

RQ3: How can the principles of Effectuation and Customer Development be combined and complemented with additional activities?

1.4 Limitations

The first limitation is the researches own prior knowledge during this study. Prior knowledge is a limitation since different opportunities are identified due to peoples' different prior information possessed (Shane & Venkataraman, 2000). Since people process information differently, people will obtain different information. Prior knowledge is explained as being related to opportunity recognition and exploitation, as well as the invention of a product or service provided (Shane, 2000).

It is further stated that the possessed information needs to be applicable to the new information in order for the entrepreneur to discover the opportunity (Shane & Venkataraman, 2000). Prior knowledge in this study is therefore a limitation.

The second limitation is due to the extent of this study, which is part of a master thesis. Since the startup case is performed in real time by the researches, it is understood that time will be a limitation. In particular, the startup case does not reach the phase of building a company, which is the goal of both Effectuation and Customer Development.

1.5 Disposition

The disposition of this study consists of the main chapters of introduction, theoretical framework, research method, empirical data, analysis, conclusion, and discussion. The empirical data is, however, more detailed since it includes the real time startup case. A disposition of the empirical data is therefore described in this section.

The empirical data is presented in chronological order according to when daily documentations, business models and several problem mappings were made. The business ideas and the activities are described as they were performed, in order to present the real time startup case in its actual form. The process will only present the resulted decisions. Hence, the verifying and testing process before making the decisions will not explain minor accomplishments thoroughly. To present a better overview, the empirical data is divided into the three business ideas and grand pivots, as well as subheadings grouped together with relevant areas throughout the chapter.

2 Theoretical framework

This chapter presents entrepreneurship as a teachable process, followed by the approaches of Effectuation and Customer Development.

2.1 Entrepreneurship as a teachable process

Entrepreneurial behavior and new venture creation was originally only observed and mapped. The entrepreneurial process eventually started to be described as processes or frameworks, with the goal to make entrepreneurship teachable.

Gartner (1985) was among the first to develop a model for new venture creation, not only including the characteristics of the entrepreneur, but the surrounding environment, the organization, and the related process (Gartner, 1985). The entrepreneurial process was further modeled as iterative and nonlinear by Bhave (1991), who also believes feedback is an important factor in new venture creation (Bhave, 1994). Furthermore, the role of networks for entrepreneurs has been widely discussed in entrepreneurial literature. There are different kinds of networks from which Dubini and Aldrich (1991) define two general types; personal networks in which individuals are connected to the entrepreneur, and extended networks that include organizations and groups. Networking is seen as an entrepreneurial activity (Dubini & Aldrich, 1991), and usually the main source of help for the entrepreneur (Birley, 1985). The network can also provide the entrepreneur with both support and credibility during the problem solving process of a startup company (Ostgaard & Birley, 1996).

Some recent research within the field has focused on how entrepreneurs act during the creation phase (Alvares & Barney, 2007), and how to describe the entrepreneurial process as a method, indicating that entrepreneurship is teachable (Sarasvathy & Venkataraman, 2010).

The approaches of Effectuation and Customer Development were chosen since they are both teachable and that they originated with no influences from each other. As mentioned in the background section, both have been widely adopted by entrepreneurs and entrepreneurial schools. The approaches explain their principles differently, making it interesting to combine them.

2.2 Effectuation

Sarasvathy (2001) explained effectuation and causation with a simple example of a situation where a dinner is being made. A causation process occurs when a recipe is followed strictly, and the ingredients are collected to create the wanted result, in this case the desired meal. In contrast, an effectuation process would occur if the dinner being created was made from what was available in the fridge (Sarasvathy, 2001).

2.2.1 Principles

The following five main principles describe the logic and characteristics of Effectuation (Sarasvathy & Dew, 2005). The descriptive names make the principles easier to apply.

The bird in hand principle

An entrepreneur or effectuator begins with three means; who they are, meaning their characteristics and abilities; what they know, in terms of knowledge and education; and whom they know, which refers to the social network and contacts (Sarasvathy, 2001). The bird in hand principle suggests that the entrepreneurial process is driven by these means, rather than being driven by goals (Sarasvathy, 2005). The entrepreneur then uses the resources that are available.

The affordable loss principle

The next principle, affordable loss, suggests that the effectuator stays within the limits of the given means (Sarasvathy & Dew, 2005). The long-term goal is then to create more options and possibilities instead of maximizing immediate returns (Sarasvathy, 2003). As for causal models, strategies are often chosen to maximize returns.

The crazy-quilt principle

Another important principle for the effectuator is to make commitments with stakeholders, and form strategic alliances (Sarasvathy & Dew, 2005). These alliances can be made with different interested stakeholders, and are valuable in helping to decrease uncertainties (Sarasvathy, 2001). Several stakeholders then form the entrepreneur's own patchwork or "crazy-quilt". It is important to notice that the involved stakeholders will affect the goals of the company. The opposite, a situation where no stakeholders are involved, is where the goals determine what stakeholders to invite (Sarasvathy & Dew, 2005).

The lemonade principle

The lemonade principle concerns the focus on creating opportunities out of unexpected contingencies. The entrepreneur must attend new and surprising opportunities rather than avoid them (Sarasvathy, 2003). In other words, if lemons are available, the entrepreneur surprises by making lemonade.

The pilot-in-plane principle

Instead of adapting entrepreneurship to trends and technology transformation, the pilot-in-plane principle suggests that the human actions form the future (Sarasvathy & Dew, 2008). Predictions about the future will not be useful, since the future is unpredictable (Sarasvathy, 2005). Instead, the entrepreneur controls the future by forming strategic alliances, and making decisions based on what is desired. The entrepreneur should be the pilot controlling the plane, instead of having the plane on autopilot.

2.2.2 The Effectuation process and new market creation

By using the principles described above, an effectuator strives to control the future instead of predicting it (Sarasvathy & Dew, 2008). This is partly done through stakeholders, since much of the future happenings can be created through commitments and cooperation. Hence, new markets can then be created. Sarasvathy and Dew (2005) demonstrates new market creation in Figure 1.

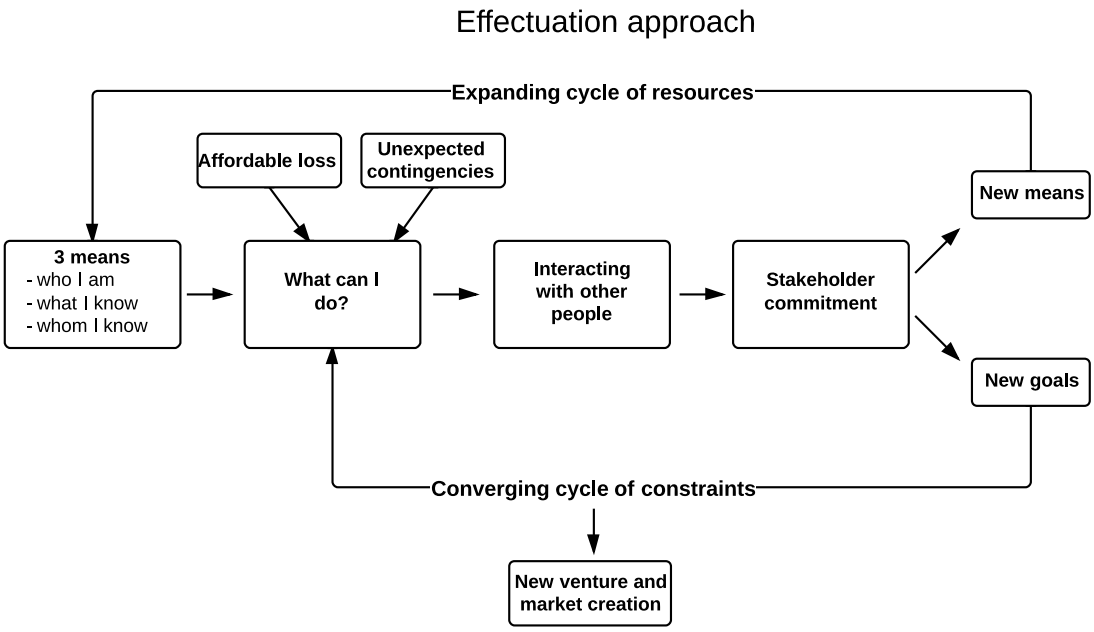

Figure 1 - New market creation through transformation (Sarasvathy & Dew, 2005).

The three means given in Figure 1 is the starting point for the Effectuation approach, which indicates that an entrepreneur does not necessarily have to start with an opportunity (Sarasvathy & Dew, 2005). The principles of affordable loss, crazy-quilt and making lemonade, then lead the way for the effectuator. Figure 1 further shows that the process is repeated, resulting in new commitments, means, and goals. The repetitions will eventually lead to new market creation, which is in line with the pilot-in-plane principle, where the future eventually is created rather than expected.

2.3 Customer Development

The Customer Development methodology is an entrepreneurial approach that focuses on customer interactions in order to develop more successful products (Blank & Dorf, 2012). The purpose is to understand customers and product development by getting outside of the building early, to where the facts are.

2.3.1 Principles

The Customer Development approach consists of four processes, which can be divided into a search and execution stage. The search stage should first be completed through the processes of Customer Discovery and Customer Validation, followed by the execution stage through Customer Creation and Company Building (See Figure 2).

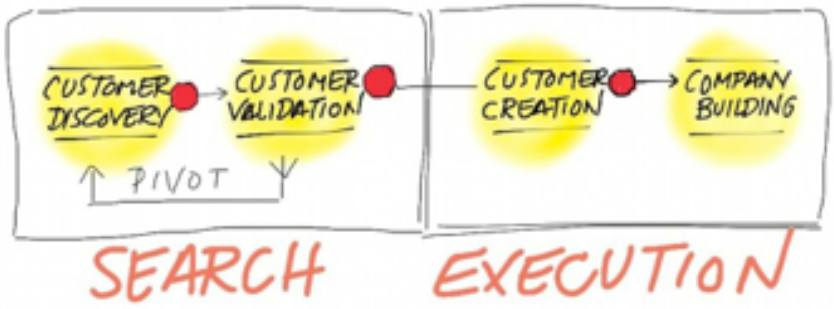

Figure 2 - Customer Development process (Blank & Dorf, 2012).

The Customer Discovery process is used to match customers and markets with products. In simplified words, to find a product-market fit. The definition of product-market fit is sometimes referred to as the problem-solution fit, which Blank & Dorf (2012) use interchangeably. The Customer Discovery process consists of four phases, which are hypotheses stating, problem testing, solution-testing, and verify or pivot (See Figure 3). When Customer Discovery is validated, the entrepreneur should enter the Customer Validation process. The Customer Validation process then aims to examine if the business model results are replicable and scalable. The business model must be capable of providing enough customers to create a profitable company. However, if the model does not fulfill this, a new Customer Discovery process needs to be conducted. The third and fourth processes of Customer Creation and Company Building aim to execute the business model from the previous steps in the search period. Customer Creation includes scaling the business by forming the customers' demand, and connecting it to relevant sales channels. The purpose of Company Building is to execute a confirmed model by turning the startup into a company.

2.3.2 Customer Discovery

The Customer Discovery process is described more thoroughly in this section, since it is the only process being performed in this study. The four phases of Customer Discovery are presented in Figure 3 in the order they should be executed.

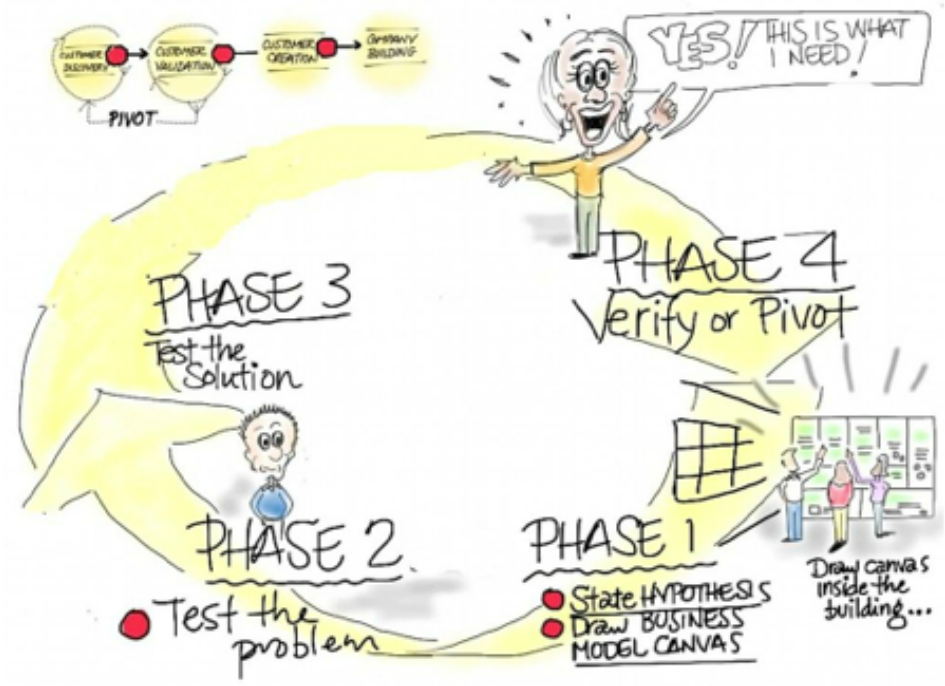

Figure 3 - Customer discovery phase (Blank & Dorf, 2012).

State hypotheses

The first phase starts with stating the hypotheses based on a vision defined by the founders. The vision is explained through the nine building blocks of the business model canvas (BMC), which is presented later in this section. The founders then decide what needs to be tested in order to answer the hypotheses in the canvas. Blank and Dorf (2012) also mention that sometimes it is required to conduct some research outside the building before knowing what to test or search for.

Test the problem

In the second phase, problems based on the hypotheses will be tested. This problem testing should help the founders understand the meaning of the problem and its effect. The life of a typical customer needs to be understood, such as their way of spending money, and solving problems or needs. By this, Blank & Dorf (2012) means that the purpose is to start behaving like the customer. After gaining customer understanding, the market should then be investigated. This should be done by conducting meetings with important influences in terms of businesses in related markets and industry specialists.

Almost all blocks in the BMC should be examined. Testing the problems will help the founders either approve or disapprove the hypotheses. If disapproved, new hypotheses should be created. The BMC should be updated after the hypotheses tests are conducted.

Test the solution

Phase three in the Customer Discovery process includes solution-testing, where the value propositions of the product or service are introduced. A minimum viable product (MVP) should be presented in order to see the end users' reactions. This phase aims to validate the problems that were tested in phase two. The product must be able to satisfy the needs of users by solving the problems claimed. It is also important to update the BMC regularly.

Verify or pivot

In phase four, the testing should be finished, and founders should be able to verify the following three statements. First, the problems, desires or needs of the customers should be correctly understood and met by the value propositions offered. In other words, a product-market fit should be verified. Second, a large enough customer segment and ways to reach them should be proven. Lastly, profitability should be possible through the revenue streams decided. After these have been verified, the founders must decide if the product is ready to be sold, or if more information from customers is needed. The Customer Validation process should only be conducted when phase four of Customer Discovery process is completely understood.

The business model canvas

The BMC presented by Osterwalder and Pigneur (2010), provides a scorecard that can be used in the Customer Discovery process (See Figure 4). The scorecard describes nine building blocks that represent how a company can create and deliver value as well as capturing it (Osterwalder & Pigneur, 2010).

The blocks can be divided into an infrastructure section (key resources, key activities, and key partnerships), an offering section (value propositions, customer segments, channels, and customer relationship), and a finance section (revenue streams and cost structure). The scorecard should constantly be updated. Changes that are made should be highlighted in the BMC, and lead to constructing new canvases (Blank & Dorf, 2012). Hence, the canvases and highlighted changes could show the process of the business over time, and how the business plans to make a profit.

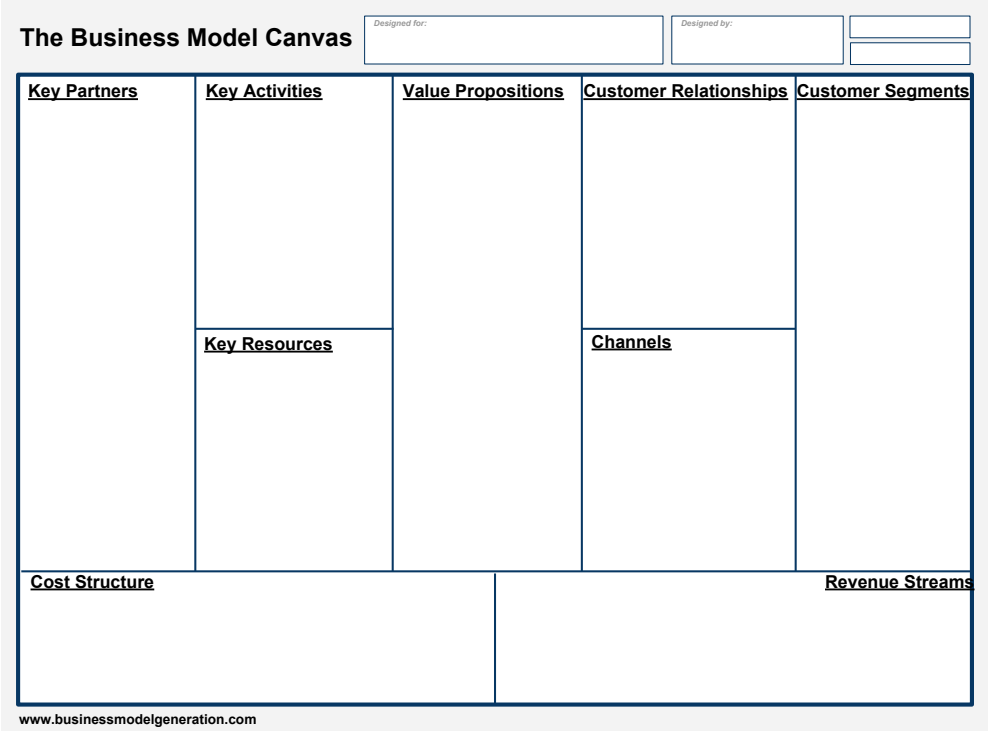

Figure 4 - Business model canvas (Osterwalder & Pigneur, 2010).

3 Research method

This chapter describes how the research was conducted for this study. Since the purpose is to analyze the approaches of Effectuation and Customer Development in a real time startup case, the following research type, research design, data collection methods, and data analysis methods were chosen.

3.1 Practice-oriented research

An empirical study was performed in order to analyze a startup case in relation to the approaches of Effectuation and Customer Development. It was also used to identify hypotheses. In order to investigate practical executions through the use of research knowledge, in terms of Effectuation and Customer Development, a practice-oriented research was the type of research conducted. A practice-oriented research can for example be applied in a case study, which aims to create knowledge of a certain enclosed system or situation (Bryman & Bell, 2011).

3.2 Case study

A case study was the research design chosen in order to carry out a real time startup case. When conducting a case study, a detailed description of the case is made in real time as well as an empirical investigation (Bryman & Bell, 2011). The documentations and detailed descriptions were useful for exploring and understanding different occasions, which later were related to the approaches of Effectuation and Customer Development. Our case study covers three business ideas that were investigated in chronological order.

A case study is characterized with high ecological and possibly high internal validity, but has lower external validity (Bryman & Bell, 2011). Ecological validity is possessed when the design of the study corresponds to real life, including the methods and materials used. Internal validity is reached when a study has minimal bias, and external validity occurs when a high generalization of the study is applied. It was believed that exploiting the real time startup case, and applying both Effectuation and Customer Development approaches, would lead to a high internal- and ecological validity. For this reason, a case study was chosen as the most relevant research design.

A case study prefers to have several data collection methods to avoid relying on only one source of information (Bryman & Bell, 2011), and was considered in this study.

3.3 Data collection methods

In order to perform a real time startup case, data was collected through interviews with different stakeholders, regulation boards, and other professionals. Network and secondary sources of information were also used. Complementary data that was needed to specify and analyze the startup case was collected through problem mappings and daily documentations. These daily documentations were also used to record the startup case.

3.3.1 Interviews

Interviews were conducted continuously, with potential customers and partners, as well as professionals. In a possible multisided market, both monetary and subsidy aspects were covered when needed. A multisided market works as a platform that connects two or more user segments, from which each of the segments benefits from the other's engagements. The monetary side in a multisided market is the side that is willing to pay for the benefits in the platform. The subsidy side is the side that adds value to the platform in the multisided market. Interviews were first briefly performed in different areas, age groups, and professions, in order to gain a broader market view. The interviews then included more in-depth conversations.

Customers

The customer interviews conducted were broad and general in the beginning followed by more in-depth interviews towards targeted customer segments. The interviews were divided into three different phases based on when they were conducted. The goal of the first phase was to investigate the need, and determine if the potential customers saw problems within the area. Could the current business idea provide solutions to any existing or future problems? It was very important to not present the possible solution, but only to talk and speculate around the subject.

In the second phase a MVP was presented. The discussions were now focused on the MVP, and thoughts around the application. Although the subject of conversation was defined, other thoughts that were off topic were considered to be essential as well.

The third phase of interviews focused on validation. The MVP was constantly being improved and tested on the different customer segments. The more the product improved, the more detailed the customer feedback became. Some interviewees in the first and second phase also participated in the third phase of interviews. This was performed to see how the improved product corresponded to the interviewee's problems and/or needs that were explained in the first or second interview phase. The arrangements of these follow up interviews were made between the interviewee and the interviewer after the first interview was conducted. The third phase of interviews was validated if a larger customer segment experienced the identified problem.

Professionals

Interviews were performed with relevant professionals such as scientists, doctors and executives, both within and outside our network. Practitioners of existing products or services were contacted as well as competitors and companies providing substitutes. This helped us gain insight on the industry and receive feedback on our startup ideas. However, the ideas were only discussed when appropriate. After having discussions with the regulation boards, the business ideas were developed according to the guidelines in the specific industry and Sweden. For example, the contact at, Finansinspektionen, FI (Swedish Financial Supervisory Authority), eventually became available for direct contact during the development for one of the business ideas called Lean Invest.

Partners
The interviews with potential cooperative partners and other information sources, such as different databases, were conducted in a later phase after the interviews with the customers. This process was not performed until the needs and benefits were established for the business ideas.

3.3.2 Network and secondary sources
Networking was proven to be very useful for finding information and facts not available through other sources. Many appreciated connections and inputs were gained and applied to the startup case. As for secondary sources, data was continuously collected through web searches, statistics, company reports, media, etc. The data from secondary sources was also compared, when applicable, to prior findings from qualitative methods, in order to validate the findings in the general segments.

3.3.3 Problem mapping and daily documentation
Before collecting any data, all potential problems that needed to be solved for the first business idea were listed and categorized into the building blocks of the BMC. This problem mapping assembly was then repeated twice for the second business idea, as well as in the beginning for the third business idea. The most important topics in the problem mappings are presented in the analysis found in Chapter 5. The four different problem mappings were put aside and not analyzed until the end of the startup case. However, the mappings were used as guidelines. At the end of the study the problem mappings were compared and analyzed with the problems experienced for each of the corresponding ideas. The aim of this process was to find differences in problem prioritization over time. For example, what problems should have been considered earlier and what problems were irrelevant.

Documentation of the startup case was recorded every day for four months. The process for the days was documented separately between the researchers, so that it would not be bias. The daily documentations were not analyzed until the end of the startup case, from which a content analysis was conducted.

3.4 Content analysis
Content analysis was the data analysis method performed in this study. This section describes the content analysis, as presented in the literature, and how it was performed in this study.

3.4.1 Content analysis
Content analysis is a technique to quantify content through predefined categories (Bryman & Bell, 2011). The process should be replicable and systematic. It is applicable to different kinds of media and unstructured data, making it a flexible technique, and one of the advantages of content analysis (Bryman & Bell, 2011).

Both Berelson (1952) and Holsti (1969) describe content analysis as being objective and systematic (Bryman & Bell, 2011). By predefining the assignment of new data into categories, objectivity is applied (Bryman & Bell, 2011). The researchers performing content analysis are considered only minimum bias.

Content analysis is systematic since it is a repetitive process, decreasing the chance of being bias once again (Bryman & Bell, 2011). Therefore by applying content analysis, different researches should be able to produce the same results for the content being analyzed, which is another advantage.

In content analysis it is important to define the research questions accurately, since it affects the choice of media that is analyzed as well as the coding scheme (Bryman & Bell, 2011). A coding scheme is an arrangement where all the data being coded is submitted. The research questions also determine what is counted in the coding schemes, for example, particular words, sentences or phrases.

Another advantage of content analysis is that the technique allows researches to produce information about certain aspects of the study that might be hard to define.

In this study, the content being analyzed was the daily documentations, before it was rewritten into the empirical data in chapter 4. The predefined categories were the principles within Effectuation and Customer Discovery. Research question one, *What principles of Effectuation and Customer Development are performed?,* established the already applied principles directly into categories in the coding scheme. Research question two, *What additional activities are performed that are not found within the principles of Effectuation and Customer Development?*, required the researches to find information concerning certain activities in the daily documentations that otherwise would go unnoticed. The additional categories for the coding scheme were defined during the analysis of the daily documentations. The most common categories were considered and are presented in the analysis found in chapter 5. Research question three, *How can the principles of Effectuation and Customer Development be combined and complemented with additional activities?*, required the coding scheme to be structured in a way to visualize the use of Effectuation, Customer Development, and additional activities in relation to each other. The coding scheme was used as a foundation to analyze what activities that were used in the startup case over time.

Instead of coding the daily documentation by particular words, sentences or phrases, it was coded by tasks performed, according to the predefined or additional categories. The majority of the tasks showed a clear connection to the category they belonged to. However, some principles such as making lemonade, pilot-in-plane and one of the means in bird in hand, were slightly difficult to relate. This was due to their extent being used and the phase of the startup case. The chance of producing the same result for different researches might therefore be affected, but only marginally.

4 Empirical data: The startup case

This chapter presents the startup case performed in this study. The process is explained in chronological order based on when the daily documentations, problem mappings, and business models were taken. The process will only present the resulted decisions. Hence, the verifying and testing process before making the decisions does not explain minor accomplishments thoroughly. The daily documentations can be found in Appendix II.

An overview of the work process can be found in Figure 5, where the development of the three major business ideas, Medical device, Health assistant application and Lean Invest, are presented and marked with different colors. The content in Figure 5 correlates with the headings in this chapter.

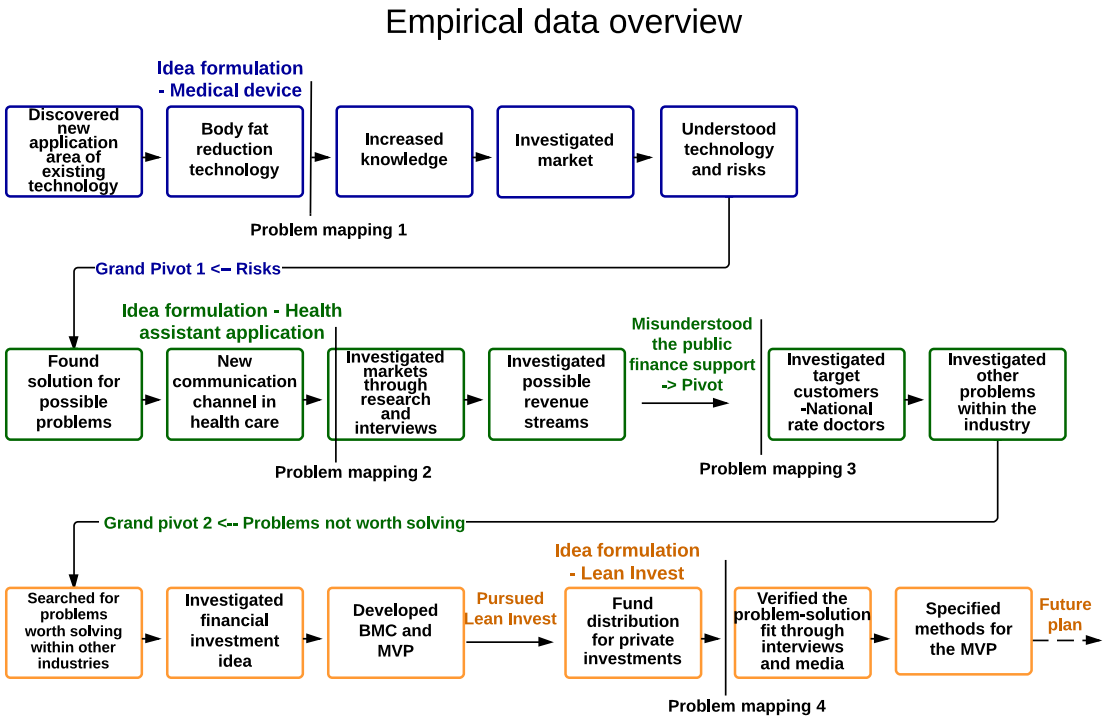

Figure 5 - Empirical overview of the startup case. The process of the Medical device idea is marked with blue, the Health assistant application idea with red and the Lean Invest idea with orange.

4.1 Discovered new application area for existing technology

The idea of the Medical device was discovered by coincidence. It was realized that research had recently developed an application for decreasing body fat through cooling. By keeping the body fat at a low temperature for a certain amount of time, up to 25 % of the fat cells will die. Clinics started adopting the technology and used licensed products from existing companies from the US or Spain. This technology was first read about in articles and on the Internet. The business idea of the Medical device was defined during courses concerning innovation and industrial transformation at Chalmers University of Technology. The area the current technology was being used seemed limited, since the technology appeared to be very simple. The treatment was also very expensive for the user. Therefore, a new simpler home product was proposed.

4.1.1 Medical device- Idea formulation

The plan for the Medical device was to create a portable version of the existing products. In order to make it affordable, the cooling function within the product would not include any electrical components. One proposal was to use ice blocks or stones, which the customer could put in the freezer before using it in the Medical device. Different layers of materials would prevent the product from reaching a temperature where skin damage could be a risk. According to previous research about Cryolipolysis® (Medical device used to destroys fat cells.), fat cells that are destroyed will not be rebuilt. However, fat could still be gained, but would mainly be added to other areas of the body, and not to the area that was treated.

The product could be used by anyone that wanted to decrease fat in specific body areas. The market was assumed to be big, due to all the existing substitutes and the demand for new safer alternatives. However, the main customer segment was targeted at healthy women that had tried to lose fat but did not succeed for particular areas of the body.

Since the technology had already been practiced and approved on the market, the regulation was expected to be less extensive for other new and similar products within the health industry. Therefore, the time to market was expected to be relatively quick.

Problem mapping 1 was created at this stage.

4.1.2 Increased knowledge and investigated market

A pre-study of the Medical device before entering the startup case was performed for several months. Medical articles about effects and risks were studied and other related facts and statistics were investigated via Internet. Some examples of the research conducted included the number of clinics in Sweden, the development of the technique, and the provider- and user diffusion. Patents were investigated, and the product specification of our product was considered. A meeting was conducted with a clinic that provided one of the existing body fat removal technologies through cooling. During the meeting the use of the device was demonstrated. The doctor showed results of the treatment on their own body by showing the difference of an area that was treated twice on their left side of their stomach in relation to the untreated area on their right side. The result showed a reduction of skin fat up to three centimeters. It was then decided to continue with the idea and investigate it further. The device at the clinic was validated.

The empirical data will now explain the startup case realized after the pre-study.

Other meetings with clinics

In order to discover more possibilities for the idea, market research was conducted, and doctors that perform one of the existing body fat removal technologies through cooling at their clinic were contacted. The meetings verified the technologies' customer segment; overweight people with subcutaneous fat that is found directly under the skin. Visceral fat inside the organs cannot be removed with this technology, since the body fat needs to be isolated in order to be cooled down. Figure 6 presents the BMC at current stage.

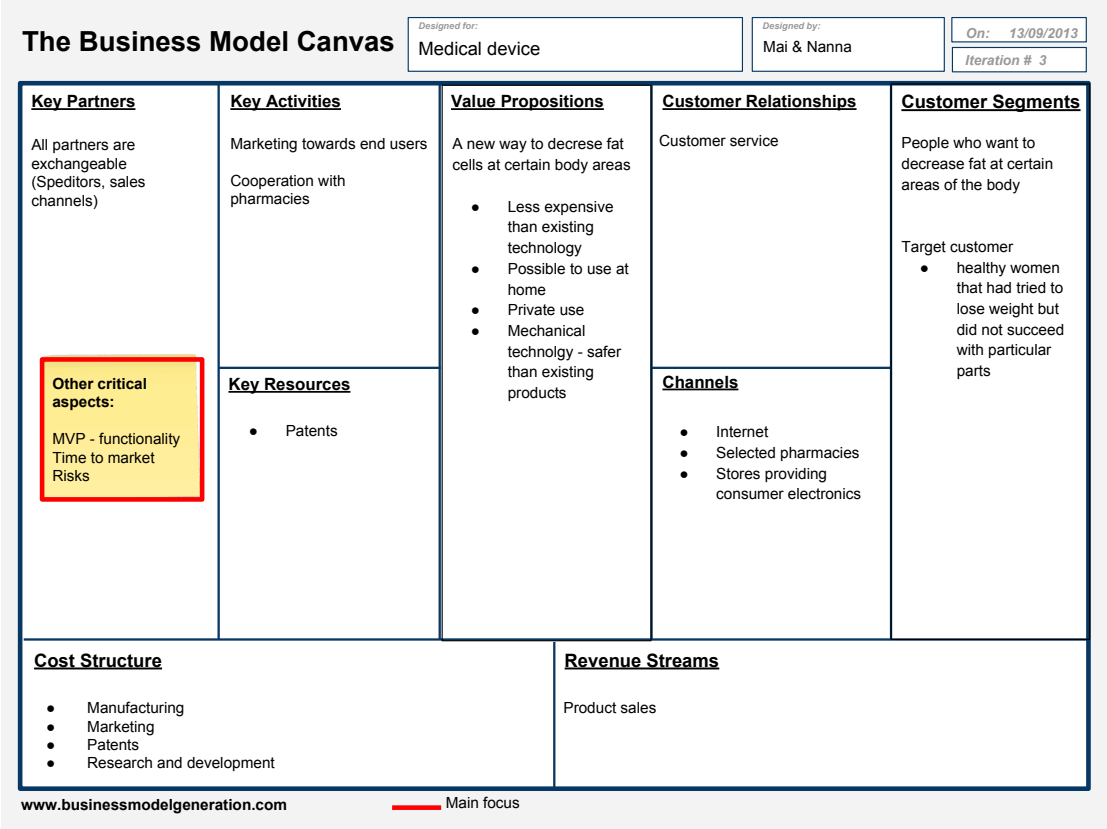

Figure 6 – BMC 3.

MVP

The Customer Development methodology recommends entrepreneurs to get out of the building early to test the problem and solution. It was understood that a MVP was needed early, in order to test and evaluate our solution in the later phases. Also, since the technology was not widely used yet, a MVP was considered to be important for presenting the product's concept and functionalities. The process of killing body fat cells by exposing them to low temperatures, but not below zero degrees centigrade, seemed too good to be true. Furthermore, the fact that this technology was only used in large devices at clinics, it was considered necessary to show the functionality for a smaller and different product. The possibilities were then investigated at an early phase of a startup to create a first MVP as soon as possible with minimum investments required.

There were many services available that could deliver a MVP, but since there were too many unanswered questions, a product specification could not yet be provided for them. A prototyping lab at the department of Mechanical engineering at Chalmers University of Technology was discovered, where a product could be designed. A safety course was taken in order to gain access and use the lab.

Regulation

In order to gain a better understanding of the associated regulations for the product, Läkemedelsverket (the Medical Products Agency in Sweden) was contacted for a CE mark (Products classified as safe and adaptable for its purpose are marked with CE) and other specifications. Staying up to date with the regulations became more important after being informed that the rules for CE planned to change in 2014.

4.1.3 Understood technology and risks

After enough market research for the fat cell reduction process through cooling was conducted, a meeting was scheduled with a scientist at the department of Chemical and Biological Engineering at Chalmers University of Technology. The main focus of the meeting was to understand the biological process within the existing products. More specifically apoptosis, which is programmed cell death, and necrosis, which is cell death that is not programmed. To be able to create a product based on the current technique, the processes must be completely understood as well as the risks associated with it.

Risks related to the skin, such as scar buildings, and risks related to the biological process, including apoptosis and necrosis, were discussed with the scientist. The scientist stated that the so-called "evidence" included in the previous research might not be strong enough. Potential long-term risks were discussed, especially for products that have only been on the market for a short time. Another risk was abuse; non-preferable customer segments could abuse the product, such as younger generations. The meeting resulted in a much broader view of potential risks and led to new perspectives. This was very useful, since companies advocating the technology explained the technique and function of the existing products as harmless. Also, the total time to market was believed to be much longer than expected.

4.2 Risks → Grand pivot 1

A grand pivot was made due to possible major risks and concerns for users, as well as an expected long time to market. Thus, it was decided to investigate a new idea, a health assistant application. This application was aimed to satisfy a societal problem, rather than improving people's appearances, which the medical device mostly functioned as.

In parallel with the pivot, new solutions were investigated for other health care related problems. One problem examined was the time consuming and inefficient visits at emergency centers, which has been experienced many times. Different solutions were discussed to help improve the process at emergency centers. One of the proposed solutions was investigated further.

4.2.1 Health assistant application – Idea formulation

The idea was to create a new communication channel between people seeking medical help/guidance and medical professionals, such as nurses and doctors. The idea would offer a confidential web based video communication service; a Health assistant application. A regular phone communication service would also be offered as an option.

Depending on if the user knows their area of concern or not, they would be asked to choose between two alternatives on a website, either *schedule a time for a conversation with a relevant professional* or *find condition based on symptoms*. If the second alternative was selected, the user would then be prompted to answer basic information such as age, gender, and weight. This would be followed by a visual image of the body to help localize the area of concern. Symptoms of the user could then either be chosen on the body or entered. The results would show possible conditions based on the information provided, and also rated and prioritized by relevance.

The user would then be offered to seek medical attention from one of our medical professionals suited for the user's condition through a video conversation. A video conversation was believed to offer more value for the user than a regular call to a nurse, that users already have access through 1177 (Health care guidance service in the Västra Götaland region, Sweden).

4.2.2 Investigated market through research and interviews

A service provided by WebMD, a US company, was found while researching for similar existing services. WebMD offered a function where patients could describe their pain by locating it on a visual body through their website, entirely similar to the service we planned to provide. The company also used statistics to reveal the probability of particular condition. However, nothing similar was found in Sweden.

Problem mapping 2 was created at this stage.

BMC

The Health assistant application idea was formulated through the building blocks of the BMC. As the idea became more formulated, a clearer structure of the idea was created as well as the content needed for the website. The idea formulation was summarized to fit the BMC in one page. Value propositions and target customer segments were the main focus in the beginning. However, a lot of time was also spent on key activities and resources, since the actual competitive advantages needed to be mapped. A great amount of time was also spent on the design, and how to enable a video conversation between professionals and users. The cost of using the service for users needed to be considered in order to suit the existing health care system in Sweden.

To help initiate entry for users, it was planned to have the first minute of the video conversation for free. The idea was to have the conversation charged on a minute basis, starting with the second minute at a price level of 15 SEK per minute. A monthly payment plan was also considered. Figure 7 presents the BMC at the current stage.

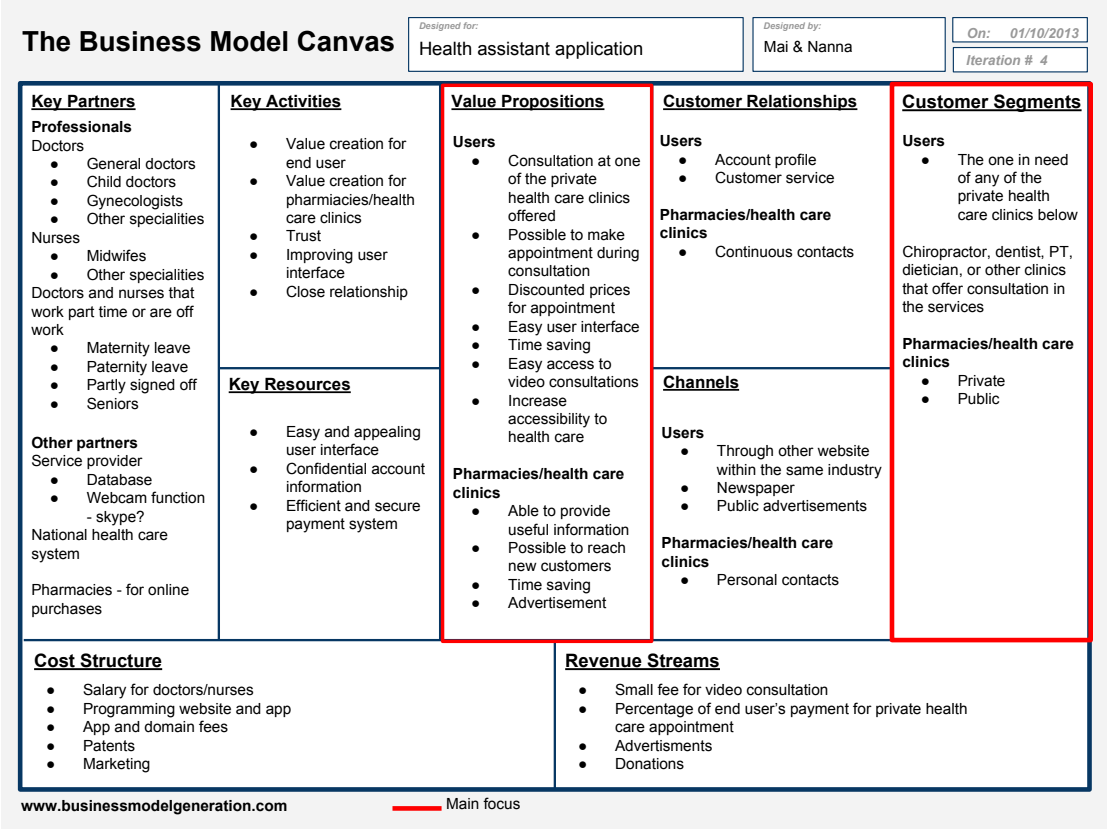

Figure 7 – BMC 4.

Multisided market

Another way to develop the Health assistant application was to include health care clinics, mostly private, in the BMC category for customers. Private health care professionals that offer consultation, for example chiropractors, dentists, dieticians, etc., would be considered the target customers. This resulted in a different business model, where the clinics were included on the monetary side, in a multisided market. The Health assistant application would still be available for all users, but the need to charge them for the service was no longer as critical. In other words, the users were no longer seen as paying customers. The first draft of the multisided business model was then created. An advantage of building a multisided business was that it was believed to create a user base free of charge, since we had some personal contacts with doctors willing to help.

The potential users in the subsidy side of the multisided market were considered to be parents, younger generations and people with tight schedules. The users could reach doctors quickly concerning medical conditions, other than for emergency situations. Figure 8 presents the BMC at the current stage.

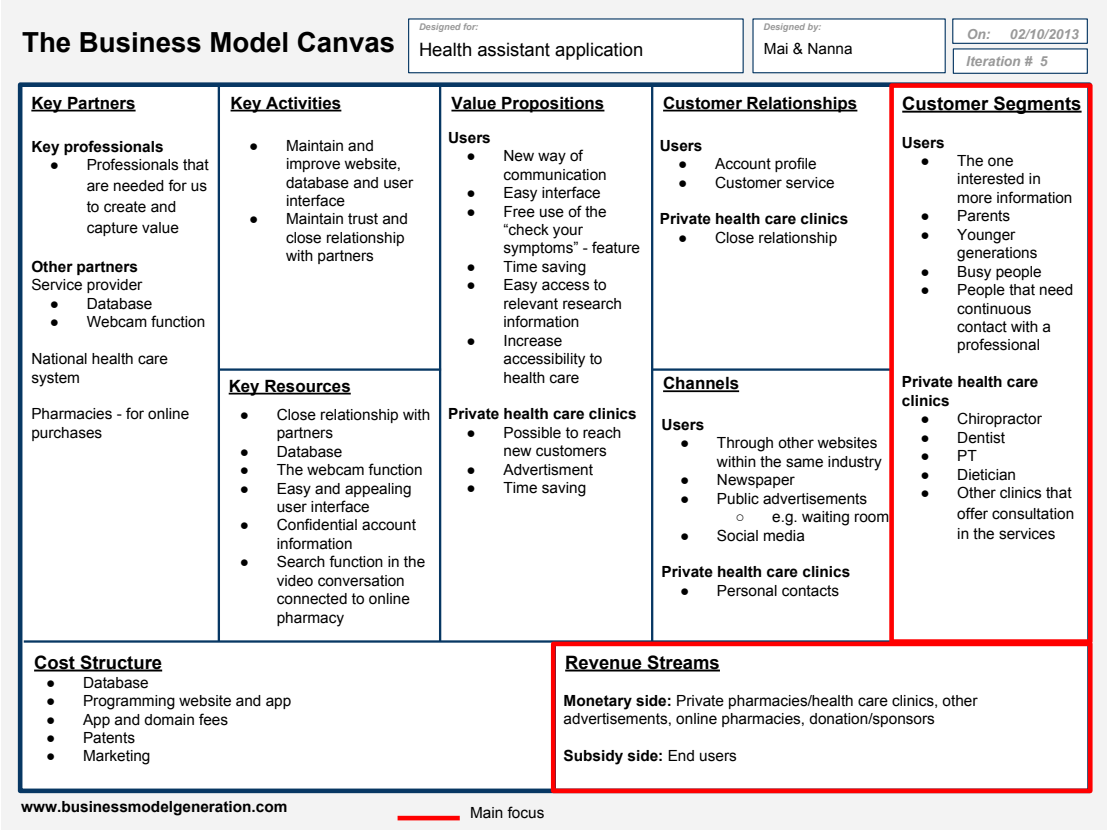

Figure 8 – BMC 5.

During the hypotheses testing for the monetary and subsidy side of the customer segments, it was difficult deciding on what problem or hypothesis to begin with. Prioritizing what problems or hypotheses to start with was considered essential, which lead to having the hypotheses categorized in problem mapping 2. Since the hypotheses in the problem mapping were related or similar to those in the BMC and for the idea formulation, it made the business idea clearer and easier to follow. However at this stage, it was difficult to determine the scalability of the created business models. More interviews needed to be conducted.

Competition

It was discovered that Vårdguiden (Health care guidance service in the Stockholm County Council, Sweden) and 1177 planned to merge in November 2013, and operate as a joined unit under the name 1177 Vårdguiden. It was also discovered that anyone was allowed to use, link, cite shorter text, etc. from 1177's homepage for free, and was completely legal. Furthermore, nurses on 1177 were only able to give information, advice, and evaluate your need of health care.

Since the Health assistant application offered a search friendly "find condition based on symptoms" option and an option to "seek medical attention from professionals through a video conversation," it would be directly operating in the same industry as Vårdguiden and 1177. However, the aim of the Health assistant application was to provide and build a service as a complement to other existing services.

Value proposition

A more objective comparison between 1177 Vårdguiden and Health assistant application were made. What new features did we provide? What new value did our application create? How did their business model differ from ours? It was believed that the Health assistant application could create value for the user by offering an option to talk with doctors through a video conversation, an easy way to find conditions based on symptoms, a user-friendly web interface, having an user account that saves history, and offering a mobile app. However, an essential question was if customers actually were willing to pay for this service and saw value in talking with a doctor instead of a nurse. Would users still see value in the service knowing that medical professionals may not be able to determine possible conditions through video conversations? Was a doctor's qualification needed, or was the competence of a nurse enough? Hence, users willingness to pay was important in BMC 4, not BMC 5 with the multisided market.

The interviews conducted with potential users showed different needs, depending on their age and way of life. All participants verified the value of the Health assistant application, but they only believed that the service would provide value for people with lighter conditions and for those that do not need to seek emergency service. The willingness to pay for the video communication service varied among the participants, which was around 50-100 SEK per video conversation.

A nurse stated that video conversations with doctors could be counted as normal visits. It depended of course on what kind of conversation it was, but it could definitely be sufficient and possible to make referrals to specialists through a video conversation. It was also very important that the doctors could call for emergency service when necessary.

One concern from the interviews was that the medical information available on the Internet might already be good enough or even too good, and the Health assistant application may not be necessary. Though, too much information on the Internet has made it hard to find the right information. A better search function through a "find condition based on symptoms" service, would for example provide users with more useful information, and help people diagnose themselves. However, a service that helped people diagnose themselves was not desired, especially from the health care's point of view.

Primary health care centers did not believe that video conversations could replace field visits, since patients need to be present for even a simple evaluation. Also, since health care centers benefit from having many patients listed at their center, it was expected that they would be against a new communication channel between doctors and patients. However, the video conversation service in the Health assistant application aimed to increase the communication options between doctors and users, and act as a complement to the existing health care services provided. It was important to clearly explain this during interviews with the medical professionals.

4.2.3 Investigated possible revenue stream

After many interviews with customers, doctors, dentists, skin doctors and other professions, it was realized that many professionals already offered free consultation to their customers. Therefore, many of them could not afford to offer additional services for free. Since the users did not want to pay for video conversations, there were two options, either to add more value to the service provided for the professionals or find alternative revenue streams. It was believed that more value could be created if the service contained an existing customer base for the professionals to access. Hence, it would increase the professional's availability and visibility for those using the Health assistant application.

Current business model

The current website for the Health assistant application had a homepage starting with two simple options. The user would be asked to choose between "Advises through video conversation" and "E-health care, a symptom checker." The user's Social security number or similar information will be asked in order to track relevant information, for example, where the user is listed (A registered patient at a certain health care center). If the doctors at the user's listed health care center are unavailable, the user will be offered to speak with one of our doctors or nurses online. This was believed to create value for the target customer segments.

Several alternative revenue streams were discussed. For example, could advertisement from pharmacies provide a revenue stream? In this case, their products could be sold or recommended through our website.

Another direction for the Health assistant application was to start a web-based health care center. The users listed at this web-based center could receive consultation through video conversations with an option to be sent to a physical health care center if needed. In order for this to work, several collaborations with different health care centers would be necessary. A web-based health care center could decrease costs in terms of time and transportation for users with lighter conditions. However, it needed to be researched whether this kind of business model would be permitted.

Further market research

It was discovered that ZoomCare®, a US health care company, already provided video conversations from which patients paid for using the service. Their business model was investigated, but it was realized early that the social system in US was very different from the Swedish system. Therefore, it was irrelevant to study their revenue stream as well as their business model.

Several health care center managers and physiotherapists were interviewed. The main finding was that the majority did not experience enough problems communicating with customers to consider using a new service. Further interviews within specific customer segments were needed, such as with managers and doctors at private health care centers with public funding.

Regulations

Different business models were discussed based on health care regulations gathered from the primary health care department for Västra Götaland region (Västra Götaland Primärvård), which handled our questions concerning Vårdvalsmodellen (the choice and privatization for primary health care). Västra Götaland's primary health care rules and requirements for quality (Västra Götalandsregionen, 2012 & 2013) were also studied. Information was further gained through conversations with managers at different health care centers.

It was found that the primary health care department in Västra Götaland Region would not approve a web-based health care center based on the rules and regulations. For example, a health care center must have a receptionist. Thus, it was not possible to operate a web-based health care center in cooperation with other health care centers. Therefore, the idea of being financed by the government through users being listed was no longer relevant. However, since it was still desired to provide the service free of charge for users, other possible ways to finance the service were investigated.

The conversations with the primary health care department indicated that the business model would work best as a service leased to or purchased by health care centers. This led to revisiting the value propositions towards the professionals in the private health care centers in BMC 5. Once again, what value could be created for health care centers, and was it enough? Could video conversations save time for health care centers and contribute to the number of patients listed? Would more value be created if the Health assistant application were only available to people who are listed at the cooperated health care centers?

The reason why the health care guidance service of 1177 Vårdguiden was created and needed was discussed with health care centers. The service was designed to make health care more available for people. However, with making it more available, it also created an additional step for patients. Approximately half of all callers are recommended to visit a health care center according to one of the health care managers. Most of these people that seek further health care do so by first calling a center, and then visiting it. This lead to unnecessary work since 1177 Vårdguiden was not needed in those cases. The same manager also claimed that more and more people were seeking help for less serious health conditions. It was also believed that the service provided by 1177 Vårdguiden was not necessary during the hours that health care centers were open, but was considered necessary and useful during the time health care centers were closed. In conclusion, a new service that would increase accessibility for patients would only be good if it did not become another health care guidance service similar to 1177 Vårdguiden.

Further market research and value propositions

Additional conversations with several health care centers were conducted to investigate other related problems within their business and daily work. Lack of time for patient visits, both through phone calls and through regular visits, was the most common problem identified. Thus, a doctor's time is valuable, and patient visits were time consuming.

Another common problem or need identified was the amount of listed patients. The more listed patients at a health care center the better, due to government financial support for each patient. However, too many patients listed at the same center would increase the workload, and thereby create a negative effect. This trade off was seen as a possible opportunity for the service provided by the Health assistant application. Letting doctors use video conversations for follow-up visits could save time. Furthermore, backup support to health care centers could be provided from the Health assistant application's employed doctors. They could help take care of phone and video calls during times of high volume, which could possibly increase the capacity for each health care center. Hence, it would make it possible for these health care centers to have more listed patients. Would this concept create enough value for the health care centers to pay for the service? Furthermore, it was discovered that doctors or health care centers also received compensation for treating patients over the phone.

Additional information about listings at health care centers was gathered. The fees for listed patients is currently 100 SEK compared to 300 SEK for unlisted, which recently was changed. It was now three times more expensive, for a patient to visit a health care center without being listed.

4.2.4 Misunderstood the public finance support → Pivot

When talking to the department of Vårdvalsmodellen in the Västra Götaland region it was realized that the compensation rules for doctors were misunderstood. The compensation for visits and phone calls that were believed to be a general compensation for doctors, only concerned doctors who worked according to the national rate, also known as rate doctors. These doctors do not work for a public health care center, but instead are working at private clinics.

Health care centers receive compensation based on the time they spend on their patients divided by the time available. Hence, if the health care centers already had a high coverage rate, it would be difficult to increase their revenue. Increasing the amount of listed patients was still valuable for health care centers, but the value created was believed to appeal more to rate doctors.

After investigating rate doctors, a pivot was made. The new idea would offer the service to these doctors for free, but in return they needed to be available for an appropriate amount of hours each week. Our service would provide rate doctors with more customers and provide marketing for them from our website. Through the use of our service, rate doctors could also receive public compensation for the calls made. The users will be able to visually reach a doctor from home, and the service would be free. Additionally, the users would be able to use this service in the evenings and on weekends when their ordinary health care center is closed. Advertisers would then support the Health assistant application. The symptom checker tool we offer would also contribute to our user base along with the user base from rate doctors using the Health assistant application. Figure 9 presents the BMC at current stage.

Problem mapping 3 was created at this stage.

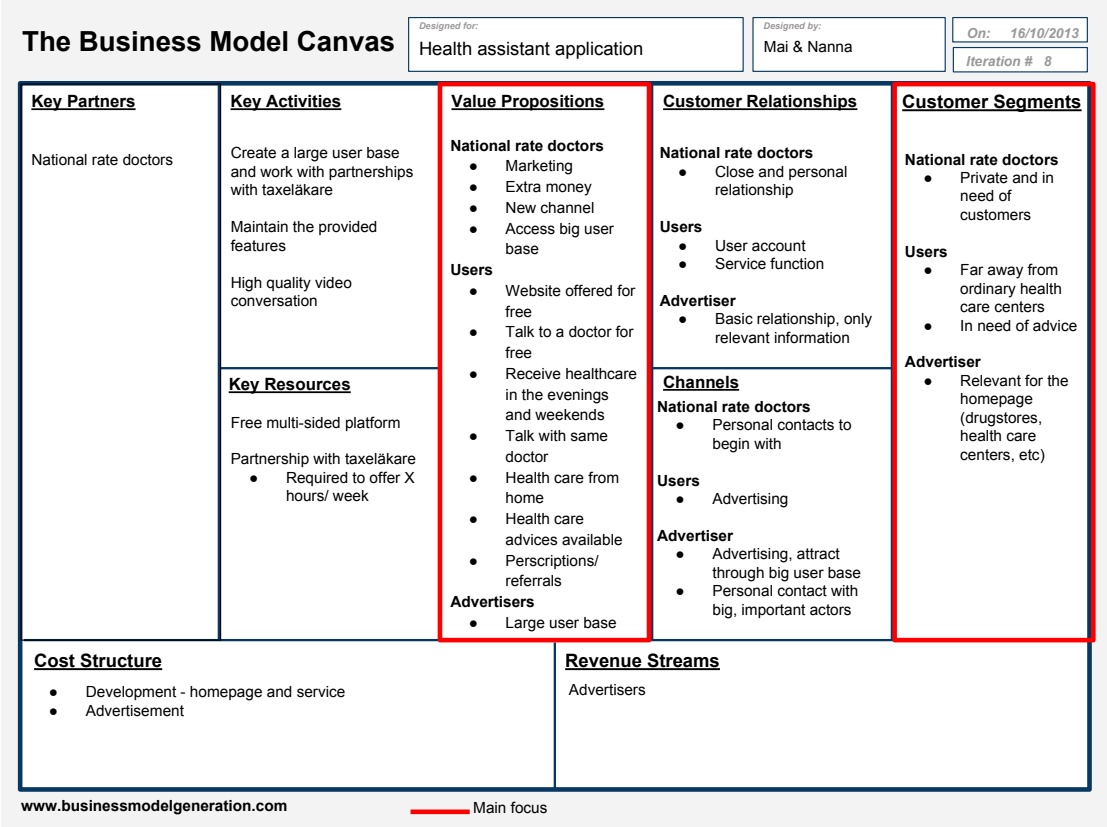

Figure 9 – BMC 8.

4.2.5 Investigated target customer – National rate doctors

Most of the rate doctors have been in the business for a while and seemed to be against changes. They were hard to get in touch with and were usually unavailable. The rate doctors did not show any interest for something new or innovative. Some clinics were only open four days a week and some did not have a receptionist. Furthermore, some clinics have also changed locations without updating their information online. The cooperation with rate doctors began to feel more difficult to achieve. The idea to create a partnership with rate doctors was no longer as relevant.

The following discusses the opinions of a few rate doctors that were reached. They made their own work schedule, and felt that they had enough patients. They did not believe the Health assistant application was necessary. Some mentioned that it would be very costly to have doctors answering phone calls instead of nurses. They believed the service provided by 1177 Vårdguiden was good enough. According to some rate doctors, the availability of video conversations with doctors would make it difficult to retain clients if all people were offered the same service. The rate doctors further claimed that it should be easier to get a hold of them in comparison to doctors within the public health care. However, that was not experienced. Almost 30 phone calls to different rate doctors were made several times during opening hours, but only five responses were received. Fifteen visits to clinics during their opening hours were additionally made without any answers and results. However, since most of the clinics did not have any receptionists, it was understood that appointments were needed before visiting. Therefore, the easiest way to reach them was to leave a voice mail, which was also done without receiving any responses. Figure 10 presents the BMC at the current stage.

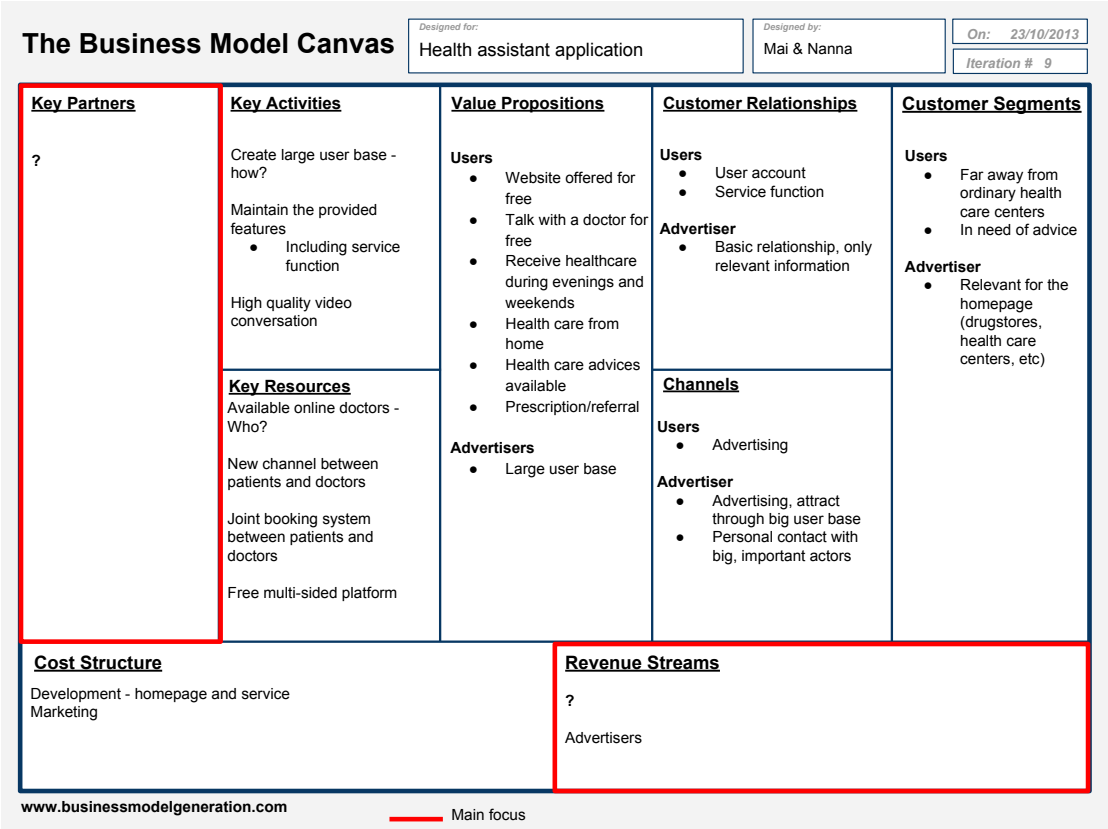

Figure 10 – BMC 9.

Pivot

Since it was hard to get in touch with the rate doctors with their various schedules, work situations, and ongoing unavailability, it was hesitated on whether they even had time for the Health assistant application service. A pivot was eventually made, and rate doctors were no longer considered as a potential partner or customer. The business model became a struggle. How could the Health assistant application be financed through the video conversations without rate doctors?

After more research, it was confirmed that a doctor could not receive compensation for work that is both through the national rate and other sources. In other words, no doctors would work both with the Health assistant application and at health care centers. This discarded the hypothesis of working with doctors employed at health care centers and with national rate doctors, unless the centers leased the service.

Pivot and market research

Another pivot was made, and the search for new problems or needs within health care began. Thus, in order to find a problem worth solving, more conversations about the problems associated with the health care system were conducted with users. The problem that came up the most during the conversations was the waiting time at the emergency centers. Other problems mentioned were all related to either the receptionists at emergency centers or other specialized departments. A Problem mentioned with specialized departments was that it was complicated to search for the right health care department with or without referrals. The health care process was described as slow and dispersed.

A clear problem area was shown among users, but more information was needed from directors or other professionals within the health care system to understand and confirm the problem. Hence, an attempt to book a meeting with a former head of emergency department at Sahlgrenska University Hospital who is currently the senior project leader at Västra Götaland region, was made to gain insight on the problems associated with the emergency department. Meetings with other emergency departments were also planned to help verify problems.

4.2.6 Investigated other problems within the industry

The meeting with the current senior project leader at Västra Götaland region brought awareness of a schedule related problem at hospitals that many people within the industry were facing. Relevant data and information were presented. We were also directed and referred to the right professionals within the industry for investigating the problem. The project was given to us and could be started immediately.

4.3 Problems not worth solving -> Grand pivot 2

A grand pivot was made, since solving the problem at the hospital was considered a project rather than something to build a business from. Hence, the project was not scalable. Therefore, it was decided to search for other problems.

4.3.1 Searched for problem worth solving within other industries

New ideas in different industries were discussed. Spending time on discovering and evaluating problems had made us more observant of problems worth solving. Problems were related to bigger segments, different age groups and individuals in different phases of their life. During this brainstorming phase, the search for problems, market research, and discussions were practiced simultaneously. Successful businesses abroad that required local connection where also considered

4.3.2 Investigated financial investment idea

Idea formulation – Towards Small Medium Enterprises

Out of seven potential ideas, a new way to make financial investments was chose to be further developed. Since banks charge a high managing fee for investing, and since investment opportunities increase as the amount of capital invested increases, a better way to invest was believed to exist. The plan was to offer different Small and Medium Enterprises (SME) the opportunity to join different portfolio distributions. This would be offered through a web-based platform. SMEs that select the same portfolio distribution would be grouped together to create higher investing power. Our financial service would work as a mediator, and invest the money as one actor and company. Companies with bigger investments are able to receive better agreements with banks, which was the purpose of the idea. This would help decrease the managing fee for SMEs who choose to invest through us. Thus, lower investment cost and increased opportunity would then be obtained.

Regulation

Since offering portfolio distributions could be equalized to consulting services in terms of advising people on what to invest, the regulations needed to be investigated.

FI was contacted in order to understand and clarify if permissions were needed to provide this service. It was confirmed that anyone could give advice as long as it was not specifically addressed to a particular person. In other words, it was permitted to give advise without authority, if the advice given was addressed to segments or larger groups. Figure 11 presents the BMC at current stage.

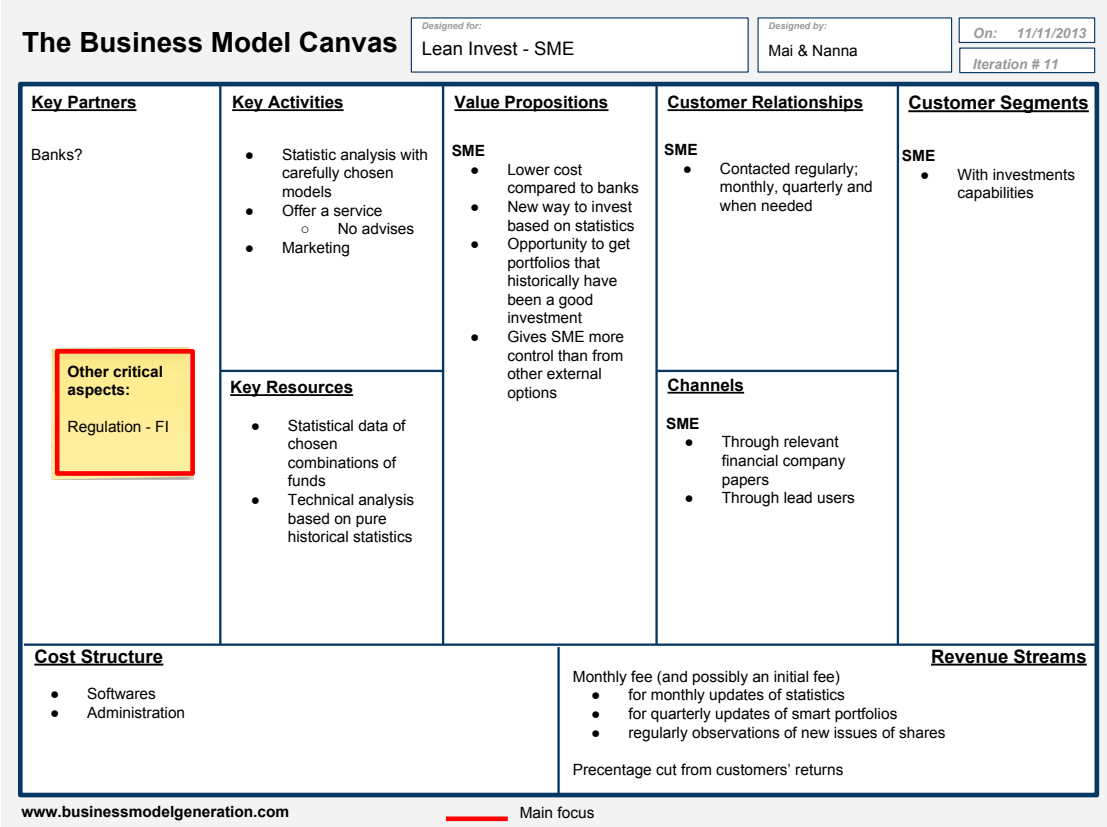

Figure 11 – BMC 11.

According to FI, the need for permission was also becoming more common for companies that were advising certain segments. This however is decided from case to case. For our case, we would have to function as a mediator, and permission would be required in order to manage investments.

Market research

In order to investigate the managing costs at banks, one of the leading banks in Sweden was contacted for more information about their funds and managing fees. More specifically, it was important to understand how the funds, fees and customers' returns were calculated. What is included in the numbers presented on their website? According to the bank, fees concerning brokerage for example were deducted from the statistical growth of the funds presented on the website. However, when the bank was contacted again, it was explained that all fees were included in the results for the funds.

Thus, funds with a growth of 10% on the website implies that the actual value has risen even more. The fees at other banks in Sweden were also investigated, followed by a comparison between their fund results and indexes, including reinvested dividends. The fees were very high, and the comparable indexes performed better than almost all funds that were investigated.

Idea formulation - Towards SME and individuals

A pivot was made since we were not authorized to manage investments yet. The service we aimed to provide would no longer work as a mediator. The idea concerning financial investments was further developed into a service that would use historical statistics to provide stock portfolios. The statistics were based on different distributions of stocks from which portfolios were created. Through statistical analyses, portfolios that were believed to follow a trend would be offered. SMEs and individuals with investment capabilities could buy and use these portfolios as a base for their investments. In other words, the product would be based on statistics and optimization, where historical prices would create the foundation for future outcomes. Different alternatives would be offered depending on the choices made by the users, such as market choice, investment level, ethics, etc.

The users would be charged monthly, which would include updates for statistics, quarterly updates for portfolio distributions, and observations on new issues concerning shares. We believed that our service could offer a lower cost to SMEs and individuals in comparison to banks and other financial companies. However, our idea was based on their willingness to invest by themselves. Lower cost would be obtained in relation to the high managing fees that banks and other investment companies charge. Banks usually charge 0.8-1.8% per year for customers investing in funds. We planned to charge only 0.1% of the user's investment for our service. A low cost was possible due to the use of statistical analyses. Portfolios that have statistically performed better than other funds could be created, and offered to multiple companies or individuals. Users would pay for updates and invest by themselves from the given information provided.

Our service would give users more investment power than before if banks were managing their investments. The service would also require little to no market research compared to individuals investing by themselves. However, the current business model's value propositions needed to be carefully considered. Also, we needed to be clear about what value would be created and how to best capture it.

BMC

It was important to be able to complete all of the building blocks in the BMC in order to understand the possibilities of the idea. It was understood that the business model of the financial investment idea needed to be better developed. The hypotheses needed to be more specific, and be more related to each other. Hypotheses for every part of the BMC were also needed in order to understand the value of the idea. Some necessary questions needed to be answered. How should we build the revenue stream? How sticky and viral could our service become? How should we scale it? Who are the competitors? The most critical building blocks at the moment were considered to be within channels, revenue streams, and customer segments.

It was a struggle to determine how to approach the customer segments, which were still believed to be SMEs and private individuals. As for SMEs, we needed to talk with owners from different companies. For private individuals, it was decided that our targeted individuals would be in the 50-70 year old age group. For both segments, an MVP planned to be created as soon as possible to use as a tool to present the idea. Figure 12 presents the BMC at the current stage.

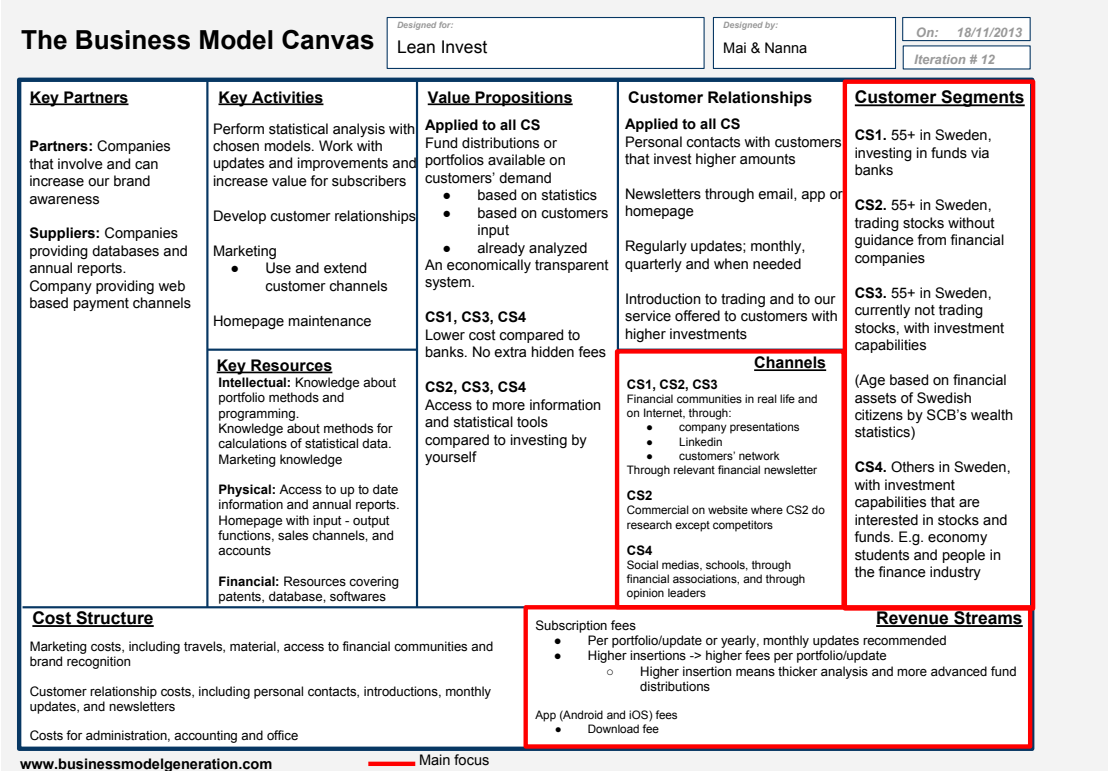

Figure 12 – BMC 12.

The revenue stream was also discussed heavily. Different possible price setting strategies were studied, which resulted in three models. Out of the three models, it was preferred to have the revenue stream that did not require the banks cooperation. Our service provided would charge the users an administration fee, which would be a much lower percentage cut from the users' returns compared to other banks or similar companies. The administration fees would also include regular updates of statistics and smart portfolios. In order to make this business model work, the users were required to send us bank statements based on the portfolio chosen through our service, to measure performance. The customers would have control over their own funds and would receive statistical analysis for a very small cost.

Market research of the finance market was also made. The finance market contained many companies that offered advices on suitable portfolios based on statistics and analytical tools. However, since most of them focused on analytical tools, their strategies differed from our service.

4.3.3 Developed BMC and MVP

The business model was further specified, in order to break down the hypotheses. Discussions concerning revenue streams and the risk of users being dishonest when sending in bank statements to us, as well as the inconvenience, resulted in a new pricing strategy. Instead of taking a percentage of users' profits, the users could instead pay for the actual portfolio distributions. The distributions would differ depending on the investment amount and the complexity of the distribution. People with higher investment capabilities were required to pay more for more advanced distributions. It would also be recommended for users to update their distributions regularly. By charging per distribution, revenue would be received earlier, for faster product development.

The key partners, cost structure, and revenue streams in the BMC were now focused on. This resulted in a clearer model of how the business could function. In order to receive additional input, more interviews with potential users were conducted, and existing products were investigated. Statistics from different funds were also gathered, and corresponding indexes were then used to make comparisons with different fund graphs. All of the banks' index funds showed a lower performance than the actual index.

The MVP and the website were improved. Since the coding required more time than expected, a PowerPoint presentation was used to illustrate an MVP to explain and show the functions. In the meantime, the technical solutions for our website were discussed with friends who were experienced in the area, which helped point us in the right direction. Different potential methods to create optimal portfolios were also further studied.

4.4 Pursued Lean Invest

After a better understanding of the market and many problem and solution evaluations, a pivot was made. The business idea of providing portfolio distributions for private investments decided to be further investigated. The name Lean Invest was considered.

The attention and interest of Lean Invest showed to be greater than expected among potential users and various actors within the industry. Nevertheless, in order to succeed in providing this service, the corresponding problem within the finance market needed to be identified as a problem worth solving. The following three problem hypotheses needed to be tested.

- It is expensive to let banks manage your investment money.
- The gap between investing in funds on your own and investing through a bank is too large.
- There is a lack of investing knowledge. People do not invest by themselves because of the fear of making bad investments

It was believed that our service could offer users the following statements.

- Save money. No managing cost.
- Decrease the gap between investing in stocks for individuals on their own and investing in funds through a bank. Make it possible for people to invest by themselves with less market research effort.
- Investing Knowledge. The methods used for the portfolio distributions would be shared with the users.

Hence, we would provide portfolio distributions based on statistical analyses, adapted to the customers' investment capabilities. Supplied buy and sell signals would make stock trading easier and help customers manage their own investments.

4.4.1 Specified Lean Invest idea and the BMC

Contacting bank and FI

One of the banks we spoke with earlier was contacted again and asked about the development of an index fund in comparison with the historical stock value over time for the same fund. According to our calculations, the graphs did not look the same as its historical stock values after the financial crisis in 2008. The existence of the hidden fees and the performance in the graphs was questioned. The employee interviewed was unable to clear this up for us. Professionals higher up in the hierarchy needed to be contacted for the answers.

FI was also contacted again. It was believed that a service offering many functions and options for the user to choose from would be hard to create, without being classified as an adviser. It was also agreed that we could have a direct contact with one of the professionals at FI for questions in the future. Emails could be sent to FI with proposals, and in return receive advice and guidelines.

Revenue streams and channels

The main focus in the building blocks for the BMC was now revenue streams and channels. Two possible models for revenue streams were investigated. The first and preferred model was based on cooperation with one of the three major Internet based banks, Avanza, Nordnet or CMC Markets. Cooperation with one of these companies would bring us an existing customer base. A calculation was made to determine the percentage of Avanza's 300 000 customer that was needed in order for Lean Invest to be profitable. The result was a mere 1 % of Avanza's existing customers, which included a 50% discount on the portfolio distributions planned to be offered to members using Avanza. The second revenue stream model was not based on a partnership with one of the companies mentioned above, and needed be further investigated.

According to our mentor for the master thesis, it was essential to create a viral effect when launching the business, unless the business already had a rare and effective way of reaching the market. It was realized that in this particular case, marketing could depend on building relationships and creating authority, which would require a great amount of time.

In order to reach the right customer segment, we created story telling with potential users. We wanted to understand the current strategies of the potential users, their current situations, and how they wanted to be reached. However, more interviews were needed in order to better understand the customer segment. A potential first target segment was students. Schools could easily be visited in order to reach out and talk with relevant students about the possibilities and advantages with Lean Invest.

A lot of inputs were used on how to raise the awareness for Lean Invest. Different kinds of services where a "buzz effect" have been seen were also investigated for inspiration. Most of the buzzes lately have been seen through social media.

A potential strategy was to offer users a freemium and a premium model.

Freemium would include:

- The day's free portfolio distribution
- The possibility for customers' to have their existing portfolios analyzed
- An overview of how much customers would have saved/can save by investing by themselves
- The week's most profitable portfolio distribution
- An account with historical portfolios distribution

The premium model would include:

- Several portfolio distributions
- Updates
- A premium mobile application

Value propositions

Value propositions were formed in terms of value creation for potential partners and for Lean Invest.

Partners will offer Lean Invest:

- Co-branding
- An existing customer base
- An easier process for customers to buy stocks through our website
- Viral capabilities
- Marketing

In contrast, Lean Invest will offer partners:

- A discounted (50%) way for their customers to receive stock portfolio distributions though statistical analyses
- An additional feature to their services
- Potential customers through Lean Invest's customer base
- To become part of a new trend

The value propositions of Lean Invest were also compared to the value propositions offered by competitors. We were aware that the existing actors within the industry could copy Lean Invest, and that new actors could enter the market. Therefore, the competitive advantages of Lean Invest needed to be mapped. One potential competitive advantage could be to offer the service together with for example Avanza, as mentioned earlier. It would create a channel that would be hard to imitate for new actors as well as an existing user base for Lean Invest.

Market research
Potential market validation and market size were investigated. The data was collected through annual reports, Statistiska Centralbyrån (Statistics Sweden), and other official information available on the Internet. Market research was conducted to estimate Lean Invest's potential market share. The market share was calculated into potential revenue streams. Furthermore, a model using market adoption was also created where viral capabilities and opportunities for creating a buzz were considered.

The market adoption model was created as a part of the first revenue stream model, including a partnership with Avanza, Nordnet or CMC Markets.

Problem mapping 4 was created at this stage.

4.4.2 Verified the problem-solution fit through interviews

New target customer segment
Our mentor for this master thesis proposed a more specific customer segment. The target customers could be individuals in the beginning phase of their career or within a few years of starting. This customer segment was investigated, and the following was discovered. They want to save money for their pension, for a house, etc., but most of the time they do not know where to start. They want to invest in stocks, but do not have the time for market research and time to understand stocks. Since the potential target customer segment was within or close to our generation, and at the beginning of their careers, it was easier to relate and understand. However, in order to reach the target customers, new channels were considered. Existing websites and forums that recommended different fund or stock distributions for investments could be used. Available financial societies and clubs were another possibility. Lean Invest needed to be scalable. Figure 13 presents the BMC at the current stage.

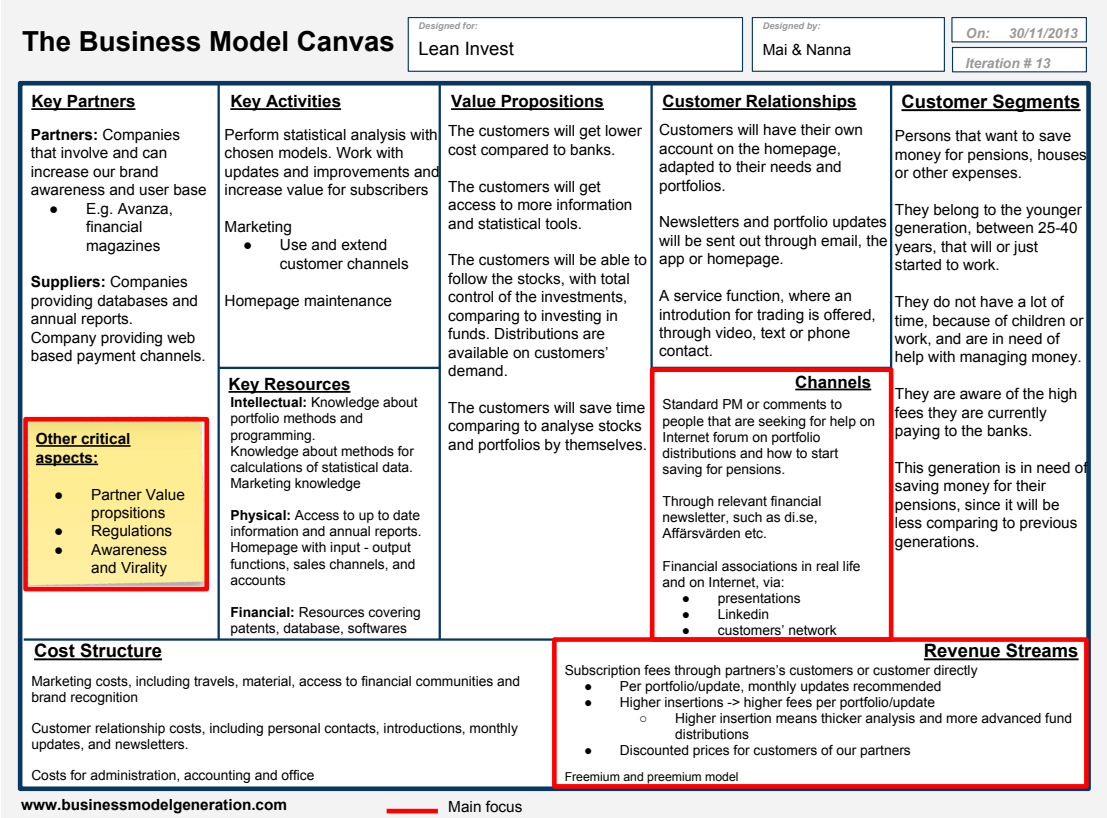

Figure 13 – BMC 13.

Potential users in different age groups and phases in life were interviewed. Most of the interviewees were annoyed about the high managing fees at banks and the fact that banks were making a lot of money, even during the financial crisis. Many of these individuals were willing to invest by themselves, but due to lack of knowledge and time they chose not to. However, some of the participants chose to let the banks manage their investments so they did not need to worry about it, and felt comfortable assigning the responsibility to someone more familiar in the area. The interviews showed that the willingness to save money for pension in the target customer's generation definitely existed, and was considered by many. As for the interviewees that chose not to invest at banks or by themselves, beginning to save for pension was clearly a stress factor. The interviews confirmed the most important hypotheses for the current situation. Enough hypotheses have been verified in order for us to define Lean Invest's target customer segment.

Regulation

From being informed of the regulations provided by FI, we decided to build the product before investigating the launching possibilities. FI informed us that they do not evaluate any products before being launched.

4.4.3 Specified methods for the MVP

Investigation of bank index funds were made and compared to indexes with reinvested dividends for the past five years, 2008-2013. The indexes showed better results than the index funds. Thus, we could provide better solutions than the index funds only by helping people to follow the index. The MVP in the early phase would include the use of Fama French, where value vs. growth and small vs. large companies are being used.

An index, for example the OMX Stockholm 30, could provide the basis for Fama French. Customers could then easily weigh small to large companies and growth to value for themselves at Lean Invest. This mathematical model was easier to perform than other models planned for Lean Invest, and was considered suitable for the first MVP. Furthermore, by only using the Fama French model, the MVP could be constructed without any external assistance.

4.5 Future plans

The most important steps for us now are to improve the MVP and to talk to more customers. It is important to point out that Lean Invest does not fulfill a necessity; good solutions are already available. Less expensive funds or even funds for free are available. It is an open market and people can invest in stocks by themselves through the Internet, with or without the advices available for free.

The business model is being improved, tested and verified continuously. The product will be offered for free in the beginning. A premium model will eventually be integrated. Another option is to keep all features free of charged and let the partners and banks pay for cooperation. However, in order to be able to offer the product for free and create a user base, we need funding. Developing a startup includes a lot of uncertainties. A necessary approach is to find investors or other financial support. An advantage with Lean Invest is that it will not cost much to develop the product, especially the MVP. Some time is however required.

The problem presented and the solution provided by Lean Invest is creating more awareness after being selected for the Chalmers Innovation Startup Camp for the Spring of 2014. It is a ten-week program where participants aim to investigate and build something of great value. In other words, the product-market fit is tested. A competition of performance is addressed for the 16 teams that are selected. The teams that performed the best have the chance to receive an investment opportunity up to 300 000 SEK. Potential investors are Chalmers Innovation themselves and other investors linked to Chalmers Innovation. The current MVP consists of two parts, a functional homepage and a portfolio distributions service. Both of them need to be improved, which are possible with current knowledge and resources.

Lean Invest is also currently one of the competing ideas in Venture Cup. The feedback from the first competition, the business idea phase, was very positive. Professionals within the finance industry and within Venture Cup's network showed interest in the idea and the vision. Different opinions about the revenue streams and target customers were gained. The second competition, the pitch phase, has been sent in and is now in progress. The best pitch will win consultancy services worth 10 000 SEK. The business plan, which is the last competition, is under development and has not been sent in yet. Sending in a business plan is a part of the competition to get into the regional final and to win 125 000 SEK. The winner from the regional final will then have a chance to get into the Swedish final, where the winning prize is an additional 125 000 SEK.

Many people have showed their interests for the solution provided by Lean Invest. The early adopters seem to be people that have recently finished their education and have started working. They have not started saving money for the future yet, but are interested in stocks. The reasons why they are not saving in stocks at the moment are due to lack of time, knowledge or interest to look up markets and companies by themselves. Another segment that is also expected to be one of our first users is people that already are trading stocks by themselves. Lean Invest could be used as a complement tool for their investments.

The product-market fit has been found, and is ready to be validated in the Customer Validation phase.

5 Analysis

The purpose of this study was to apply the approaches of Effectuation and Customer Development in a real time startup case, and analyze how they could be combined and complemented with additional activities. In order to do so, the analysis starts with a short summary of the content analysis, and then focuses on the research questions.

5.1 Summary of the content analysis

The content analysis segregates the actual performances during the startup case. The categories used in the analysis were recognized either within the approaches of Effectuation and Customer Development or as additional activities used in the startup case. The content analysis made it possible to examine the use of the principles within the approaches, as well as investigating what additional activities that were used. It also made it easier to study the distribution of the various activities. The content analysis diagrams can be found in Appendix I, and are summarized by week.

The content analysis statistically exposes what activities that were used over time, and to what extent. The results did not correspond with the expected distribution for the various activities. Some of the results in the content analysis were even unpredicted, due to activities within the natural behavior of the researchers.

5.2 Principles performed within Effectuation and Customer Development

The first research question was to investigate what principles were performed within Effectuation and Customer Development in the startup case. The principles used in Effectuation are first presented, followed by the principles used in Customer Development. Within Customer Development, only Customer Discovery is considered, since the startup case only consisted of the very early phase of the company building process.

5.2.1 Effectuation

This section examines what principles were performed within Effectuation in the startup case. The extents of the principles used are presented in Figure 14.

Out of the five principles, the crazy-quilt principle was used most frequently. The affordable loss principle was the second most used, and the bird in hand principle was used to some extent. The lemonade principle and the pilot-in-plane principle had no clear connections in the content analysis.

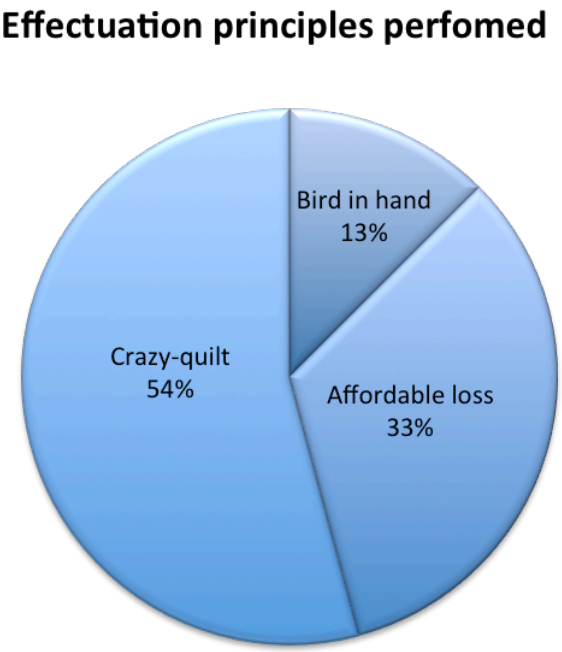

Figure 14 – The distribution of Effectuation principles performed throughout the startup case.

The crazy-quilt principle

Stakeholders had a big influence on the startup case. In fact, the most valuable information was gained through different stakeholders. Information was mainly received through conversations with potential customers, but also through actors within the industry. Other experienced people in various areas were further contacted in order to increase our knowledge about the market and/or the technology.

Stakeholder commitments were only performed in the Lean Invest idea. Within the Medical device and Health assistant application, major pivots were made before the business ideas received enough external interests and possibilities to involve other actors. Based on the three ideas, it was experienced that the crazy-quilt principle should not be focused on too much in the earliest phase for a startup case. In other words, much can be performed without stakeholder commitments in the early phase. A commitment would create possibilities but also can create conflicting interests in the startup.

The affordable loss principle

The principle of affordable loss was often in mind during the startup case. It was easier and more reliant to plan for something based on what one can do with existing resources. Conversation with interested stakeholders, such as potential investors and partners, were more responsive to business plans that could be realized within the near future.

The bird in hand principle

What we know and *whom we know* were the most frequently used means within the bird in hand principle. The knowledge base was continuously increased in various ways and areas. Most of the information was gained through conversations with stakeholders. Information was also gained from studying the market through the Internet, articles and previous case studies. This was considered very important during the startup case. For example, while working with the Medical device idea, the technology was investigated thoroughly by examining existing research studies and by talking with scientist. The research studies validated the technology of the proposed product, which made it more reliable when presenting the idea.

In relation to the *whom we know mean*, several people were contacted within our own network as well as other people linked to our network. Gaining more knowledge also contributed to increasing the size of our network. It was realized that our means were considered and developed during the whole startup case. Market understanding was highly prioritized and was performed in line with the increasing means.

Nevertheless, the mean *who we are* was not considered. It only reflected the startup case in terms of what education, interests and personalities we possessed, which was not recorded in the daily documentations.

The lemonade principle

Since the definition of what an unexpected contingency is can be interpreted in several ways, the lemonade principle was hard to evaluate. No clear connections were found in the daily documentations. The content analysis showed that opportunities were actively searched for and developed rather than discovered. More specifically, the problems were searched for.

By the end of the startup case, new business ideas were easier to discover and evaluate than previously experienced. We had learned how to better recognize opportunities. With that in mind, the lemonade principle was hard to use for discovering a major opportunity as an inexperienced entrepreneur. It was experienced that discovering opportunities is a quality that can be developed. As inexperienced entrepreneurs, it was natural to start off by actively searching for opportunities.

The pilot-in-plane principle

Since some rules or policies within the different industries discarded some hypotheses right away, it was important to consider regulations during the startup case. Different technology and market trends were also studied in order to investigate the possibilities of the ideas. The startup case was actually performed in reverse from the pilot-in-plane principle.

The pilot-in-plane principle suggests that the entrepreneur's future is controlled by stakeholder commitments. In the startup case, the products or services were mainly improved by interacting with potential customers. Problems worth solving were searched for through conversations with these potential customers.

The solution was then investigated in the same way. The search for problems and solutions through customers were more related to the Customer Development approach.

It is interesting to discuss the use of the pilot-in-plane principle for later company phases rather than in the startup case in this study. People are often more willing to join more developed ideas or concepts. In the startup case, it was much easier to find potential and relevant partners when having more precise and developed concepts. The Lean Invest concept showed great interest among customers, which raised the awareness among potential partners significantly.

5.2.2 Customer Discovery

This section presents the principles of Customer Discovery that were used in the startup case. Figure 15 shows the distribution of the activities performed within Customer Development, or more specifically within Customer Discovery.

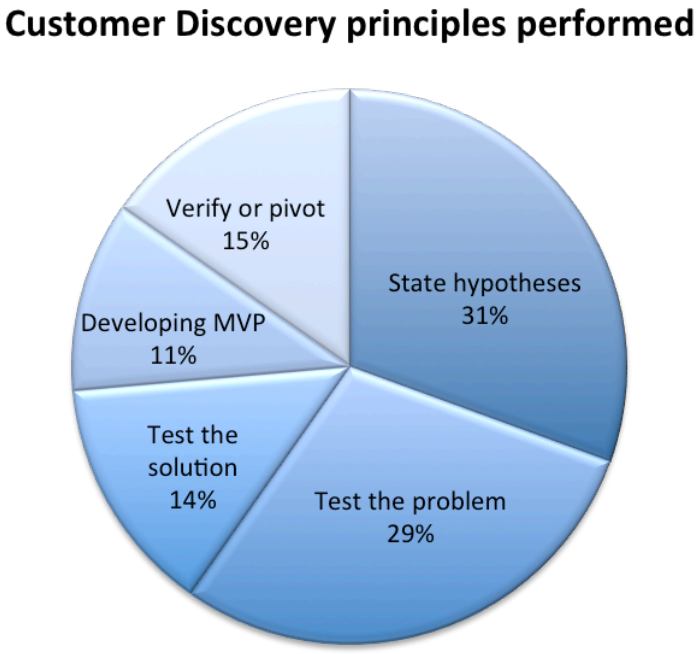

Figure 15 – The distribution of Customer Discovery principles used throughout the startup case.

As seen in Figure 15, almost a third of the activities connected to Customer Discovery were associated with stating hypotheses. A lot of time was spent on stating hypotheses since almost all of them needed to be revised after speaking with potential customers. A third of the activities were also spent on testing the problem. Only a few of these problems were verified and followed up with solution-testing. Even fewer were tested with a MVP.

State hypotheses

The most common activity, stating hypotheses, was performed according to the Customer Discovery process, where the BMC was used as a scorecard. Almost all building blocks were considered, but we had a main focus on customer segments and value propositions. The other building blocks of the BMC were utilized in order to understand how the business idea could be turned into a profitable business.

A lot of time was also spent on brainstorming to form ideas and hypotheses. This was done through discussions and often from inspiration from other successful startups or innovative ideas. A lot of market research was made during the brainstorming sessions. Furthermore, patent and regulation research were performed in order to state hypotheses according to the market and industry.

The process of stating hypotheses changed during the development of the three business ideas. There were plenty of hypotheses for the Medical device, many of them being very broad. It was realized that too much time was spent on the hypotheses before getting out of the building to where the facts are. As the process continued, the hypotheses were stated more objectively as well as being prioritized. Only the most important building blocks in the current business idea were considered before talking with potential customers or other stakeholders. The process of stating hypotheses and getting out of the building were performed more simultaneously and parallel than earlier. Even if some of the building blocks were not prioritized, it was experienced as necessary to have an overall picture of the BMC.

Test the problem

In order to understand how customers act, how they solve problems, and their willingness to pay, we tried to put ourselves in their shoes. Numerous interviews with customers were conducted as well as with several related associations, organization and forums. We wanted to understand the problem at an individual level as well as with larger groups. It was interesting to see how they responded to the information related to the problem that was presented. Besides focusing on customer understanding, market investigation was also performed with other key influences, as recommended in Customer Discovery. Various stakeholders and professionals were also met continuously during the startup case. The BMC was improved in line with the new findings. The priority of the building blocks and hypotheses were also affected based on the findings.

Test the solution

The solution-testing was not performed as often as the problem testing, since the suggested problems often turned out to be neither a problem nor a problem worth solving.

The solution was usually explained in conversations with the customers in order to test the solution. In some cases, a MVP was presented. Even though the MVP and our explanation were considered enough for the customer to understand the solution, further testing was often needed with an improved MVP. Input on how to improve the presented product was gained through customers' feedback.

Further solution-testing was then performed after improving the MVP. Trials to create a solution with the customers were also conducted. The BMC needed to be updated regularly during the solution-testing phase in order to record the process.

Building MVP
A MVP was built if a proposed solution was demanded. A simpler MVP was in some cases built in order to pretest the solution. With this, potential customers could more easily evaluate their needs. However, as in Customer discovery, a MVP was only built when needed. By only building when necessary, a lot of time and money was saved.

Verify or pivot
Hypotheses were constantly being rejected or verified during the process. Different levels of verification were needed, depending on the area of the hypotheses. Some hypotheses were harder to determine if they were rejected or verified, and needed more testing than others. For example, the willingness to pay was an ongoing hypothesis with many different thoughts from potential customers. However, the willingness to pay was one of many assumptions that were changed over time as the MVP was improved and the business model changed.

The Medical device was pivoted due to potential consumer risks and a long time to market. Since this is a relatively new technology, there may be undiscovered long-term risks and concerns. It was a long time to market due to various regulations, permissions and research. As for the Health assistant application, it was first pivoted due to problems with regulations, which created problems for the product-market fit. The second pivot also occurred from not having a product-market fit, but this time was due to no interest from key partners.

The third business idea, Lean Invest, was verified in terms of a product-market fit. A large enough customer segment was identified as well as customer channels and a revenue stream. Lean Invest was also proven since it was believed to be "sticky" enough, as well as scalable to other investment markets. However, even though the way to reach the customers was known, the viral capabilities of Lean Invest were considered difficult to find. The regulation matter for Lean Invest was not considered as crucial as the other business ideas.

Realizing the importance of getting out of the building
As directed in Customer Discovery, customer interaction was widely used and valued early. The business ideas were mainly developed through input and feedback from potential customers and partners. They were also constantly being developed to better match the problem to a solution. The analysis of the problem mappings that were created during the startup case further indicated the value of customer integration. This was shown by relating the prioritized hypotheses in the problem mappings with the reasons for pivots for each idea. Since the mappings were created at the beginning of each idea, they could be related to the pivots made within the same respective business idea. In reality, the problem mappings did not correspond to the reasons for the pivots at all, which showed how wrong the hypotheses were before talking with customers.

The comparison further indicated that the hypotheses in the problem mappings needed to be more precise. This was also realized through interacting with customers and other stakeholders in terms of fast rejections of hypotheses. Inputs from people affected the development of the ideas the most. Table 16-19 shows our three top prioritized hypotheses in the problem mappings, and the reasons for pivots or main problems within each of the business ideas.

Problem mapping 1 - Medical device			
Priority		**Hypotheses**	**Reasons for pivots/Main problems**
1	Demand	Who are the target customers?	Potential consumer risks
		How much are customers willing to pay?	
		What value do we bring to the customers?	
		What problems do we solve?	
		…	
2	Technical function	How does programmed cell death (apoptotis) work?	Long time to market
		What temperatures are suitable?	
		What are other risks?	
		…	
3	Market	Who are our competitors and how are they performing?	Competition

Table 1 - Problem mapping 1, Medical device.

In problem mapping 1, time would have been saved if non-potential customers were also interviewed, for example, parents of younger children. One potential consumer risks in younger generations could be misusing the product to better their appearance. This might have been discovered earlier if parents with teenagers were interviewed. The importance of talking to various people was necessary to understand the product's effects.

Problem mapping 2 - Health assistant application part 1			
Priority		**Hypotheses**	**Reasons for pivots/Main problems**
1	Value proposition	What problems should we solve?	Regulation
		What value do we bring to the customers?	
		…	
2	Revenue streams	What value propositions would customers pay for?	
		How much are the customers willing to pay?	
		…	
3	Key partners	Who are our potential partners?	
		…	

Table 2 - Problem mapping 2, Health assistant application part 1.

In problem mapping 2, time would have been saved if the market and regulations within the industry were understood earlier. It was realized that within more restricted industries, such as health care, regulations should be investigated early in order to develop the business idea in line with the current system.

Problem mapping 3 - Health assistant application part 2			
Priority		**Hypotheses**	**Reasons for pivots/Main problems**
1	Key partners	Will national rate doctors exist in the future?	No interest of national rate doctors, the key partners
		If national rate doctors are not interested in a partnership, will this lead to a major pivot?	
		Which activities do partners perform that are important for us?	
		…	
2	Value proposition	Do our value propositions match with a large enough customer segment?	
		What other related problems worth solving exist in the emergency department that possibly could be solved externally?	
		…	
3	Partner Value propositions	What value propositions do we deliver to partners?	
		…	

Table 3 - Problem mapping 3, Health assistant application part 2.

In problem mapping 3, fewer building blocks should have been prioritized. Partnership was crucial for the current business model, and should have been more focused on. The most critical building blocks within a certain business model should be investigated in depth and focused on.

Problem mapping 4 - Lean Invest			
Priority		**Hypotheses**	**Main problems**
1	Value proposition	Are customers willing to pay for the value propsitions?	Channels - viral capabilities
		…	
2	Customer segment	Is the target customer segment behaving the way we thought?	Funding
		…	
3	Channel	Through which channels could we reach our target customer segment?	Regulation - Finansinspektionen
		…	

Table 4 - Problem mapping 4, Lean Invest.

In problem mapping 4, the first and second hypotheses were prioritized since a problem worth solving was already found. They were verified early but the other building blocks of the BMC were harder to define. The main problem for Lean Invest was defining the Channels and possible viral capabilities, which was in line with the third hypothesis.

The problem mappings showed how important customer and other stakeholder interaction is for the entrepreneur. All business ideas experienced different problems. A pivot was made for the Medical device due to the technology, which included the risk of abusing the product and long time to market. The first part of the Health assistant application, experienced problems within the industry and government regulations. As for the second part of the Health assistant application, the business idea was too restricted and depended on certain actors, the national rate doctors. The Lean Invest idea has defined a problem-solution fit, but the BMC needed to be developed more.

5.3 What additional activities were performed?

The second research question was to investigate what additional activities that were performed in the startup case, that is not found in the Effectuation or Customer Development approaches**.** Figure 16 demonstrates the distribution of activities related to Effectuation, Customer Development, and additional activities. A lot of time was actually spent on activities that were not connected to either Effectuation or Customer Development. In fact, almost 40% of the connections in the daily documentations were associated with additional activities during the startup case, which were identified during the content analysis.

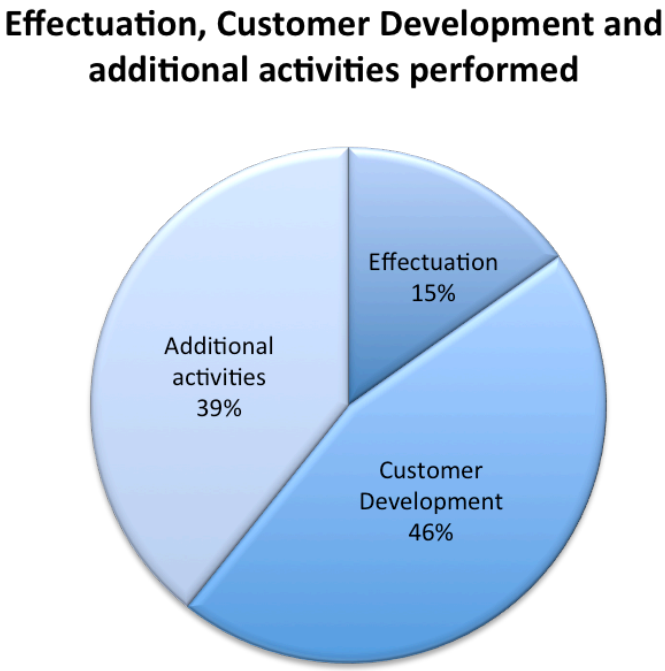

Figure 16 – The distribution of Effectuation, Customer Development and additional activities performed throughout the startup case.

The additional activities discovered included technology consideration, market research, regulation consideration, and the integration of viral capabilities and scalability into the early startup phase. Brainstorming was also seen as an additional activity, since it could not be clearly recognized within the hypotheses stating phase within Customer Discovery. The distribution of the additional activities is presented in Figure 17.

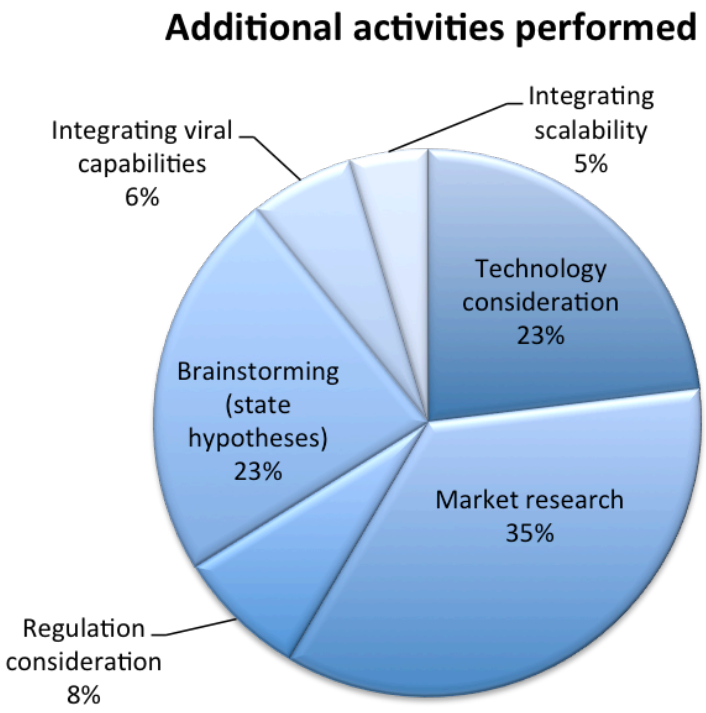

Figure 17 - The distribution of additional activities performed throughout the startup case.

5.3.1 Technology consideration

The most important additional activity in the startup case was technology consideration. Technology consideration was central during the startup, and is not included in either Effectuation or Customer Discovery, or even the Customer Development approach. The technology needed to be considered throughout the entire startup case.

By taking technology into consideration, it was believed to better match the product or service with the market. We experienced that technology analysis was necessary in the startup case in order to integrate the technical functionality of the product or service with the process of finding a product-market fit.

In the startup case, the technology base consisted of available technology, and was developed according to the product-market fit. The specific technology performance and functionality extents that belonged to the technology base were then evaluated. This relation was considered since the technical performances usually were linked to other performances, which make the tradeoffs between them important.

We then considered what contribution to user utilities within the technology could be provided. It was believed that a quality product would increase the product value only if the users could discover the benefits. In parallel with the user utilities, we evaluated the product or service diffusion among the users. We investigated the adoption level in potential customer segments to help understand the technology diffusion. For example, in the Medical device a patent research was performed to further understand the technology diffusion within existing technologies. Also, by stating substitutes or

competitors activeness in different areas, we were able to trace the sellers' technology diffusion.

5.3.2 Market research and regulation consideration

More market research was performed in the startup case than mentioned in both Effectuation and Customer Discovery. Market knowledge was increased in terms of existing patents, regulations, substitutes, and competition.

Regulations within the industries of the three business ideas were important to understand. However, startups should not focus too much on regulations in their earlier phases, since the beginning phases of a startup has a lot of uncertainties. The regulations in the beginning should only be made aware of and understood. The understanding of the regulations helped us develop the three business ideas, and was useful for approving the product-market fit. The investigations for substitutes and competitors were also found to be important, and were continuously integrated during the startup case. Since the product-market fit was an ongoing and changing process, it was necessary to continuously investigate other actors in the same and similar industries.

5.3.3 Viral capabilities and scalability

Ways to make the business ideas scalable was constantly searched for. This study only includes the earlier phases of the startup case, but was considered valuable to include the aspect of scalability. Even though scalability is considered in later phases in Customer Development, we decided to lightly evaluate the scalability of the ideas while stating hypotheses. This was experienced to be effective, because scalability could be integrated with the product development from start.

5.4 The combination of Effectuation, Customer Development and additional activities

The third and last research question was to investigate how the principles of Effectuation and Customer Development can be combined and complemented with additional activities. This section investigates how the findings in the analysis above are correlated.

5.4.1 Overview of performed activities

The distribution of the performed activities differs throughout the startup case. Table 5 illustrates the amount of connections found within the different activities in the content analysis.

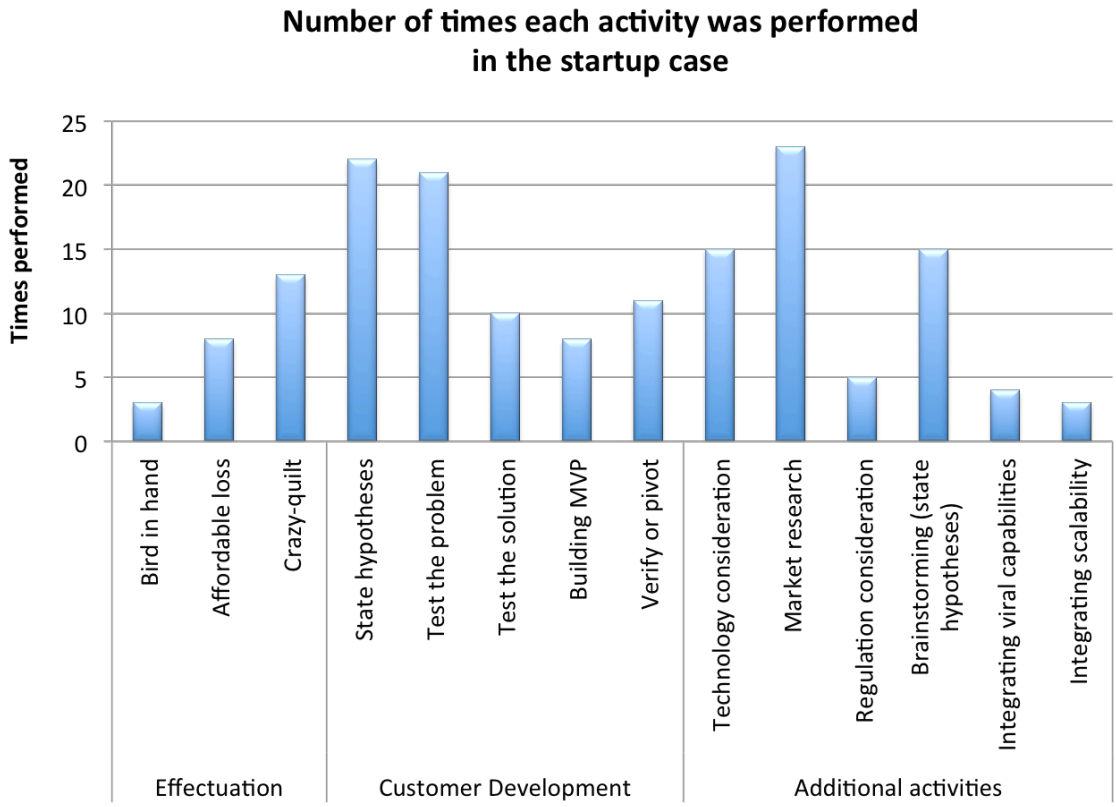

Table 5 - Number of times each activity was performed in the startup case, as recorded in the content analysis.

The most time consuming activities were found within Customer Development and additional activities. The way of thinking within Effectuation usually was not very time consuming; instead they were sometimes performed without knowing it. For example, the affordable loss principle and the crazy-quilt principle was often on our minds while performing the startup case.

Figure 18 shows another interesting perspective of the performed activities. Effectuation, Customer Development, and additional activities are instead presented in relation to each other over time.

During the startup case, activities within different areas were used in combination. However, there were often periods that were more or less intense for a specific activity. Some activities needed to be performed before others. For example, the competition and existing products within an industry were investigated before a MVP could be built.

The principles within Customer Discovery were performed in the order directed in the literature. The principles within Effectuation most of the time were performed when needed and not in direct order. Except for the bird in hand principles, which was mostly considered while stating hypotheses.

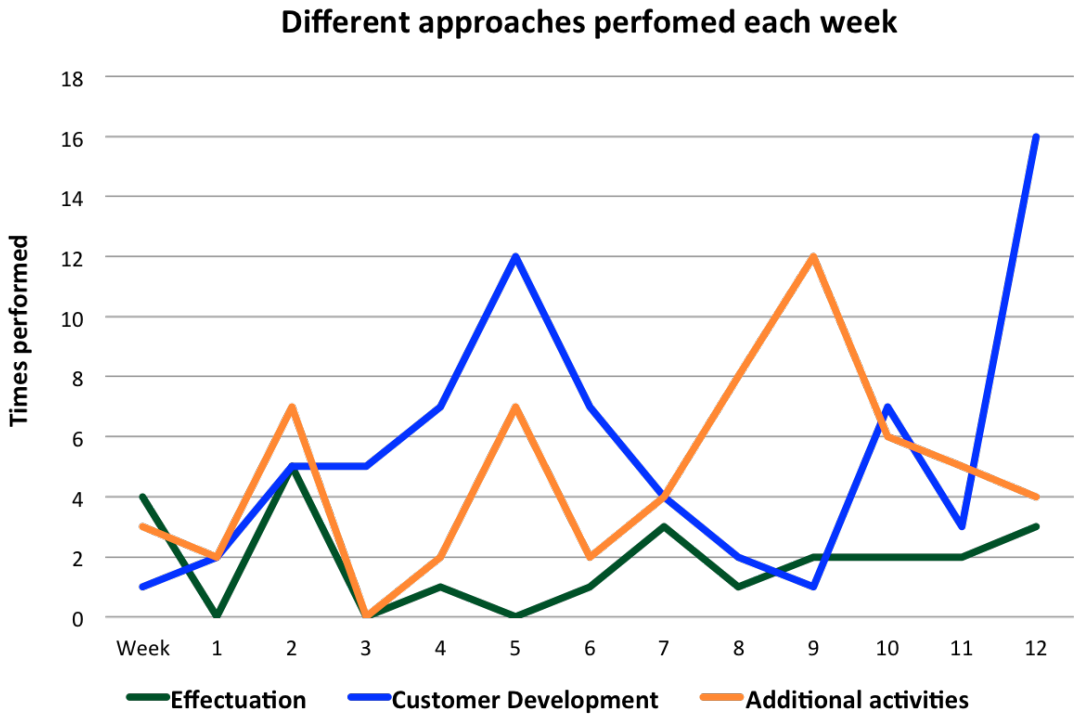

Figure 18 – The amount of times Effectuation, Customer Development and additional activities were performed in relation to each other throughout each week.

5.4.2 Similarity of the principles

Some principles within Effectuation were similar to those found in Customer Development. The principle of affordable loss in Effectuation was, despite brainstorming and stating hypotheses, comparable to the MVP-concept in Customer Development. A MVP was built in order to save time and energy, which corresponded to the affordable loss principle.

Both Effectuation and Customer Discovery value the entrepreneurial task of interacting with customers or other stakeholders. In Effectuation, the entrepreneur is progressing by making commitments, while Customer Discovery focuses on customer understanding. Both actions were useful during the startup case, but we had more of a focus on customer understanding. However, when talking to customers, competitors or potential partners, new means were continuously gained. The startup case was partly progressing due to these means.

5.4.3 Market research and regulation analysis as a complement

Market research is mentioned in Customer Development, but not in Effectuation. The market research in the startup case was time consuming, but was still necessary to perform continuously. The regulation and patent analysis was needed for product development and was at the same time useful for the business ideas and the understanding of the competitive environment. These aspects increased the understanding of the industry as a whole and should, when applicable, complement both the Effectuation and Customer Discovery approaches.

5.4.4 The need for technology analysis

Neither the Effectuation nor the Customer Development approach integrates the technology in business creation. The technological aspects were constantly considered during the startup case. It was experienced necessary to consider the technology in almost all building blocks of the BMC. For example, it was considered in the value propositions, cost structure, key resources, and key partners. Since all of the ideas within the startup case required technology integration, it was realized that technology analysis was needed.

6 Conclusion

The purpose of this study was to apply the approaches of Effectuation and Customer Development in a real time startup case, and analyze how they can be combined and complemented with additional activities. The results from this study are summarized in this chapter.

While analyzing the startup case, it was discovered that the process being performed was a combination of selected principles within the Effectuation and Customer Development approaches. The startup case used the bird in hand, affordable loss and crazy-quilt principles within Effectuation, as well as all of the principles within Customer Discovery. The principles were performed to various extents, and were used to fit the early phase for the startup case in this study. There were also additional activities performed to complement the approaches, technology analysis being the most important. See Table 5 for the list of the additional activities.

Customer understanding was also important during the startup case, since most of the hypotheses and pivots were created through customers or other stakeholders.

We now present a way to develop a business through optimizing the use of the approaches of Effectuation and Customer Development in early startup phases, along with additional activities. The proposed startup approach is presented in Figure 19.

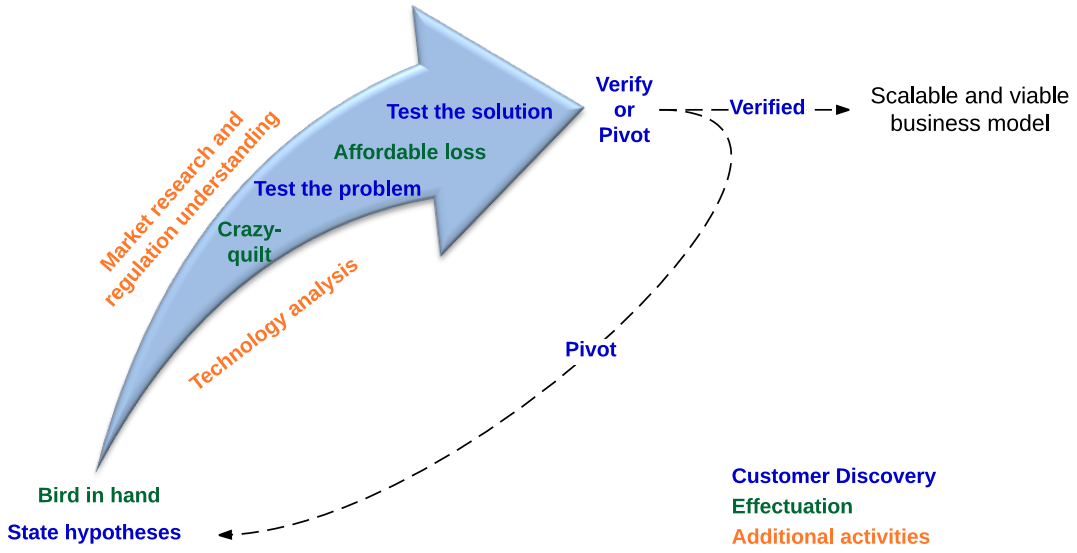

Figure 19 - The beginning phase of the proposed startup approach.

Chosen principles within Customer Discovery and Effectuation are being performed simultaneously and complemented by technology analysis along with market research and regulation analysis. The principles within Customer Discovery are explained in the literature as steps for the entrepreneur to execute.

It is recommended to do the same in the proposed startup approach. The entrepreneur should start with stating hypotheses and thereafter test problems and solutions before verifying or making a pivot. As for the bird in hand principle within Effectuation, it was often used in line with hypotheses stating. Therefore, it should be integrated in the hypotheses stating phase. The principles of crazy-quilt and affordable loss were not used in any particular order, instead they were needed at different times during the startup case. It is recommended to perform the crazy-quilt and affordable loss principles instantaneously along with the additional activities recommended. With this proposed startup approach, we hope to help entrepreneurs better perform a startup case and to make the process more clear and efficient from the start. We also want to contribute our findings from this study to the existing entrepreneurial approaches.

7 Discussion

This chapter discusses the findings from the analysis. Our personal thoughts and opinions are also presented. This discussion is not only based on the startup case and the approaches studied, but are also influenced by supplementary experiences. Different personal experiences with other startup companies and seminars with entrepreneurs have been considered as well.

7.1 Topics for discussion

What is the value of the proposed startup approach?

We believe that the proposed startup approach can introduce an alternative route for entrepreneurs to perform a startup case. Both Effectuation and Customer Discovery are great tools for starting a business. In this study, we combined certain principles of the approaches and complemented them with additional useful activities. By integrating technology analyses, it helps entrepreneurs to develop their ideas in line with technology and combine it with stakeholders demand.

The integration of market research and regulation understanding was also important in the proposed startup approach. However, these are not included in Effectuation and Customer Development, which we believe is necessary.

Starting with hypotheses or stakeholder interaction?

By interacting with various stakeholders and understanding the market early, we believe that more correct hypotheses can be stated in the beginning of the startup case. Hypotheses should be stated continuously and simultaneously during interactions with stakeholders. Both Effectuation and Customer Development includes early interactions with stakeholders, but starts by stating the own means or hypotheses. We agree with this, but want to emphasize the importance of starting with some stakeholder interactions to gain necessary market understanding before stating hypotheses. Blank and Dorf (2012) adds that sometimes it is required to conduct some research before knowing what to test.

The startup team

If the startup team does not possess the knowledge needed to build a MVP, they must search for ways to do so. We suggest that knowledge should be gained either through self-studies or by adding members to the team that possess the knowledge needed.

Viral capabilities

Viral capabilities are not presented in the proposed startup approach as an activity, since it was not covered thoroughly. However, we did realize the benefits of having viral capabilities integrated into the business model. We tried to create viral capabilities in the business ideas to help create more efficient buyers or seller diffusion. A suggestion to entrepreneurs is to find out what specific capabilities are important to their business idea, in order to increase scalability and future growth.

7.2 Future research

Researches have described the entrepreneurial process, but few have documented entrepreneurs during startup cases on a daily basis. This study is an empirically based experiment of the approaches of Effectuation and Customer Development. The combination of Effectuation - a research-based approach, and Customer Development - an experience-based approach, was interesting to analyze. We suggest that more research should be performed to further contribute and investigate the proposed startup approach. We further recommend researches to record and map startup cases, since it was very useful for us in terms of understanding the process for creating a business.

Integrating different technology analyses as a part of the proposed startup approach is for example an interesting area to research. We believe that this integration is an important part of the entrepreneurial process to develop the business model along with one's own technology base. Research that maps the interaction between technology analysis, and the Effectuation and Customer Development approaches, would be useful for entrepreneurs.

8 Epilogue

The ten-week startup program at Chalmers Innovation has been completed. We were awarded Best Team, an investment, and an inspiration trip to Silicon Valley. Lean Invest is now one of the startups situated in Chalmers Innovation's incubator.

The product-market fit and business model developed from the proposed startup approach was tested in the Customer Validation phase. It was quickly discovered that the customer segments identified needed to be refined. There is no time to teach customers the basis of stocks. Our first customer segment needs to be familiar with the common financial terminologies and behaviors of financial markets, e.g. brokerage fees, usual behavior of stocks, difference between mutual funds and stocks, and the difference between short- and long-term savings in stocks. Our service is based on long-term investments in stocks, and introducing it to people with no knowledge of the stock markets was not beneficial. These people are more interested in how much they are guaranteed to gain in short periods based on past performance. Since short-term stock behavior is mostly psychological, they will often question our service if a month´s performance does not meet their expectations, and will have a hard time seeing the value of our service. From this, our first customer segment needs to have basic knowledge of the financial industry.

The business model was continuously iterated in order to fail and launch fast. Everything that could be excluded from the MVP was placed aside, and all strategies that did not work were discarded right away. Cost versus time has been the variables that have mattered the most.

We will launch a new website soon, which will include four stock portfolios within two different markets. The stock portfolios' performances are free to view, and can be compared with comparable indexes and mutual funds with reinvested dividends. The distribution, the surveillance, and the optimization of the stock portfolios through financial mathematics can then be subscribed to for a small monthly fee. The subscribers are notified regularly with updates concerning their stock portfolios.

When launched, chosen customer channels will be tested. Tractions and developing our service will then be our main focus.

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Appendix I Content analysis diagrams

Week 1 20130902-20130906

Effectuation	
Principle	Times used during process
The bird in hand principle	1
The affordable loss principle	2
The crazy-quilt principle	1
The lemonade principle	
The pilot-in-plane principle	
Customer development	
Principle	Times used during process
State hypotheses	
Test the problem	1
Test the solution	
Building MVP	
Verify or pivot	
Other categories	
Principle	Times used during process
Technology consideration	2
Market research	
Regulation consideration	1
Brainstorming (state hypotheses)	
Integrating viral abilities	
Integrating scalability	

Week 2 20130909-20130913

Effectuation	
Principle	Times used during process
The bird in hand principle	
The affordable loss principle	
The crazy-quilt principle	
The lemonade principle	
The pilot-in-plane principle	
Customer development	
Principle	Times used during process
State hypotheses	
Test the problem	1
Test the solution	
Building MVP	
Verify or pivot	1
Other categories	
Principle	Times used during process
Technology consideration	1
Market research	1
Regulation consideration	
Brainstorming (state hypotheses)	
Integrating viral abilities	
Integrating scalability	

Week 3 20130916-20130920

Effectuation	
Principle	Times used during process
The bird in hand principle	
The affordable loss principle	3
The crazy-quilt principle	2
The lemonade principle	
The pilot-in-plane principle	
Customer development	
Principle	Times used during process
State hypotheses	2
Test the problem	2
Test the solution	
Building MVP	
Verify or pivot	1
Other categories	
Principle	Times used during process
Technology consideration	2
Market research	3
Regulation consideration	
Brainstorming (state hypotheses)	2
Integrating viral abilities	
Integrating scalability	

Week 4 20130923-20130927

Effectuation	
Principle	Times used during process
The bird in hand principle	
The affordable loss principle	
The crazy-quilt principle	
The lemonade principle	
The pilot-in-plane principle	
Customer development	
Principle	Times used during process
State hypotheses	3
Test the problem	2
Test the solution	
Building MVP	
Verify or pivot	
Other categories	
Principle	Times used during process
Technology consideration	
Market research	
Regulation consideration	
Brainstorming (state hypotheses)	
Integrating viral abilities	
Integrating scalability	

Week 5 20130930-20131004

Effectuation	
Principle	Times used during process
The bird in hand principle	
The affordable loss principle	
The crazy-quilt principle	1
The lemonade principle	
The pilot-in-plane principle	
Customer development	
Principle	Times used during process
State hypotheses	4
Test the problem	2
Test the solution	
Building MVP	
Verify or pivot	1
Other categories	
Principle	Times used during process
Technology consideration	1
Market research	1
Regulation consideration	
Brainstorming (state hypotheses)	
Integrating viral abilities	
Integrating scalability	

Week 6 20131007-20130911

Effectuation	
Principle	Times used during process
The bird in hand principle	
The affordable loss principle	
The crazy-quilt principle	
The lemonade principle	
The pilot-in-plane principle	
Customer development	
Principle	Times used during process
State hypotheses	2
Test the problem	4
Test the solution	4
Building MVP	
Verify or pivot	2
Other categories	
Principle	Times used during process
Technology consideration	
Market research	3
Regulation consideration	2
Brainstorming (state hypotheses)	2
Integrating viral abilities	
Integrating scalability	

Week 7 20131014-20131018

Effectuation	
Principle	Times used during process
The bird in hand principle	
The affordable loss principle	
The crazy-quilt principle	1
The lemonade principle	
The pilot-in-plane principle	
Customer development	
Principle	Times used during process
State hypotheses	1
Test the problem	3
Test the solution	1
Building MVP	
Verify or pivot	2
Other categories	
Principle	Times used during process
Technology consideration	
Market research	1
Regulation consideration	1
Brainstorming (state hypotheses)	
Integrating viral abilities	
Integrating scalability	

Week 8 20131021-20131025

Effectuation	
Principle	Times used during process
The bird in hand principle	1
The affordable loss principle	
The crazy-quilt principle	2
The lemonade principle	
The pilot-in-plane principle	
Customer development	
Principle	Times used during process
State hypotheses	
Test the problem	1
Test the solution	1
Building MVP	
Verify or pivot	2
Other categories	
Principle	Times used during process
Technology consideration	
Market research	1
Regulation consideration	
Brainstorming (state hypotheses)	3
Integrating viral abilities	
Integrating scalability	

Week 9 20131028-20131101

Effectuation	
Principle	Times used during process
The bird in hand principle	
The affordable loss principle	
The crazy-quilt principle	1
The lemonade principle	
The pilot-in-plane principle	
Customer development	
Principle	Times used during process
State hypotheses	1
Test the problem	
Test the solution	
Building MVP	
Verify or pivot	1
Other categories	
Principle	Times used during process
Technology consideration	
Market research	4
Regulation consideration	
Brainstorming (state hypotheses)	4
Integrating viral abilities	
Integrating scalability	1

Week 10 20131104-20131108

Effectuation	
Principle	Times used during process
The bird in hand principle	
The affordable loss principle	
The crazy-quilt principle	2
The lemonade principle	
The pilot-in-plane principle	
Customer development	
Principle	Times used during process
State hypotheses	
Test the problem	
Test the solution	
Building MVP	1
Verify or pivot	
Other categories	
Principle	Times used during process
Technology consideration	3
Market research	4
Regulation consideration	1
Brainstorming (state hypotheses)	4
Integrating viral abilities	
Integrating scalability	2

Week 11 20131111-20131115

Effectuation	
Principle	Times used during process
The bird in hand principle	
The affordable loss principle	1
The crazy-quilt principle	1
The lemonade principle	
The pilot-in-plane principle	
Customer development	
Principle	Times used during process
State hypotheses	4
Test the problem	
Test the solution	
Building MVP	2
Verify or pivot	1
Other categories	
Principle	Times used during process
Technology consideration	2
Market research	2
Regulation consideration	
Brainstorming (state hypotheses)	
Integrating viral abilities	2
Integrating scalability	

Week 12 20131118-20131122

Effectuation	
Principle	Times used during process
The bird in hand principle	
The affordable loss principle	
The crazy-quilt principle	2
The lemonade principle	
The pilot-in-plane principle	
Customer development	
Principle	Times used during process
State hypotheses	3
Test the problem	
Test the solution	
Building MVP	
Verify or pivot	
Other categories	
Principle	Times used during process
Technology consideration	
Market research	3
Regulation consideration	
Brainstorming (state hypotheses)	
Integrating viral abilities	2
Integrating scalability	

Week 13 20131125-20131202

Effectuation	
Principle	Times used during process
The bird in hand principle	1
The affordable loss principle	2
The crazy-quilt principle	
The lemonade principle	
The pilot-in-plane principle	
Customer development	
Principle	Times used during process
State hypotheses	2
Test the problem	5
Test the solution	4
Building MVP	5
Verify or pivot	
Other categories	
Principle	Times used during process
Technology consideration	4
Market research	
Regulation consideration	
Brainstorming (state hypotheses)	
Integrating viral abilities	
Integrating scalability	

Appendix II Daily documentations

2013-09-02
Researcher 1 & 2
Visited Kemi- och bioteknik at Chalmers and got contact with Britt Gabrielsson, scientist.
Emailed Sören for a meeting.

2013-09-03
Researcher 1 & 2
Emailed Britt to book a meeting.
Visited Maskinteknik at Chalmers. Booked a safety course to the lab of prototype (prototyplabbet) on Sep 5.
Planning report started.
Tried to visit Johanna Carlsson, doctor, at Läkarmottagningen Vasa viktoria. Still on vacation, will be back Sep 4.

2013-09-04
Researcher 1 & 2
Writing on planning report
Booked a meeting with Sören on tuesday Sep 10, 16:00.

2013-09-05
Researcher 1 & 2
Safety course to the lab of prototype was taken.
Writing on planning report
Working on prototype sketches

2013-09-06
Researcher 1 & 2
Called Läkemedelsverket about CE, EC etc.
Studying rules for classification of the product.
No answer from Britt since. Called Britt…..
Writing on planning report
Looking for potential prototype material

2013-09-09
Working on master thesis

2013-09-10
Working on master thesis

2013-09-11
Researcher 1
Worked on our planning report, did a pivot towards the new purpose
(Worked with our logbook)
Had an interview with Cristina Feldt at the clinic BonBon.

We discovered that we need to focus on a material that protects the skin. The liquids used together with coolcontour is a secret. Will water work or do we need a material that can be minus degrees before freezing? Furthermore, we need to solve the problem that the product needs to keep approximate -5 degrees during the whole treatment time.
We also need to know more about how the body reacts when freezing.
Pivots:

- More focus on understanding the process of freezing
- More focus on how the product will function

Researcher 2
An interview was performed with Christina Feldt (no background information) at BONBON about her use of CoolContour through PhotoNova, see Interview w/ Christina for more information. The interview was chosen by the interviewers to be focused on the company, the product including the biology and the customers.

Questions 1a-e, 2a, 2c-d,2f-h,3a, and 4b from problem map 1 were answered. The following statements were also cleared out:

- The differences between Derma & Fungera - coolsculpting/zeltiq, Coolcontour - photonova and lipocryo regarding leasing/buying, treatment temperature and the Swedish market.
- Very little marketing is being done about the technology. Most new customers that familiarize with the product have the same reaction: "why haven't I heard about this product?"
- The kind of freeze membrane that is being used
- Christina didn't know why 3-4 treatments per area are the maximum amount of treatments.

Some problems related to potential risks were discussed:

- Frost damage has been seen on one of Christina's customers at -10C on a skinny female.
- The technique does not work on everyone. However, it is hard to compare before and after picture since the result is shown after 6-12 (16) weeks and other factors of gain/lost weight could be involved.

2013-09-12
Working with the master thesis.

2013-09-13
Working with the master thesis.

2013-09-16
Researcher 1
Meeting with Britt Gabrielsson.
Presented the possible invention and discussed the medical parts of the idea. Risks were the main topic.

We need to understand the process better. We are still not sure about how the cells die, (programmed cell death or not). We also need to create a safe product, because of the risks for abuse at home for persons suffering from bdd. Furthermore, we discussed temperatures and frost damages.

We searched more for investment money.

Report writing.

Researcher 2
A meeting with Britt Gabrielsson at the department of food (livsmedelsavdelningen) at Chalmers was scheduled. Apoptosis (apoptos) and necrosis (nekros) were discussed and Britt believed that, by talking about the cooling technique, necrosis is occurred during treatment. However, according scientifically research from e.g. Stanford and company websites, apoptosis occurs during treatment. This should be questioned, but at the same time, the technique/existing products have been FDA approved. Another discussion with Britt involved the actual safeness of the technique. It is proven that no major risks with or after the treatments exist, except for some redness or bruisers. However, since the products have only been out for some years it is hard to actually state that there are no long-term risks. Another discussion was about the risk of abusing the product. Would it create a new trend where people "shape" their body in a more obsessed way? Would younger people, mostly girls, try to use it on their "baby fat"? If the middle hand (the clinics) is gone and anybody can buy it, would this be a good ethical product?

Since there is a risk with scar building after treatments on skins, Britt recommended us to further talk to plastic surgeries.

Potential scholarships to apply to were searched.

2013-09-17
Researcher 1
We talked a lot about the meeting with Britt and the potential risks and the problems related to the idea. The discussion was about the fact that there are many problems related to the idea. We are thinking about leaving it.

A new idea was discussed simultaneously, an app where symptoms can be mapped into conditions. People should be able to look at an animated body which could guide them into a set of options. In the end, possible conditions should be shown, as well as the probability that the person has it.

Researcher 2
The risks discussed at the meeting with Britt, were once again brought up and discussed between me and Nanna. It was realized what we actually did not want to join the particular industry of Medical device.

New ideas about medical apps/website where individuals easily can get help by typing in their symptoms or by picking it out by choosing the relevant part of a 3D animated

body. No major app was found in the Swedish market. The US market is larger, e.g. the app and website WebMD. A map of potential professionals within our circle of friends was made.

2013-09-18

Researcher 1

Worked with the report

Continued to develop the idea with the medical app and discussed several possibilities. Developed several strategies and variations for the app. We also talked to people we know about the product.

Researcher 2

Worked with the master thesis.

Worked with market research for the medical apps and similar solutions. A deeper research was made on WebMD, including the functions on the website, company information and patent research. One nurse, one doctor and another similar professional were contacted in order to get more information about existing medical apps and obvious/major needs.

Different app ideas were discussed between me and Nanna, see market research.

- Model 1 - Information based app for individuals
- Model 2 - chat feature app between individuals and nurses
- Model 3 - Medication based app for nurses
- Model 4 - Niche?
- Pregnancy and after giving birth app
- Travel app

2013-09-19

Researcher 1

Worked with the report during the morning

Had a meeting with Sören, which made us change to the new idea. We were already prepared for a change, so it felt good when it happened. During the meeting we discussed the different parts of the idea. It feels better to work with an idea that really helps the society and that satisfies a "real" need.

We discussed the idea further after the meeting and continued to work with the report.

Researcher 2

Had a meeting with our mentor today. Decided and confirmed the pivot, discarded the Medical device idea and kept up with the medical app ideas. Decided to start working on the chosen idea formulation, which needs to be more specific. First to interview and talk to are the potential end customers. Who are they? Start with around 20 interviews within in each customer segments.

PIVOT

2013-09-20
Researcher 1
Worked with the canvas, imagined the idea and discussed value propositions and main customer segments. We also discussed the other parts of the canvas. We are not sure about how to create revenue, but believe it will be easier solved if we create a really good and useful product.

We also discussed what problems to start with. If there is a need at all is an important question, as well as whom our main customers are.

Researcher 2
Wrote down the idea formulation into the categories of the business model canvas. A better understanding of, especially, the customer segments and value propositions were gained. A lot of time was also spent on key activities and key resources. A first problem mapping for the new idea of the medical community idea was made. The problem mapping was also categorized into the headlines of the BMC.

Additional conversations with potential customers were conducted in order to verify the value propositions better.

2013-09-23
Researcher 2
Worked with the idea formulation. First-phase interviews were conducted with an accounting clerk and a student.

2013-09-24
Researcher 2
Decided to name the idea Health assistant application. First draft of the idea formulation was done and problem mapping 2 has been started. Updated the report to the new business case.

2013-09-25
Researcher 2
Problem mapping 2 was completed and the idea formulation was updated.
A first draft of a BMC was also done.

2013-09-26
Researcher 2
Worked with the master thesis.

2013-09-27
Researcher 2
Worked with the master thesis.
A template for the second part of the diary was created in order to make the separate analysis more in accordance to each other.

2013-09-30
Researcher 1

We mainly worked with the idea formulation and the problems related to the idea. The idea formulation feels good and we have a clear picture of what the homepage will look like at this moment, but we are very much aware of that the picture we have now probably will change.

We also continued to work with the business model canvas.

A customer interview guide was created, where interview questions in different phases were put up to form a template for how the interviews could be performed. In the first phase, the problem will be investigated and confirmed, as well as if customers are prepared to pay for a solution. In the second phase, the solution/idea is discussed with potential customers and a MVP will be shown to evaluate and develop the solution.

It was mentioned that, during the interviews, different segments would be investigated to find out who the target customers will be.

Furthermore, we worked with the report.

Researcher 2
Idea formulation and the BMC were improved and better categorized. This has made the business idea easier to follow and much clearer. How to perform the interviews more efficient and in a more structured way was discussed. This resulted in a new customer interview template with relevant areas and questions. It was also decided to speed up the interviews. Interviews with friends will still be considered but the preferable ones are with other people and within the potential customer segments; parents, younger generations and busy people.

Problem mapping was improved and transformed into another structure. Discussions after each work moment were performed between me and Nanna in order to dissolve all misunderstanding.

2013-10-01
Researcher 1
Worked with the report. (Method and the properties of the diary, e.g how we should write it).

Another contact was discussed as a potential doctor to start with. We do believe that some of the doctors we know could help us for free in the beginning to test the service. That would be great.

We discussed and developed the business model. Different revenue streams were discussed. For example, the customer/patient could get the first minute for free, and then pay 10 krona/minute for talking to a nurse and 15 krona/minute for a doctor. This could make more customers try out the service. Furthermore, a premium version could be that if one pays 100 krona, s/he could get 100 minutes for free during one month. Three months could be a minimal limit for the premium version, to avoid misuse (that everyone buys the 100 krona/month deal because you reach 100 krona easily anyways).

An alternative business model could be to let the clinics pay us instead for the patients. The clinics would then be private clinics, who need patients and advertizing, like tooth doctors, chiropractors and others. The patients can get the consultation/video conversations for free and only pay for the visit if s/he is booking any, where we will get 20% of the payment. The patients could then book the visit through our homepage and get a small discount, (compare the business model to Groupon and Lets Deal).

Researcher 2
The outline of the diary was experienced to be repeating between the separate and the mutual parts. Therefore, a new template was created. The mutual part will from now on not be included in the diaries.

Further work with the method in the report was made. A more detailed way of how to perform the interviews, including whom, when and how, was decided.

A new idea of how to design and enable video conversation between professionals and end users was discussed. In order to attract end user to use the health assistant service, the first minute in the conversation planned to be offered for free. The user should only be charged from the second minute. An idea was to charge per minute, possibly around 15sek/minute. Another idea was to decrease the cost per minute after approximately 10-15 minute, in order to not make it too expensive. The pros and cons of monthly payments were discussed.

The BMC was improved but was it scalable? More interviews are needed. Do we need to have more niched business model? An alternative idea is to have a two-sided market, where the health care clinics (mostly private ones) are one of our customers. The health care clinics and professionals will then be categories into more specific specialties. Professionals in private sections within chiropractor, dental, PT, dietician, and similar services that offer consultation were now potential target customers.

2013-10-02
Researcher 1
Worked with the report, finished problem mapping 1. We decided what problems to start with.
We updated the business model canvas and the idea formulation.

Researcher 2
Worked with the master thesis.
Updated, improved and made the idea formulation more detailed. The corresponding BMC was also improved. Problems in current problem mapping were ranked.

2013-10-03
Researcher **1**
http://www.1177.se/Vastra-Gotaland/Om-1177/Om-1177/#section-4
This morning we found out that we probably can use information from 1177.se for our database. 1177.se and vårdguiden will be one unit in November.
We also found out that nurses on vårdguiden evaluate your need of health care.

We further thought about the newness with our product: that you will be able to talk to a doctor, that you could search by symptoms (and combine them) to find possible conditions.

During the day, we started to perform the interviews with end users, mostly students. We had a learning process and did many improvements and changed the interview guide. The interviews were semistructured, and we discussed different topics rather than specific questions.

The five interviews we did today indicated that the service needs to be free or have a low cost. Some were very interested in the idea, while others seemed skeptical. Information is easy to find on Google today, will a new way really be successful? One suggestion was to let the private clinics pay for the service, they would then be more competitive by offering an additional way of getting in contact.

One notation is that today's interviews almost only consisted of students, who probably not are our main customer segment. If the service were for free, they would probably be more interested.

Researcher 2

Vårdguiden - Stockholms län landsting and 1177 - Västra götalandsregonen will merge together this November into 1177 Vårdguiden. It was realized that anyone is allowed to use, link, cite shorter text etc. from 1177's homepage for free and legally. 1177 needs to be contacted for more information. 1177 health care consultancy service answers questions to people that calls, evaluate their need for health care, give them advices and refer you to the right health care department.

Another information source and website that potentially can be use as a complement to our health assistant application is varkupplysningen.se, which is focused on pain symptoms, both temporary and long term pain. Possible causations to the pain are identified from symptoms and information about treatments is provided. See http://www.varkupplysningen.se.

A more objective comparison between vårdguiden/1177 and our idea of health assistant application were made. What new features are we providing? What new value does our application create? How does their business model differ from ours? We believe to create value for the user with the option to talk and see a doctor, an easy way to find conditions based on symptoms, a easy web interface, an user account that saves history, to talk through a video conversation, to use and mobile app, and to be able to search by combining symptoms.

However, are customers actually willing to pay more to talk to a doctor instead of a nurse with the fact that the professionals still can not determine anything? Will the extra knowledge in doctors be enough for this guidance service? Or is the nurse's competence enough?

We also believe to create value for the professionals with the option to be able to work from home, the flexibility to work outside Sweden (required good internet connection), the no need to be connected to a call center, and to reach more end users.

Five interviews with end users at Chalmers and Gothenburg University were performed today. Different needs were shown depending on age and their life style. Some were willing to pay and some not, but everyone agreed on to have the search function for free. They all think it was a good idea but it was a solution for the segment that do not need to visit the emergency. An age difference was notice, younger student, in early 20's, did not have much to say since they could not refer to any experiences compare to older students. In general, the interviewees could agree on to pay for the video function with a small amount, maybe 50-100 krona. It could not exceed the price of going to the health care. One interviewer could see hospital and private health care clinics as investors.

A new interview guide template was created after the two first interviews.

2013-10-04

Researcher 1

Worked with the report.
Talked to friends about the idea and got some confirmation, but nothing new.

Researcher 2

Worked with the report. Talked with students at Chalmers about the health assistant application. Got some similar inputs as earlier conversations with friends. The participants brought up questions concerning what doctors and nurses were allowed to say through phone/video conversations. Are they allowed to prescribe medicines?

2013-10-07

Researcher 1

We talked about the idea and called potential stakeholders. Video conversations might be hard to finance. Patients do not want to pay for the whole salary for a doctor. Doctors do not want to work for free, or for a low cost. At the same time, clinics see themselves as the first contact to health care. They do not believe that video conversations could replace visits, since the patient needs to be present, even for a simple evaluation. At the same time clinics want many listed people. The video conversations could provide this, by letting the doctors make appointments. In that way, some of the patients might change clinic.

Specialist health care could be an alternative. A referral (remiss) could be offered through the video conversation, if it is permitted?

Furthermore, could dentists be an alternative, or is this service optimal for the beauty industry?

Is it possible to make money through advertisements that could cover the costs for salaries, and all the other costs? If a conversation costs 50 krona for the patient, this might be possible. To be able to do this, we will probably need advertising income before we start up the video conversation possibilities. Otherwise, we need to find

doctors who could work for free for a while, until we got visitors and advertising income enough to pay them.

We further did four interviews with end users at the train station. They had different opinions about the problems and solutions related to health care, but a problem that always occurs is the queue and waiting list problem. Another formulation is the lack of time and money. None of the interviewees were enthusiastic over the symptom checker, information through symptoms can already be found on the Internet. Maybe, it could be useful if it at the same time works as a coordinator that told you where to turn with special conditions.

Most of the interviewees were positive to video conversations, but at the same time they were not sure about if they would use it themselves.

Researcher 2

Different professionals segments were discussed. They were listed and we had conversations with different health care clinics, such as primary health care, BUP and orthopedics. What professionals will consider using our service? The primary health care (nötkärnan) that we were in touch with today showed no interest in the service. They believe that a service similar to ours is "ok" but not useful for primary health cares. They see the primary health care as the first gate for customers to pass through. Hence, the customers do not need to be directed before visiting the primary health care. The customers are after the visit directed to another department if needed. Nötkärnan also wants the first visit to be physical at a clinic, if possible blood tests are needed. Video conversations for follow up conversations for patients were not interesting as well.

Interviews with potential end users were also made. Two female and two males were interviewed. The opinions and answers were mixed. The most valuable thoughts from the interviews were first the nurse's opinion about video conversations with doctors. She believes that some video conversations with doctors could be count as normal visits with doctors. It all depends of course on the type of conversation, but it could definitely be replaceable. She also thinks that it is possible for doctors to make referrals to other specialists through video conversations. She thinks "why not" and that video conversations will save time for the end users. Some may not need to take the trip to the health care center and wait in the waiting room. The second valuable opinion from the interviews is the fact that the search function and the information available on the Internet might already be good enough and even too good. One opinion was that it is too much information on the Internet, which make it hard to find what you are looking for. A better search function with e.g. a check your symptoms service, might not just give the user better information but it could maybe ease people to diagnose themselves, which is not wanted (especially not from the health care's point of view).

Different business model for the health care application were discussed. One was if we should offer an "another way for end users to get a remiss" from a doctor if they are using the video conversation service. This focus resulted into following questions; are doctors eligible to form a remiss based on a conversation through webcam? How does the remiss-industry look like? The idea is to offer end users advices from doctors and if

needed a remiss to a specialist. Doctors should also be able to call 112 if necessary.

How we should get financed was also discussed. What health care clinics see the most use in this service? Why should they use this service and what are needed to meet their needs?

2013-10-08

Researcher 1

We interviewed different health care departments today to find out more about the interest of video conversations with patients. There were skin doctors, tooth doctors and others among the interviewed persons. After today, it seems like health care can not afford to offer the service for free and end users do not want to pay for the service. If this is the case we will need alternative revenue streams. We might be able to charge for the service when it gets more popular, but until then, we need to be able to test it to investigate functionality and popularity.

Apotek and other medical actors could be interested to invest in the service as advertisers, but we need to find out more about this. We believe it will be easier to find sponsors if we already have a large customer base, maybe through the check your symptom function.

Marianne Lindfors, vårdenhetschef at the emergency centre at Sahlgrenska was also contacted. Almost all of the end users have mentioned the problem with the long waiting time at the emergency centers and we believe video conversations possibly could calm some of the unnecessary cases and make them stay at home. We still need to confirm that there are many unnecessary cases.

Furthermore, BUP were discussed as one potential user of the service. Video conversations could work as follow up visits or complements to the ordinary system.

We developed the idea to include emergency calls (112) and a timetable, showing only the times available. We also discussed the possibilities of finding out more about the interest for the service through questions on websites and discussions on blogs.

Idea - online health care centre

Researcher 2

Professionals in different private health care departments were contacted, such as skin specialist and dentists. The most important information from these interviews was that the private health cares are either too limited and too dependable on the paying customers that they can only considered paid consultations, or have enough customers that they rather not consider free consultations. However, the skin specialists are more positive for our service than the dentists, which do not see much use of the service. The skin specialists were familiar with the existing service where pictures on the skin can be sent to specialists for evaluation. They confirmed that it was possible to evaluate skins through pictures. It was also confirmed that a service that offer video conversations between new patients and the skin specialist was interesting, but only if the users paid

for every online visit through video conversation. These professionals and health care departments are probably not our target customers and may only offer valuation for free or for a cost if more value exists. Will they reconsider if our service included a user base?

We should contact the health care emergency. Find out what visits in the emergency room that actually can be replaced with a video conversation. How common are these visits? Is there any related information that needs to be spread out?

Should Goran Delic, director of department of BUP be contacted? BUP increased care guarantee (vårdgarantin) from 60 to 30 days in 2011. The increased care guarantee has further cause the referral process (remissprocessen) to be better. BUP has in cooperation with primary health care and the social service been able to send the right patients to BUP. However, in early 2011 there was a problem concerning the referral of right patients to BUP. What are the differences of the referral process before and after the improvement? Are there any further needs of improvement? Will our video conversation service be useful for follow up meetings? Is there a risk that the confidentiality will be ruin by non-personal meetings? Hence, since the online camera only shows a limited part of the patient's room, are there any risks or rules that should be considered?

An online booking system should be used from where the end user can book the preferable time. All available times for the suitable professionals will be shown. Hence, no other time but the time offered by the professionals will be on the schedule in order to highlight the available time. See:
https://eservices.profdoclink.se/TimeBook/TimeBooking1.aspx?InstanceID=876577f0-1756-47c4-9baf-5b34ba8209d4

2013-10-09
Researcher 1
Prepared the meeting, discussed the idea and problems related to the idea and the master thesis

Meeting with Sören:
We discussed different problems, if they are worth solving and what solutions they may have. We also talked about what we have to do in this early stage and what we have to find out to get forward. Furthermore, we should decide what our service should look like.

We need to find out what creates value for every stakeholder involved. With that information in mind we can form a functional service. This needs to be done as soon as possible to be able to build the MVP. Furthermore, we need to know everything about the rules for health care centers and their business model and revenue streams.

The ideas discussed were the web based health care center, and a website that uses the existent health care centers doctors in the service. If we use the existent health care centers, we get access to their customer base. How exactly should this be done?

Worked with the report and the planning report.

Called Umeå neonathal department about the video conversations. A nurse confirmed that they have had video conversations for parents that are sent to other hospitals. The parents could then talk to the employees at the new hospital, to get calmer and feel more secure. The video conversation was a project at the hospital, included in the ordinary work schedule. (There was no payment for each visit). Furthermore, she liked the idea and believed video conversations could be useful for other areas, but phone calls is good enough for them when asking patient how they are doing at home.

Furthermore, we found information about the payment system for health care centers Västra Götalands regionen. They are payed 527 krona for each visit from HSK and 200 from the patient (100 if the patient is listed, then the health care center gets more money from HSK each year instead). The visit lasts for approx. 25 min. For a phone call, the health care center gets 143 krona, no time recommendations were set.

Researcher 2
A supervisor meeting was held. Since we are making a lot of pivots in this early phase, should we consider more than three problem mappings? The discussion about the case was mostly about what we so far have gain from the interviews we made. The topics during the discussion can be explain by following questions; what have we found out?, what do we need to know more about?, what new problems do we have?, what value do we create and how do the different stakeholders response to that?, what different option do we have concerning public and private health care centers?, etc.

We need to make more interviews with different stakeholders, find out the actual value and track down the same value to other stakeholders. The MVP needs to be done and tested. Interviews at the health care center need to be with both doctors and directors.

The current website of the service is a first site with two simple options, where the patient will be asked to choose between “advises through video conversation” and “e-health care, a symptom checker”. Social security number or similar information will be asked in order to track relevant information, e.g. where the patient is listed. If the doctors at the patent’s listed health care center are unavailable, the patient will be offered to talk to one of our doctors or nurses online. The value created here for the patients believe to be the option to talk online to our doctors if the doctors at the health care center where they are listed are unavailable for video conversation. Will this also create value for the doctors at the health care? Will it create value if our doctor could help their patients through video conversation if they are unavailable?

The process and meaning about the daily diary was also mentioned at the meeting. The diaries have by time become more relevant and important for our study. By writing down what we have done a summary and documentation are being done. It has leaded

us to new discussion about the findings and new ideas. Then by relating the documentation to the theories, we have been forced to analyze the findings and work process continuously.

A new Gantt chart was also created.

2013-10-10

Researcher 1

We discussed what brings value for all stakeholders. The customers get easy access to doctors, for free. The doctors might get more time per patient and the health care center could get more listed patients with this function, since they have the advantage of being more available than other health care centers.

One feature could be that only listed patients could call our doctors as well. Then the listed patients really get an advantage, which increase the incitements to get listed at the health care centers we cooperate with.

Our main end users could possibly be low-income persons or persons that live far away from a health care center. Then, the customer segment would be health care centers with large population areas and health care centers in low-income areas. (Low income because the service is for free if you are listed).

Created interview templates for doctors and health care center owners. Discussed what we need to find out of different persons/stakeholders.

Looked for health care centers to call, but decided to start the interviews tomorrow, due to the lack of time.

Started to search for statistics about illness and conditions, talked about asking the doctors about their view before we analyze all the data available.

Researcher 2

A long discussion about the value propositions and customer segments was held. What value will the service that we want to provide actually create? How should our MVP look like and what features should it first consist of? A plan is to offer the symptom checker to all users. The possibility to book an appointment to a doctor at a health care center or a doctor that is provided by us will only be possible if the user is listed. We believe that we need to charge the health care center for the service and for every video conversations made, which are paid by the government. However, in order be able to have this service as a paid service, at least at the beginning, more value need to be created for the health care center. The value we want to create by only offer video conversations to listed people, is that the website will only include the health care centers that are paying for this service. These health care centers will be shown on the website and all free users will be asked if they want to be listed there instead, in order to access to the online health care. Hence, the value created for health care centers are to be more accessible for existing patients and to be shown more for new possible patients. We further believe that if enough users are using our service, the more important it will

be for health care centers to offer the service. These new hypotheses have created new questions that need to be investigated.

The interviews are now decided to be performing within more specific customer segments. New interview templates are created to directors and doctors at private health care centers with public funding and prices to patients.

ZoomCare and their business model is investigated.

2013-10-11

Researcher 1

We started the day by calling health care center managers and physiotherapists. We asked about their business, their problems and things that could be improved and what the patients appreciate with their work. Furthermore, we asked about how they liked giving advices through phone calls and what they are allowed to say and do during a phone call. Video conversations were also discussed. No one of the ones we talked to was very enthusiastic. They think it is good enough as it is.

It was hard to get in contact with people. Managers for health care centers are most often doctors themselves and are working at the center as well as others.

We found out that referrals and recipes can be given through phone calls. We also found out that most of the phone calls were very short, often not longer than a minute, (according to one of the sources).

We felt that the idea needed something new to satisfy the health care centers and discussed the business model. Once again, we talked about having our own web based health care center. We could then offer health care for free, and earn money through our listed patients. If the patients need to see a doctor in real life, we will send them over to one of our partners. We want them to really feel that they benefit when being listed at our web based health care center, so if they need to see another doctor, we will pay the extra fee for not being listed at that place, up to three times. We will still earn a lot of money from them because they are listed at our business.
When starting a health care center, you need to offer certain services, such as a place for examinations and visits. We will not do that, so one question would be if it is enough to let our partners do that. We got the numbers to the persons responsible for those types of questions in Västra Götaland and will call them on Monday.

More information was found about health care centers and regulations for starting one. We will read it thoroughly when we have time, the most important question right now is if it is permitted to have our kind of business at all, and if we can have listed patients like an ordinary health care center.

Furthermore, we need to ask end users about the idea. Will people call through Internet if it is free? Will our main customer segment be people with low income?

We get more and more confident in what problems we should solve, and what stakeholders that can benefit from it.

Researcher 2
Two different potential customer segments were interviewed today, physiotherapists and private health care centers (vårdcentraler) with public funding. The professionals in physiotherapist and directors at health care centers were the only ones that we approached to today. Neither segment saw enough value in video-based conversations with their customers. Even if more customers were wanted and even if there was a value in the service, the interviewees could not see themselves using it. The majority did not experience enough problems to consider using another way of communication with customers other than the existing ones.

The idea was to offer our service for businesses, such as health care centers. A service that could work as a complement to the existing communication services with customers. Our own doctors from our service will then be offered to help people that are already listed at the health care centers. This will be hard to do if the value of offering the video based service is too low. We understand that the value towards health centers and professionals will be increased if we also could offer a big user base. We will continue talk to more professionals within these customer segments before making any statements.

However, more research was made on how the system actually works for private health care centers in Västra Götalandsregionen to start with. What it takes to start one and how the funding works. The business model here is related to a previous model where we offer an electronic health care centers where our own doctors can make referrals, recipes and advices. How much is every listed person worth for a health care center? Maybe it is possible for us to offer a health care online based on only the funding from every listed person? The service for users will still be the same but we will now not offer video conversations to the place where the user is listed. Instead it is require to be listed at our electronic health care centers. In return the users will get free video conversations unlimited with general doctors for referral etc. and eventual also to specialists. They will at the same time be able to visit any health care centers they want for the price of being listed. Hence, the differ between listed cost and unlisted cost for user will be paid by us. Since we do not have any receptions or similar cost related resources, we believe that we can cover the payment of the small (compare to the funding one can get for every listed patient) cost for user if they are listed at us and need to visit a health care center. The total value will be: by being listed at our online health care centers, they will get free video consultations, chance to get referral/recipe without visit a health care center and to be pay the “listed price” at any health care centers. However, this depend on if we can offer users to be listed on an online health care. Vgregionen has been contacted and will be followed up on Monday.

This business plan does also depend on if our business can stand for all the requirements to open a health care center, see
http://www.socialstyrelsen.se/regelverk/privatvard and

http://www.vgregion.se/sv/Vastra-Gotalandsregionen/startsida/Om-Vastra-Gotalandsregionen/Regionmagasinet/Regionmagasinet-nr-2-09/Mer-fakta-om-vardvalet/.

The fact that a health care has to offer a set of treatment has been discussed and it should not be a problem to cooperate with other health care and offer some treatments through them. This is still unclear and will as well be followed up on Monday.

2013-10-14

Researcher 1

We discussed different alternatives and business models this morning. We further read about the regulations for starting a health care center. It seems like much more will be necessary to start one, but we do not know for sure. One of the health care centers called consisted of a doctor and his secretary. Where does the limit go to get listed patients?

We tried to call Anna Kahn, Per Olof Olofsson and Camilla Eriksson at Hälso- och sjukvårdsnämndernas kansli, Göteborg, but no one of them answered.

We do not believe it will be possible to create a web based health care center, and be allowed to have listed patients and get money for them. If not, how should we then form our businesses?

We furthermore talked to a health care center to get more information about listed vs. not listed patients. Not listed patients do not have the same possibilities to visit the health care center.

Researcher 2

Try to call and reach the chancellery of health care Vgregion (hälso och sjukvårdskansliet). Three different professionals were called several times during the opening hours without any luck. The reception was also unreachable.

A health care center was contact for basic information about patient listing. The prices for listed and unlisted patients have now changed to 100 SEK respectively 300 SEK. It is now three times more expensive, instead of twice as expensive, to be unlisted. It is also only possible for listed people to make appointments at their health care centers. An unlisted user can only get an appointment if time is available. This was applied at all health care centers.

More information about the rules of starting a health care center was found, see Krav- och kvalitetsbok VG Primärvård 2014 and 2013 for more information.

The idea of almost only being supported through listed users by the government was discussed. We need to investigate if it is possible to open a web based health care center and if user can be listed at an online health care.

We also need to find out what end users value the most. Do they value the fact that they can contact and communicate with a doctor online for advises, referral etc.?

If it is not possible to be supported by the government, what value propositions would health care centers be willing to pay for?

2013-10-15

Researcher 1

We started the day by trying to get in contact with someone at VGregion. They were hard to reach, but after a few calls we got to talk to Stefan Bengtsson at vårdvalet. His definition of a health care center was a place with doctors. He would not approve a health care center if it had not got a local to act in. Furthermore, it would be hard to satisfy the qualifications without a place to be in.

We discussed the conversation and decided not to start a health care center by ourselves. If we can not have any patients listed, it will be hard to finance the idea.

We continued to talk to health care centers and asked them more general about their problems in their daily work. Lack of time seems to be an ordinary problem. Most of the ones talked to would also like to have more listed patients. It is a tradeoff between lack of time and the numbers of listed patients. Listed patients need to be taken care of, that is the responsibility of the health care center.

We thought about the value propositions for the idea. Could video conversations save time for the centers? It should be possible if our own doctors handle the conversations the centers can not take care of. Furthermore, could our service increase the numbers of listed patients at a certain center? Probably, if the service only is available to people that are listed at the certain centers.

We tried to call health care center chiefs to verify and develop our idea, but they are hard to reach.

An interview indicated that video conversations could be a new sjukvårdsupplysningen, which he thought was unnecessary during daytime, but he did believe in video conversations as a future function. We started to think about the product as a standby service, that could be open between 5-10 pm and during weekends.

Researcher 2

The department for questions about “vårdvalsmodellen” within VG primärvård, was contacted, where we finally were able to talk to Stefan Bengtsson, the vice director. The most important information from this conversation was that he personally would not approve a health care center without e.g. an own reception. Therefor it is not possible to cooperate or offer someone else’s reception as a part the own health care center. It is realized that our business model might work best as a service leased to and bought by the health care centers. This has led us back to see health care centers as our customers. The service should be offered for free for end-users.

Phone calls were made to several health care centers in order to find other problems, problems that currently prevent the centers to function efficiently. We identified two

possible common problems or needs within health care centers. The continuously lack of time was one problem. There was not enough time for each patient's visit (either through phone and regular visits) and a queue, especially between 8-9 am, was always occurring. Doctors' times are valuable and patient visits are time consuming. The second problem was the amount of listed patients at the health care centers. The more listed patients a health care center has, the better. What was the negative effects of having too many listed users at the same health care center? How many listed patients were optimal?

We see a possibly trade off. We could offer a service where time could be save by letting doctors use our service and video conversations for follow-ups visits. At the same time, it would make the health care center more available. If the doctors employed by us could take care of e.g. phone calls, will that save the doctors at the health care centers time while the number of listed patients could increased at their centers? Will the availability of this particular health care center be increased? Would more people list themselves at health care center that include our online service?

These questions were asked and discussed with health care centers. The most important feedback was from Per Olof Otterberg from Cityläkarna Borås. Among other good thoughts, he discussed the reasons why vårdupplysningen was implemented, its goal and its results. Vårdupplysningen was offered to make health care more available for all users. However, besides making the health care more available, it has also created another step for patients to consider and go through. Many patients that call to vårdupplysningen are recommended to visit a health care center and most of them do. Hence, more people are now seeking for help for smaller conditions than before. Per believes that vårdupplysningen during the opening hours of health care centers is not necessary. Vårdupplysningen is necessary and work well when the health care centers are closed and when "jourverksamheten" is open. Furthermore, Per believes that a service that will increase accessibility for patients will be needed if it does not become another vårdupplysning.

2013-10-16

Researcher 1

We had an email conversation with our contact at Vårdvalet, Stefan Bengtsson, and found out that the compensation for visits and phone calls only concerns "taxeläkare", a special group of doctors who are private and do not have a health care center. Health care centers get compensation for the time they spent on their patients divided with the time available, the coverage.

It was hard to understand exactly what a taxeläkare is and what rules and regulations they have, but we found some information, which lead us to a new pivot and a new business model canvas.

The idea will be to offer the system and service to taxeläkare for free, if they are available for X hours a week in return. They could then get more customers and market themselves at the homepage. Furthermore, they get public compensation for the calls. The end users will be able to reach a doctor at home, for free. Furthermore, they will be

able to do this at evenings and weekends when their ordinary health care center is closed and there is a long queue at the emergency health care center. They could also decide which doctor they want to reach.

We then earn money from advertisers. This is done by creating a big user base through the conversation offerings and the symptom checker. We further plan to use the doctors existing user base when testing the service.

Researcher 2

The term national rate doctors (taxeläkare) and the associated regulation were investigated. The term was mentioned by Stefan Bengtsson, which we have been in contact with. It was found that public and private (with public regulations) health care centers did not necessarily get paid for phone calls with patients. The public compensation was instead calculated into their work hours. It was confirmed that the sheet about the doctors compensation (Läkarvårdersättning), where e.g. phone calls to patients were financed by the government, was not included at all in the public/partly public health care centers' compensation. Instead, Läkarvårdersättningen was aimed for the national rate doctors and national rate nurse (taxesjuksköterska), which were completely private doctors and physiotherapists. In order for them to get compensation according to the national tax (nationell taxa) a cooperation arrangement (samverkansavtal) with the county council (landstinget) are needed. However, if the county council has enabled health care choice (vårdval) outside the public primary health care centers and that the specialty of the applicant (the national rate doctors) is already included in the health care choice a cooperation arrangement can not be approved. Another important agreement was that the national tax could only be connected directly to doctors and physiotherapists.

This has led to a potential reformation of our service. It will instead support as a multi-sided platform, where two markets will be offered to use the service for free. The user base consisting of end users will be offered, as discussed before, the free service of system checker and the opportunity to talk to doctors. The value propositions for the end users will further be the same as earlier. The other side of the platform will be national rate doctors that also will be offered to use the service for free. The value propositions for the national rate doctors will be marketing opportunities and to reach customer nationwide, another work opportunity, a new channel to reach customers, and the access to the user base. However, a large user base could not be offered in the early phase. The plan is to start with existing national rate doctors and their existing user base in order to test the service. The whole idea is to have national rate doctors use our service for free and get compensation as usually through the national tax. Hence, we will not be involved in their paying system. This is also considered since the national tax can only be referred to doctors or physiotherapists. Our revenue stream will then to start with be covered by advertisements, see BMC - e-läkare.

New hypotheses based on a different value propositions towards national rate doctors were stated. The related BMC has the same value propositions for end users, except that we might be focusing on the closing hours of the health care centers and work as a

complement to Alléjouren and vårdupplysningen. These hours are more in need of our service and are more relevant to start with.

2013-10-17

Researcher 1

We tried to find information about taxeläkare, but we could not reach any one of them. No one answered the phone calls. We decided to visit some of the clinics tomorrow instead. They probably do not have anyone that could answer for them.

Researcher 2

The whole day was spent to find and call national rate doctors in Gothenburg. Unfortunately they were really hard to reach and were mostly unavailable.

Worked with the master thesis.

2013-10-18

Researcher 1

We finally got to talk to a private doctor. He had enough of patients already and did not believe in the idea. He mentioned that it will be very costly to have doctors to answer phone calls instead of nurses. He further believed that 1177 is good enough and that it will be hard to keep up the availability if a lot of people are offered the same service.

We tried to visit some of the private clinics, to reach some of the ones we have been trying to call, but we did not get to talk to anyone anyway. One clinic was closed at fridays, another did not have any reception, a third had moved, and so on. The next step would be to talk in messages at answering machines, and hope that they will call us back.

We worked with the report. We also tried to develop the idea further and thought about other problems and solutions related to health care. We know that we need to talk to more people to be able to do meaningful pivots, but they are hard to reach. We eventually have a new contact, through our old supervisor for the bachelor thesis. The contact has been a chief at the emergency health care in Gothenburg. He should have some good information for us.

Researcher 2

One national rate doctor was available through phone today. According to him, it was easier to get a hold of private doctors/national rate doctors than doctors within the public health care. However, we have not experienced it to be easy to get in contact with national rate doctors. Almost 25 phone calls were made with only 2 responses. Three offices belonging to national rate doctors were visited today, but unfortunately without any luck. Appointments need to be done before a visit, since most offices of national rate doctors did not have any receptions. This means that we needed to contact and reached them by leaving voice mails on Monday. Since it was hard to get contact with any of them and since they seem to be unavailable at most time, it was questioned if they even have time for our service.

Phone calls to emergency departments needs to be contacted on Monday in order to find out other associated problems. We hope get in touch with Fredrik Bååthe soon, the former head the emergency department. He is currently working at Sahlgrenska and Chalmers. Torbjörn Jacobsson referred Fredrik.

More conversations with end users were made and new value propositions hypotheses were stated. The information about the waiting time in different emergency receptions was found as a problem.

Other business ideas were discussed. We talk about health care, training and social apps.

2013-10-21

Researcher 1

We contacted Fredrik Bååthe in order to find out more about the emergency health care, but he did not answer yet. We also looked for other problems related to health care. Taxeläkare do not seem to be an innovative group of doctors. The idea with them as our partners does not feel as good as before anymore. We will contact some of them tomorrow anyway to be sure about our opinions.

Some of the other problems are that it is hard and complicated to search for health care, that the health care process is slow and dispersed. A solution could be an app where you can search for health care with different priorities, for example "the best health care", "where you get to see a doctor immediately", "shortest emergency queue", and so on. Would this be a help for people?

Another idea was discussed, a social game where you compete against your partner or friends about who knows the most about the other. Questions are asked about favorite colour, different skills and personality, depending on if you choose to compete in the partner-, friend-, work colleague- or other category. You have to answer the questions both for yourself and for your competitor, and the one with the most right answers, on the shortest time will win. Other aspects might be included in the result as well. Furthermore, a toplist will show who knows the most the best. Other qualities might also be graded and put on top lists, for example the one that the most knows, most friends, etc. Further details were discussed as well, but we believe that we will have to ask people about what they prefer in the game before speculating too much.

Researcher 2

The cooperation with national rate doctors begins to feel more and more difficult to realize, since most of them are older, used to the old system and seem to be against changes. Nevertheless, other national rate doctors will be contacted tomorrow. We need more information from directors or other higher professionals at e.g. emergency departments. We need to confirm the problems we believe to exist. An attempt to book a meeting with Fredrik Bååthe was made, in order to get more insight of problems within the emergency department.

Other ideas have been discussed. One is about an app made for competition between two or more people, similar to Quizkampen. The questions will consist of information

about players themselves. The categories available will for example be questions for couple, friends, employees etc. The competition will be timed and will reveal how much you actually know about e.g. your partner. The questions are randomized and creative. The player could also challenge several other players within a group of people, the scores will then if wanted be available on a private site on our website together with charts. It is also possible to invite friends and post results on Facebook. The app should be offered as a free version and a paid version. The paid version will include the option to add own questions before a game.

2013-10-22

Researcher 1

We started the day by calling several taxeläkare. They were easier to reach today, probably because we called them earlier than the last time, but they were still hard to reach. Those we could not reach were contacted through email or by messages on their answering machines. However, we did not get the feeling that they believe in video conversations as a good idea for them to use. No one of them seems to be in need of more patients. The idea with video conversations has not been positively received by anyone but our friends. It therefore feels like it is something that might happen in the future, but not now.

Fredrik Bååthe contacted us and sent some information about the emergency health care in Västra Götaland. The rest of the day was spent by reading those reports and by discussing possible problems related to the emergency health care, that we possibly could solve. Fredrik was contacted again for a meeting proposal.

Researcher 2

Additional national rate doctors were contacted. It was easier to reach them earlier in the mornings. The doctors that had time for a short discussion or an interview were not against the idea of our service but could not see them using it. It was understood that national rate doctors worked according to their own schedule. They were always busy and did not have much time available for other activities. Some that worked fully private without any agreements with the government (without national tax agreements) could not see any incitement to offer additional patient time through phone or webcam, since they did not get any compensation for phone calls.

An email was received from Fredrik Bååthe with information about the project he was involved in 2009 ("Förslag till samlad utvecklingsplan för akutmottagningar vid sjukhusen i Västra Götaland") together with some other relevant information. We were asked to go through the documents to get a better overview on the emergency department before booking a meeting. All documents have today been read through and a reply to Fredrik was sent for a meeting this week.

Not much value has been found with our solution, especially not for national rate doctors and their work situation. The problem and need we believe to exist is, however, still validated. We are struggling with the business model. How can it work without the national rate doctors? Therefore, we aim to find out more about other related problems through Fredrik. Focusing on another problem will lead to another big pivot.

2013-10-23

Researcher 1

Fredrik answered on our latest email and we decided to have a meeting next Thursday, one week from now. We can then talk more about and discuss potential problems that can be solved externally in the emergency health care.

Stefan was contacted about if a doctor can be both taxeläkare and an ordinary doctor. The answer was that it is not permitted. If there are not any ordinary doctors who want to swift to become taxeläkare just to work for us, we will need the current taxeläkare. Because of the lack of interest from taxeläkare, we need another way of being financed. Possible revenue streams could be advertising, but will we be able to cover costs for both the doctors' salaries and costs for the company only by revenues of advertisers?

We worked with the report and created a new problem mapping document. Furthermore, we created a new business model canvas.

Researcher 2

Worked on the master thesis, a problem mapping and the BMC.

A meeting with Fredrik was schedule to next Thursday. Stefan from VG was contacted to clarify what national rate doctors are allowed to do and not do. It was confirmed that a doctor who is employed to a health care center could not work as a national rate doctor at the same time and vice versa.

The revenue stream was discussed. If no national rate doctors are willing to use the service/partnership with us, what optional revenue streams are there? Video conversations online would not be possible without national rate doctors unless we find another way to get funding and pay our doctors for their service.

The BMC was also discussed. An additional building block was needed. The BMC should maybe include a Partner value proposition (and relationship). We experienced that a lot of time was spent on the value proposition towards our partners as well as theirs to us. The BMC include what value our partners have for us (under Key Partner) but it does not include what we need to offer them in order to partnership.

2013-10-24

Researcher 1

Most of the morning was spent on discussing new ideas. The health care idea feels hard to perform, but we will not let it go before talking to Fredrik Bååthe next week.

A social app was discussed, where people are asked questions about their habits/personality and their knowledge of their partner's or friends' habits/personality. Statistics will be collected, which also can be used for further question, such questions against the statistics. Top lists could be a motivator, as well as getting to know your friends or partner better. Even groups of friends could compete with each other.

Speed dating online, was discussed. However, it was discovered that an American company already exists, which is operating worldwide and can easily expand locally in for example Gothenburg. This could be done by getting a local post address and customize the websites after cities.

An app where people could put up pictures of their favorite outfit or clothes of the day was another idea. This could later be expanding to electronics and other categories. People or members of our app could then vote for their favorite clothes of the day and the picture owner of the winning clothes would then win a discount check from the clothes store. Furthermore, people who were voting for the winning clothes would also benefit in some way. They all will be offered to be in a lottery for maybe by a discount check as well. Only clothes from our partners (clothing companies) can be voted on. The idea will function if we partnership with many popular stores and if we have a big user base.

After lunch we had a long meeting with Sören, and discussed the old idea, as well as the new ones and several others, (see supervisor meeting). After, we talked about several of the ideas as possible options for us, and decided to look deeper into some of them. We do not want to make a decision of what to go for yet. Furthermore, we want to talk to Bååthe before deciding.

Researcher 2
The BMC for national rate doctors was updated and hypotheses were either approved or disapproved in the canvas. Additionally hypotheses were added in the weekly update of the BMC.

All findings were presented at the meeting with Sören. The currents situation was also discussed. Before making any big pivot, the meeting with Fredrik Bååthe, former head of emergency department at Sahlgrenska, was needed. The meeting is as mentioned next Thursday.

Three new ideas were discussed. Speed dating online, marketplace-app where pictures of products can be uploaded in order to get the supplier of the those products to implement a discount (work as Letsdeal but towards consumer) and a game app where questions about personalities are asked and gamble between couples, friends etc. (reminds of quizkampen). More information about the ideas can be found in Dropbox.

The meeting with Sören was very giving. The notes can also be found in Supervision meeting in Dropbox.

2013-10-25
Researcher 1
We continued to develop the ideas today. Advantages and disadvantages were discussed. Two new ideas were presented. The first idea is a way for people to lose weight through betting with each other. Everybody who wants to join have to venture a small amount of money. If s/he loses more than 4% of the body weight in four weeks,

s/he will be one of the ones sharing the pot. We will then take a part of the money for our expenses.

The second idea is a financial game app. The users get an amount of fake money to invest in companies in the game. Relevant information will be available, such as inflation and unemployment, company news, etc. The prices will then follow the users reaction, as in the real world. Users can then get richer and more powerful. A top list will show the most successful ones. The app can be used for education for economy students or for people who want to learn more about how markets works. It could also be useful for research and as tests of the reality. Companies might then want to buy the right of publish certain news to see what happens.
The social app was also developed. The freemium version could be just for collecting statistics and the premium version could be for competitions. There could be both free competitions with a top list and competitions for a small amount of money, where you could win something, depending on how many that competes.

We will continue to develop and investigate many ideas, in order to make choose the right one to go for.

Researcher 2
Two BMC for two new ideas were made. The first one is inspired from dietbetter.com, where a new way of losing weight is introduces. All users can by wager a small amount be a part of a four weeks competition for losing 4% of their personal weight. Everyone that completes the program with a successful result will be splitting the money gross pot from everyone involved in that particularly group. Market and patent research have to be made.

The second idea is to create a finance app, where it is possible to sell and buy stocks with fake money. The statistics created will be based on the users and members, which will control the fake stock market. Some value propositions are that individual can learn how markets are working, possible to trade stocks without any expenses, it is game of competitions and with learning curves, etc. This second idea does also need market and patent research.

2013-10-28
Researcher 1
We started the day by writing on the report, (problem mapping). The rest of the day was then spent by checking up facts, existing companies, rules and patents related to the new ideas.

The company Dietbetter is the inspiration to the idea “betting on weight loss”. People put money into a pot and the ones succeeding in losing 4% of their body weight split the pot, after it has been reduced by Dietbetter, who takes 15-25%, depending on the initial cost for playing.

One game:
Initial cost: $25

Players: 630
Pot to share: $15 765
Revenue/player: $41.49

This means that there were approximate 285 winners, which is 45% of the players. Dietbetter then made approximate $6.25 per player, in this game, $3941 in total.
(Facts from: http://www.noobie.com/2013/05/24/the-truth-about-dietbet-com-does-it-work/)

Questions about cheating and if the segment is big enough were discussed. Furthermore, other options were discussed, such as if the game can be played with training occasions instead of weight. For example, a group of people could bet on that they should do three passes/week during one month. However, cheating will still be a problem, since many already take three passes or more every week.

The rules for performing games/bets were looked up. Sweden has a monopoly on games and every game has to be approved by Lotteriinspektionen, (LI). It is hard to understand what is permitted or not, but LI will be contacted tomorrow. We need to understand the processes and what requirements they have to get the approvals and permissions to perform games.

There are financial simulator apps on the market already, but all of them use real prices on their stocks. Our idea has not been done, but the question is if the app is unique enough. We believe that we can create a more exciting market by using our own prices, based on the users purchases. The learning will probably be bigger if news leads to immediate changes. Furthermore, we believe that the data could be used in research.

Researcher 2
The questions in problem mapping 2 were ranked and prioritized by level of importance, as in problem mapping 1. The problem mapping 2 is based on the e-läkarna in the health care industry.

Market research was performed on the weight loss application. What are the differences between US and Sweden concerning weight loss? What kind of regulations do we have here and what are the culture differences? How would the business model similar to Dietbet perform here in Sweden. The business model of Dietbet was discussed a lot of times. How were they actually making money? 90% of the competitors are said to reach the finish line by loosing four or more percent of their weight. That does not leave much to the winning pot that goes to the winners and the company. Another issue was that we believed that a high risk of cheating in this service existed. In order to further make the effort worth for the ones that actually are joining to loose weight and that succeed, was to make it harder to cheat. A solution could be to maybe extend the time they have to loose weight and at the same time increase the percentage they have to lost by one or two, in order to not cheat the starting weight by e.g. drinking a lot of water on the first time weight occasion.

One hypothesis was that most people in Sweden (compared to the US) were working out to get fit or to be healthier by loosing some weight, rather than loosing higher amount of weight. More statistics were needed. Since the amount of overweight people and the definition of overweight was different between US and Sweden, the business model of Dietbet needed to be revised in order to work in Sweden. However, we believe that a similar model would work. An idea would be e.g. to instead focus on the amount of time the user goes to a class at the gym. Instead of competing in weight loss, the competition will instead be to stay active. However, would people bet money on this? Furthermore, the challenges needed to be hard enough for the business model to work and yet feasible in order for people to join.

2013-10-29

Researcher 1

The ideas were discussed further. The new findings within the weight game made us understand how they make money. However, we do not know if the market here in Sweden is big enough.

Lotteriinspektionen was called. We found out that a game based on a random process is hard to get an approval for. You need to be an association, (not profit driven), and the fee for apply is 80 000 SEK. However, you are allowed to create games where the players can win by skills and experience. There should not be and random processes that can affect the result of the game. When doing this kind of game, you are only controlled by konsumentverket and marknadsföringslagen. There are no costs.

We discussed different games that could be arranged by skills. Mind tests like memory games, math tests and similar games were mentioned. If a person plays with randomly selected people it is hard to cheat. An option could be that you are only able to compete against people at the same level as you. You could then bet 3 krona or more on your skills in a specific game, and win the pot or a part of it if you are the best player.

The financial app was also discussed. How to make it as similar as possibly to reality was one of the main issues. We need a good system that will function by itself as good as possible. Furthermore, we should try to get users to do as much work as possible for us, (user innovation).

Researcher 2

Further market research on the two ideas, social weight loss and finance app, was made. The business model of Dietbet has been better understood. The average amount of users that actually reach the finish line was more mostly around 45-55% of the competitors. The 90% that was mentioned on the website was refer to all users that lost any amount of weight. The two main problems that were investigated and discussed today were the customer segments in Sweden and the betting regulation.

The discussion about the finance app was focused on what value proposition we could offer compared to existing apps, where stock trading can be made with fake money but on real statistics.

A phone call was made to lotteriinspektionen.se. Different regulations were mentioned and a game where the users are playing against the luck (as our idea about playing against unknown statistics), cost 80.000 krona and was more regulated than games that were based on skills.

The discussions about these two ideas led to a combination of the social app, where e.g. partners can play against each other by answering personal questions and then bet on the statistics of the answer from the whole Sweden, and the idea of letting users bet money into a pot from which they are competing for, as in Dietbet. A small amount will be possible to bet and the 10 first one with the highest score will win 3.5% of the initial bet, 40% will get their money back and the company will take 25% of the pot.

2013-10-30

Researcher 1 & 2

The whole day was spent on further discussions and market research of the existing ideas.

2013-10-31

Researcher 1

We started the day by discussing topics for the meeting with Fredric Bååthe. The meeting went well and several areas were discussed. Many of our hypotheses were confirmed or rejected. Fredrik suggested us to create a new way of making schedules for hospitals, since there are no standardized ways today and since the experience and competence of the employees should be included in the schedule. An experienced doctor can work much faster than an inexperienced, which is not considered in todays schedule. Furthermore, doctors do not prefer to work at the emergency department, which could be changed with a new schedule, if the doctors understand that better workflows means better results. Another advantage would be that teams, where the employees are used to each other, would function better than people that are randomly put together each day. We liked the idea and decided to investigate it further.

Shortly after, we had a meeting with Sören. The idea was discussed. Parts like how it could be transferred to a company and be scalable was one of the main topics. We decided to keep it in mind but to try to find something else that had a better potential. Several options were discussed. One of them were transportation and to car pool. It would be a website where people could put where they are going and how many that could join, to save money and to be more environmental.

We used inspiration from Airbnb, Lets Deal and others. Three ways of thinking were mentioned, to solve a problem you have yourself, to solve a problem in a specific business/market or to do something that works somewhere else.

After the meeting we continued to discuss what could be done. We looked up innovative and successful business in the US but could not find anything that we believed in.

Researcher 2

A meeting with Fredrik Bååthe, senior project leader at VGregion and former head of emergency department at Sahlgrenska, was held this morning. We discussed our thoughts and ideas about health care, more specifically primary health care center and emergency departments, and got feedback on them from Fredrik. The situations and problems in health care in general were then discussed to understand it from Fredrik's point of view. A lot of hypotheses were answered. By combining our thoughts and Fredrik's experiences and knowledge, we agreed on an existing potential problem. The problem was feasible and if successfully solved it will create a lot of value. The problem could be seen as small but believes to be central an complex in a health care environment. Fredrik mean that the health care was in need of a working competent evaluation system for schedule planning on emergency department. See meeting notes with Fredrik Bååthe in Dropbox for more information.

The problem was relevant and would be for a good cause. The question was now the revenue stream. The business idea was also not scalable.

A meeting with Sören was held on the afternoon and the competent evaluation system brought up by Fredrik was discussed. The scalability and revenue stream were also discussed. Furthermore, we discussed new ideas and our working process. We have been pivoting a lot, but only after discarding critical hypotheses. We decided to now either find a main problem that we have and really want to solve and go for it (inspired by Dropbox, Airbnb) , or find a business model that has been successful somewhere else and that are locally dependence (inspired by Letsdeal through Groupon), which mean that they cannot easily open up where we decide to perform.

PIVOT

2013-11-01
Researcher 1
We continued to look for successful companies abroad, to find something that could be applied here. There were two main ideas discussed.

The first is to start an organic and environmental fast food chain. We could then start with one restaurant and have the scalability factors in thought while building it. There could be a few courses to start with. The cooking should be done in advance and the dishes at the restaurant should be made quickly, (by heating them and perhaps by doing the finish like frying potatoes, etc.). The food should be healthy and organic. The brand could then be used for franchising, compared to McDonalds business model. We believe the time is perfect to start an organic fast food chain, since people are getting more aware about food and quality and organic food is getting more popular. One hypothesis is that people like the fast food concept, but not that the food most often is unhealthy.

We know that the idea will be hard to perform in the beginning, but we also believe that it has long term potential to grow and become a profitable business.

The other idea is based on the hypothesis that companies want to consider financial services for their own capital, but do not dare to do it themselves or do not want banks to do it because of their high courtage. We could then collect companies' capital and get better deals and contracts at banks. In that way we will offer them lower costs. Another idea is to offer to teach them how to do it themselves, since the costs are much lower without the banks' advices. We could then monitor their stocks and tell them about news and emissions.

We are not sure about what is permitted or not, but we will try to find out what is possible to do by calling Finansinspektionen (FI) and by reading laws, etc., on the internet.

Researcher 2
More inspirations from successful business models were gained. After some market research on innovative businesses, we came up with the following two ideas that we believed included scalability and profitability. Beside the scalability and financial possibility, we were considered the stickiness, virility, competition, and the opportunities of the ideas.

The first one is to create a platform that will coordinate financial investments from SME into different categories based on the requirements and demand of the businesses. The idea is to gather together investments from different actor and invest them as one actor. If this is possible, we will work as a customer to the bank and with SME as our customers. Hence, the fees from banks for the services will only be for every investment we are making as a company instead of fees for the SME separately. We believe that it will in total decrease the cost of bank services and that gathered investments from the enterprises will make it possible for the bank to invest the money, which will be in a bigger amount that it would be per enterprise. Furthermore, another version of this idea was also discussed. Our business would instead work as an adviser for SME. However, the second version will require other professionals.

The second idea that was discussed was to work with ecological food. We would like to provide the option for people to get fast and good quality ecological food. If we should provide it as primary products or as ready to eat product, is to be discussed. The main idea is to join or create a trend of being more ecological.

2013-11-04
Researcher 1
We continued to develop the idea of general finance advices to SMEs. The base for the idea is the bank fee for funds. The bank usually charges 0,8-1,8% for investing in a fund, when we could do it for 0,1% and still be very profitable. This is possible because of the technical analyses that we are capable of doing. We can then create a portfolio that statistically has performed better than other funds, and offer it to many companies through a monthly information page. Changes might be done every third month. Companies will pay for the updates. We will further help the companies to start to trade through Avanza, the company with lowest courtage. We are not sure about what the

revenue streams will look like. It will depend on how the service is received.

We do not know how to best contact the customer segments, which we believe will be SMEs and potentially individuals. We need to talk to people that are responsible for their companies. Those people are often hard to reach. We do believe that a MVP will be easily made through Matlab, a math program where data and statistics can be compared. The product will be based on statistics and optimization, where historical prices will create the ground for future outcomes. We could create different alternatives, depending on what the customers are willing to do. Customers will invest in the stocks themselves, but based on our advices.

Finansinspektionen was called, to find out if we need a permission to do this. The answer was no, as long as the information is general and not individually adapted. Furthermore, Handelsbanken was called to understand their funds and fees. We wanted to know what was included in the numbers on their homepage. It turned out that funds, bases on stocks in Sweden, still did not perform better than the index for the same market, (fees included). Instead the index performed better.

We need to find a reason for companies to stay with us. One reason could be that we make sure that important information like emissions and other changes will reach them. Another reason will be the changes in the portfolio, to keep it up to date.

We compared the characteristics of the idea with the notes from our supervisor and believe that it possibly has potential at all areas compared. Furthermore, we started to do a BMC.

Researcher 2

The idea about financial investments has further been developed into a service that offer historical statistics of different combinations of stocks from which portfolios are created and can be invested in. We call it smart finance and will offer, through technical analysis, portfolios that believe to follow a trend, which SME and individuals with investment opportunities can pay to use as a base for their investments. The payment will be in a monthly basis and will also include monthly updates of statistics, quarterly updates of smart portfolios and regularly observation of new issues of shares. We believe that we will offer lower cost for SME and individuals to use our service over banks and other financial companies. Hence, the percentage the banks are demanding, up to approx. 1.8 %, will through our service only be up to 1%. It will be a different way to invest since it is based on pure historical data. It will also give the customer more control that it would be at a bank but with less work than doing it themselves. However, we need to carefully consider our value propositions and be clear about what we value we are creating and how we best can capture the value.

Based on the regulations we have found out from FI (finansinspektionen), we will not give any advices. FI was contacted today and confirmed that anyone can give advices as long as it is not specifically formed to someone. Hence, it is ok if the advices are addressed to segments and bigger group.

Handelsbanken was also contacted to understand how the funds, fees and customers' returns are calculated.

The finance market has been investigated and different definitions need to be understood. The finance market does also contain a lot of companies that help you get the most suitable portfolio based on statistics and analytics tools. We have also realized that that the funds on e.g. Handelsbanken contain and are based on other funds.

A BMC for the smart finance was started.

We are struggling on how to approach customers and how to perform the first interviews. An MVP will however be created as soon as possible and be used as a tool to present the idea. A test group is also considered relevant to test the service.

2013-11-05

Researcher 1

We continued to check different price strategies. The most attractive way at the moment is that customers could print/save their investments in some way and send the information to us, before they get next months statistics/advices. Furthermore, we continued to work on our canvas.

We also checked fees that banks have and compared their results with indexes of our own. Fees are very high and the index performed better in total for almost all funds checked. Furthermore, Handelsbanken was contacted again. It was shown that fees are included in the result of the funds they have. So when the fund is worth 10% more than before, the stocks have raised even more.

Matlab has been used and some programs have been tested, in order to see what is possible for us to do. We were able to start with momentum and changed the method to fit different strategies of investing.

FI was contacted about the rules for giving advices to a segment. We will get closer and closer to the need of permission if we are segmenting the customers. The limit is decided from case to case.

Researcher 2

FI and Handelsbanken were once again contacted. According to FI, the need of permission is getting more common if the company is addressing to a certain segment. This is however decided from case to case. Furthermore, according to Handelsbanken, the fees for e.g. brokerage (courtage) is deducted from the statistical growth of the funds presented on the website.

We went through different possible price setting strategies and came up with three potential once. Pros and cons were put against each other and the most promising one is based on no cooperation with banks. We will mostly charge for administration fees, which is a much lower percentage cut from the customers' returns than from other banks and similar, and for that they will get regularly updates of statistics and smart

portfolios. In returns they need to send in bank statement of the portfolio chosen by us. In other words, they have the control over their own funds and will get technical analysis for a much smaller cost.

We went through cost and fees at banks and compared it to index. We worked with matlab and created simple program to perform calculation. The BMC for smart finance was completed.

2013-11-06

Researcher 1

We continued to develop the idea and had a supervision meeting at lunch. The idea was presented and discussed. We need to make the idea clearer and be sure about its functionality and that we can make money on it. Furthermore, we need to be more precise when describing the areas in the BMC, especially customer segments and revenue streams. Different BMCs were discussed. Free statistics could for example be presented in a homepage with advertisers. We can then start our own fund when we have enough of money.

We continued to discuss different options after the meeting and tried to develop our BMC. Different business models were evaluated and calculated on. We might not attract the right segment if we use advertisers as an income source. The most relevant customer segment is believed to be around 50-70 years.

Researcher 2

We continued to work with the smart finance/fund idea and evaluated the opportunity of the business idea, as well as how to make money, how sticky and viral the product will be, how to scale it, and what competitions our business idea will meet.

A meeting with our mentor was held today and the idea was presented together with its BMC and the questions above. See meeting notes for more information.

The idea formulation and its BMC needed to be worked on. We need to formulate our hypotheses better and connect them to each other. Hypotheses in every parts of the BMC are needed in order to see and understand the whole value of the idea. An idea with a great left side of the BMC will not be a successful business model without a functional right part of the BMC. We are currently working with the revenue stream, customer segments and channel to the customers.

2013-11-07

Researcher 1

Discussions about revenue streams and cheating lead us to a new price strategy. Instead of taking cuts from customers, they could pay for the statistics. The distributions will differ between small and large amounts of money. With a smaller amount, it will only be profitable to have stocks from the Swedish market, while bigger sums make it possible to do other combinations. This will motivate people with more money to pay more. Smaller amounts than 50 000 SEK will only cost 5 SEK/download. Statistics adapted to amounts bigger than 10 000 000 SEK will cost 1000 SEK/download. We will recommend the customers to update their distributions at least monthly.

In this way, we will get revenues earlier. More options and lower costs will decrease cheating.

The market was investigated further and deeper.

We continued to work on our business model, in order to create more precise hypotheses. This was done simultaneously as the market investigation.

We will check costs for courtage and costs for letting the bank trade for the customers. If customers do not want to perform the purchases themselves, the bank might be able to do it for them for a smaller amount of money. We need to compare this option with the banks other costs.

Researcher 2
Different price setting strategies was discussed and presented between us. The most promising strategy was based on charges per statistic. In this case we can discard the fact that we need our customers to report that they have been using our statistics and fund distribution, which was a problem in earlier price setting model. The fees for the statistics will dependent on the size of the investments by the customers. The higher amount the customers choose to invest, the more in-depth analysis and advanced distributions they need. Hence, the fees will be higher for higher investment.

Furthermore, by letting the customer choose different criteria for the fund, such as insertion amount, risk, industries etc., we could customize statistics. We believe that by letting the statistics be customized and by having a reasonable price for the statistics, there will be lower incitements to users to share the statistics.

Time was spent on updating the BMC. The hypotheses made were more distinctive and more time was spent on each of them. We worked with customer segments, value propositions, channels, customer relationships, and revenue streams.

2013-11-08
Researcher 1
We started to create the homepage. An initial theme was chosen. The website is meant to be a mvp. We need to have a product to start with, and the first parts of the homepage are easily created.

We further continued to look up methods. We checked different KPIs that we could use. One that we plan to use is the value of the company comparing to the value of the stocks. In this way we can measure how expensive the revenues of the stocks are and compare companies to each other. The analysis was started but we had to call the database used, in order to be sure about the trustworthiness of some calculations. They did not know the answer but will recall with the information on Monday. Another method that we checked was the Fama French method and how to create the optimal portfolio.

We also talked to friends about technical solutions for the homepage. Different solutions for the programming were discussed.

Researcher 2
Our idea about smart finance was discussed with friends. A lot of inputs about what value the technical analysis could create were gained. Discussion was made with friends that were trading stocks as well as the one that have never tried. What features they believe to help them with stock trading were also discussed. The features were then analyzed in relation to our analysis model and products.

The technical solutions for our website were discussed with people experience in the area.

We worked with the website and the BMC. Two analysis models for the portfolio distribution were worked on. The first one included KPI for the companies within Stockholm's OMX 30. Acquisitions, profit, loss etc. of the companies were gathered. The next technical model to be investigated was Fama French model.

2013-11-11
Researcher 1
We started the day by working on the BMC. Each area was carefully discussed and described. We have developed Key Partners, Cost structure and Revenue streams. We now have a clearer view of how the business could function.

We worked with the homepage. To more easily imagine and discuss the functions appearance of it, we decided to do a sketch of it in PowerPoint. This helped us to develop the idea. Furthermore, it will be easier to explain our thoughts to others.

Researcher 2
The current BMC was completed, and will presented to our mentor on Wednesday. The BMC is now more described, elaborated, related and understood. We have considered the importance of the building blocks in the canvas more. We understand that each block needs thoroughly explained hypotheses in order to work as a whole and to be able to create a business model.

A first MVP of the website was created for the meeting as well.

2013-11-12
Researcher 1
We continued to work on the homepage (the mvp) and created all vital parts in a ppt file. To program the homepage takes very long so we decided to create pictures of it instead.

We also collected more statistics and created diagrams. Statistics for Handelsbanken's Sverigefond index was compared with SBX Sverige. Handelsbanken's results turned out to be much lower than the real index.

The methods were further investigated. Fama French is one method that we will consider in the portfolios.

We discussed the problem and our solution with a female friend during dinner. She is 25 years old and working and was interested in our solutions. She wanted to trade stocks, but did not know what to invest in, or where to start. This seems general for many people at different stages and ages, they do not know how to start.

Researcher 2
We worked with the MVP, a potential homepage. See Smart Funds pdf in Dropbox.

Statistics of different funds with corresponding indexes were gathered. The changes in the statistics were then compared in different graphs.

The method Fama French were studied and applied to our idea.

The problem and solution were also tested on a friend. He is 32, employed at a bank and is managing investments in funds. For him it was a natural choice to let banks manage your investments. For him, you need an education and expertise to be able to invest in funds in smart way. The problem is not high managing fee, people will pay for the service even if the managing fee was higher because it is needed. The problem is that people do not know how to invest smart and do not trust on themselves enough to invest by themselves. At the same time, he claimed that our solution will not work. According to him he has tried exactly the same thing without any success. However, the methods he used were not the same as ours.

2013-11-13
Researcher 1
We had a meeting with our supervisor today. The idea was presented and we discussed revenue streams, channels and customer segments. These areas must be clearer. We further need to have some kind of viral function on our product. Some parts are easy to copy and therefore we need to get it out to a very large customer base from the start. We could also use an existing customer base, such as Avanza's. A co-operation with Avanza could be a way of getting customers. For example, the service could be for free for Avanza's customers.

We decided to go for the idea, which according to Sören seems to have potential. There are some parts of it that need to be specified. Until next meeting we will make a thicker description of some areas of the BMC, (channels, customer segments and revenue streams). Some calculations need to be done as well, such as how much we need to sell in order to earn a certain amount of money.

After the meeting, we continued to discuss the three most important areas of the BMC at the moment. Furthermore, we continued to perform calculations of the bank's funds. Handelsbanken's index fund has a much poorer performance than a ordinary Swedish index. The performance looks even worse when adding the management fees. We will continue to add more funds to our comparison. We will also try to find out if there are any hidden costs before the performance is shown, or if the performance simply is just bad. Another strange notice was that Handelsbanken's own graph showed a much better

result than ours, which was based on their own historical data. We will look this up further to see what has happened.

Researcher 2
A meeting with our mentor was held this morning and the MVP of the homepage and the latest BMC were presented. We have now decided to focus on the idea of Smart Funds. Before next meeting, on Thursday next week, we need to further clarify the customer segments we aim to reach, what their trading strategies currently look like, and show how and why our service will be good for them. This by creating a model that show how much they are spending on banks compared to managing their own investment through our service.

A clarification of how to reach the customer segment, the channel, was also needed. We need to figure out how to make the service viral, how to create a buzz and if and how we should design the freemium and the premium model. Additionally we need to define the revenue streams. We need to present a model how we actually plan to make money. We need to calculate how much we need to make to cover our cost and how many customer we need. A reverse cost structure could be used in this case. Lastly, what key partners should we aim to have in this phase? By co-branding with e.g. Avanza, it is possible to offer the product to an existing customer base and start to expand in that way.

2013-11-14
Researcher 1
We continued to develop the viral abilities and customer channels. We looked at companies and ideas that have been viral at the internet, to get some inspiration. Freemium vs. premium is one though. The freemium customers could then get funds of the day, comparisons, etc. Premium customers could get their adapted portfolio. Messages could be sent out to inform the customer that the portfolio has changed with more than 20%.

People often tend to spread bad things more than good things. We could possibly use this by making people upset about the banks.

Furthermore, customer segments were discussed. We need to do some interviews to understand our customer segments better. Students were discussed. We could go to schools and talk about the possibilities and advantages with our service.

An office at Handelsbanken was called. We tried to discuss the graphs that we have seen. The person that we spoke to did not know anything about costs. She claimed that the only costs was the management cost, and referred us to the head office. She did not even know anything about courtage.

Researcher 2
We improved our hypotheses in channels and customer segments in the BMC. We need to better define our customer segments and create story telling about them. We also need to find the best way to reach each the segments and at the same time find out how

to get Smart Funds viral. Channels are at this moment the most critical part of the BMC.

Handelsbanken was contacted with questions about their portfolio, Handelsbanken sverigefond index, in comparison with the historical stocks value of the same portfolio. According to our calculations, the graphs were not developing in the same way after the financial crisis in 2008, which they should since they describe the same portfolio. Why is that so and are there any other hidden costs before the graph on the homepage is sketched out were asked. The employee at Handelsbanken could not clarify the questions clear enough and referred us to another employee that could be contacted tomorrow.

2013-11-15

Researcher 1

We had a discussion and investigated the possibilities of Cooperation with Avanza, Nordnet or cmcmarkets. We listed the values they will get by having us as their partners,

- they will expand their user base
- they could use a finished product that otherwise will be used by their competitors
- Their customers will get a 50% discount

Calculations on the revenue streams were made. Cooperation and an existing brand and customer base would definitely be of benefit for us. If only one percent of their customers, (3000 customers) use our service we would be profitable enough to continue and develop the company.

We further discussed and investigated what our business model would look like without partners. To create a buzz and a viral service was in focus. We found a lot of information on the internet in how to succeed with that. We are listing the approaches that fit our business.

FI was called. It seems hard to create a service with many functions and options for the customer, which at the same time is not an advisor. We have a contact at FI now that we have been talking to many times. She will probably be of great help for us by telling us what is permitted and not. She was also open to keep the contact and help us to create a service that is permitted. We can send an email to FI with proposals and they will answer what they believe. Hence, it will not be an investigation, only advices and guidelines.

Researcher 2

Today's efforts were put on potential revenue streams and channels.

Two possible models of revenue streams were worked on. The first model is based on cooperation with one of the three major actors Avanza, Nordnet or cmcmarkets. A calculation was made based on how many percentage of Avanza's 300 000 customer we need to have as customers as a minimum to get around. The percentage was 1 % of Avanza's existing customers, included 50% discount that we plan to offer members of Avanza (See Smart Funds - Revenue streams in Dropbox for table and calculations). A value proposition list was form for both potential partners and for Smart Funds.

Partners will offer Smart Funds; co-branding, existing customer base, easier buying process for customer through our website, variability, and marketing. In contrast, Smart Funds will offer partners; 50 % discount for their customers, increase the value to use their services and possibly increase the customer base and to be part of a new trend.

The second model of revenue streams needs to be further worked on. It is not based on a partnership with one of the companies mentioned above.

As for the Channels, we form a potential strategy of offering customers a freemium and a premium model of our service. Freemium will include the day's free portfolio, the possibility to get customers' existing portfolios analyzed, an overview of how much customers have save/can save by doing trading by themselves, the week most profitable portfolio, and account with historical purchases. The premium model will include; portfolio distributions, updates and premium app.

How to make the service and business viral and how to create a buzz were also focused on. In order to reach the right people we need to make story telling of potential customer segments to understand how they work, their current situations and how they want to be reached. A lot of thoughts were spent on how to raise the awareness of our service. A lot of inspirations of different kinds of services that successfully created a buzz effect were investigated. Most of the lately buzzes have been using social medias. However, before creating a buzz, it is important for the service to be completely done..

FI was contacted again today.

2013-11-18

Researcher 1

We are trying to formulate the problems, solutions and advantages with our product in order to make the whole concept clearer and understandable. We developed the product's channels and revenue streams. We want to create a competitive advantage that is hard to copy or buy. It could possibly be that we are cheaper, because we are not a financial company. But that is not the only advantage, our portfolios take a lot of time and effort to copy. Thanks to people in our families, we have access to knowledge and competence that no one else has.

To get viral, we are trying to develop the product/service so that it automatically is introduced to new customers by old customers. It must be fun and profitable to share.

Revenue streams were discussed and we continued to calculate different scenarios. Cooperation with Avanza or another similar company would bring an existing customer base. That would have been very beneficial for us. We need to develop the advantages for them. It should be a perfect offer and a win-win situation.

Researcher 2

Our real competitive advantages that cannot be copied or bought were discussed. We need to be aware of that existing competitor or new competitors can copy us. What can be copied and what can be seen as a competitive advantage with our business model? A

potential competitive advantage will be to offer our service together with e.g. Avanza, as mentioned earlier. This will create a channel that will be hard to imitate for new actors, as well as a jump start for us.

It is essential to have a viral effect of the business. We have realized that marketing is also about creating relationship and authority, which has required a lot of time. The value propositions have also been discussed in terms of why we should be chosen over our competitors.

We have mapped our problem identification and the solutions we believe to fit the problem. Market validation and market size are to be investigated.

2013-11-19

Researcher 1

We investigated our market potential today, by checking statistics and by doing some assumptions. The customer base in Sweden were set to 150 000 people. With the sale distribution we assume, the total turnover will be around 50 000 000 SEK. Because of the fact that we almost do not have any costs, a big part of the turnovers will be revenues.

How to perform a Buzz and how to get viral were discussed. One suggestion is that some features at the homepage only will be for those who invite friends to our homepage. The features could be possible to buy as well, but for a high cost. Buy and sell signal could be one of these features, other inside information could be offered as well. Furthermore, another motivation of spreading the portfolios to friends could be that the more who buys, the higher value. If you can make others buy your portfolio, the values of your stocks will increase. This is of course hard to claim, since most of the stocks we will handle are those of big companies.

Our target customer segment was discussed. We plan to start to market the product to students, since they are early adopters in other businesses and since our service is cheaper than the banks.

Researcher 2

We have investigated potential market validation and market size. The data was collected from annual reports, SCB and other official information from the Internet. This was done to understand Smart Funds' potential market share. The market share was then calculated into the revenue stream.

We have create a model for market adoption, where questions such as how to make it viral, how to create a buzz and what we are going to offer for free and charge for were answered. The market adoption was also created in a second model, but this time through a partnership with either Avanza, Nordnet or CMCmarkets.

2013-11-20

Researcher 1 & 2

Worked with company pitch and related statistics

2013-11-21

Researcher 1

We started the day with a meeting with our supervisor. The idea was presented again, but more like a company pitch this time. Some areas still need to be developed and investigated. We need to be sure about all functions and processes in the business. Every graph needs to be correct with the right costs included.

Our supervisor proposed a more specific customer segment. The target customers could be people who are in the beginning of their career, or people who have been working for a few years. They are willing to save money for their pension or a house, but do not know where to start. They want to invest in stocks, but do not have the time to create an understanding about the stocks and their movement. This segment should be big enough, especially when expanding to other countries. It is much easier to go for one segment, instead of trying to make the service fit all kind of persons.

We should not care about FI for now, according to our supervisor. If we are not able to adapt the service, when it is time to launch it, we could go for other countries.

We should start to create a mockup, a homepage with some of the functions. When working with it, we should have in mind that it should be easy to translate the homepage to other countries and markets.

We got two contacts at Handelsbanken from Sören. They might be able to tell us about what costs that are involved in their funds.

New channels were developed and presented, to go through websites or forums that recommends distributions today. Furthermore, to use financial societies and clubs could be channels as well.

During rest of the day, we worked with our canvas, our hypotheses and our problem mapping. The hypotheses were ranged so that we start to find out more about the most critical statements.

Researcher 2

A mentor meeting was attended today. We went through Smart Funds more thoroughly with focus on the main problems identified, our solutions, the market potential in Sweden, revenue streams, viral capabilities, and competition.

The feedback of today's meeting was about customer segment, channel and facts. We need to focus on one target customer segment, to start with, and from there expand. The suggested target customers are the ones between 25-40 years old. The ones that just have start working or have been working a few years that consider starting trading stocks. The target customers will be the ones that need or want to save money for pension.

We need to find all fact needed, especially about the costs at banks. We need to make sure that we clearly understand the financial market. More banks will be contacted tomorrow. See supervision meeting for more information.

It is also important to work with strategies and build our server to be scalable.

The channels were discussed a lot. The first potential channel that needs to be investigated is the financial forum. They are currently used to get advises and suggestion of different portfolio distributions for saving money in general or for pension.

We have after the meeting formulate and discussed the idea formulation and the corresponding canvas a lot. The canvas has been updated and is more focused on the chosen target customers. The hypotheses on the canvas were reformulated and prioritized after importance. They are now ready to be verified with customers.

Problem mapping 3 was also worked on.

2013-11-22

Researcher 1

Index funds from the four biggest banks in Sweden were compared to each other and to an index. The index shows a better result than the others, even before managing fees are calculated to the results. This means that we could provide better solutions than the funds only by helping people to follow the index.

Worked with the master thesis.

Researcher 2

Worked with the master thesis.

Index funds of Sweden from Swedbank, SEB, Nordea, and Handelsbanken were compared to the SBX index for the past five years, 2008-2013. The comparisons were made with and without banks fees (yearly fees). It was showed that Handelsbanken's index fund was the one that differ the most from the SBX index, see graph in "jämförelse indexfond från 4 banker med sverigeindex". The other index funds from the other banks have been developed better and are more in line with SBX's rate 2013-11-04.

2013-11-25

Researcher 1

Problem testing has been performed. A couple, around 60 years, were annoyed about the costs at banks and a discussion revealed that our problem is real to them. According to them, many have the same opinions about banks' fees.
Worked with the master thesis, problem mapping.
Worked with the homepage.

2013-11-26

Researcher 1

Worked with the homepage.

Planned and discussed what a MVP should include. The first product will not be as advanced as the finished product. One function, a mapping, with value vs. growth and small vs. large companies could be the bases for the MVP.

Researcher 2
Problem and solution testing were performed. A male in his 50s were interviewed. He invests in funds through banks and pays high management fees. At the same time, some of his investments increase very slow. It is convenient to let someone else take care of the investments. However, time is still spent on meetings with banks anyway. Since his invests in many different funds, he chooses to let a bank manage his funds. He likes our product concept a lot and believes that it will benefit a lot of people that are investing by themselves, especially the ones that want to start or have started investing by themselves. He also believes that it is easier to go to a bank if a lot of different funds are being invested in. He also thinks that the bank takes too much in management fees, especially when the economy is bad.

2013-11-27
Researcher 1
Worked with the homepage.
Fama French was further investigated. This will probably be our first way of building portfolios. An index, for example the omx Stockholm 30, will be the base for all portfolios. Customers will then be able to weigh against small vs. large companies and growth vs. value. This first method is much easier for us to perform than the others. However, the portfolios are "slow" and will not require many changes, since we are working with annual reports, but this might not be necessary. People might prefer slow portfolios comparing to fast portfolios where you will have to trade a lot. To have both options would be preferable, but Fama French is a good start. In this way, we can be profitable earlier and then we have the chance to gradually develop the product further.

Researcher 2
Problem and solution testing were performed, with a male 26. He has had money invested through a bank in over 10 years. It is convenient but he is aware of that the money can be invested in a better way. The fund is check up once a month and has increased constantly over the years. The reason why his investment has stayed at the bank is his own lack of time and knowledge. The plan is to invest more and better in the future, either by himself or through the bank but with more involvement from his side. Our solution was positively received and the fact that customers could decide by themselves how often they want to get the updates was valued. The service we provided needed to be easy for him to consider it.

2013-11-28
Researcher 1
Solution testing has been performed. A relative, (woman, 59, full time working), wanted to start to trade stocks, but did not know how to start and what to go for. Our product could help her and she was interesting in trying it.
Worked with the homepage.

Researcher 2

Problem and solution testing were performed on five people (friends) in the ages between 24-30. Two started to work this year, the rest are students. The two employees have not yet started to save in funds or for pension, but are planning to. They both feel that they have to work for a few years first. They highly confirmed that the solution might be something for them due to their lack of knowledge about stock trading and time available.

Two of the students are currently trading by themselves and are doing all market research and decisions. They were definitely interested of how and if the solution could help them out and what our database should be based on. They did not think that the solution would make it easier for them to trade stock. It will instead help them to trade differently and with other strategies other than the ones that they were using now. The third student has not trade before or saved in some other way, but consider to starts soon.

2013-11-29

Researcher 1

Problem and solution testing has been performed, in terms of conversations with relatives, (male, 60, currently saving in funds). He was not aware of how much he was paying for letting the bank manage his money and became interested about our solution. He did not want extra work, and believed that it would be time consuming to doing it by himself. At the same time, he realized the problem and how much he could save.
Worked with the homepage.
Discussed possible solutions for the MVP. Possibilities of doing this by ourselves were investigated.
Worked with the master thesis.

Researcher 2

Problem and solution testing were performed with two friends that have worked full-time for a few years. Both females and 26 years old. Neither is saving in funds or for pension. One of them did not have any plans for saving for pension yet until a couple of years. The other one feels that she does not know enough for saving in funds by herself. She feels that it costs too much to let bank invest for her at the moment. She is very interested in the solution and can definitely see herself using it.

For a period, problem testing has been performed on people that are 23 or older. Four main problems have been verified, each in different customer segments. The product concept was either tested on the same people as in the problem testing process or other new people.

The first segment consists of people that are currently not trading stocks, but would like to. The problem identified and tested within this segment is that they believe that stock trading is really hard and therefore do not dare for testing it. Some in this segment are a little suspicious about our solution and would like to see the actual product in order to understand the reliability. Other see the value of starting trading stock by themselves but with provided statistical analyses.

The second segment is people that are trading stock by themselves and are managing their own investments. Problem verified in this segment is that they are aware of what research they need to perform and that it is a continuous process. This segment also verified the product concept and believes that it will bring value for stock trading. They further believe that people within the same segment as them will see benefits of the product.

The third segment is people that currently are having their investments managed by banks. They are aware of the high cost and are interested about what the cost actually covers. They believe that the cost is too high. The problem identified in this segment is that people think that the banks charge high managing fees, including other related costs at banks. The solution testing showed that some in this segment see value in a product that could cut down this managing fee as well as decrease the banks power in fund investments.

The fourth segment is also people that currently are having their investments managed by banks and that is aware of the high managing fees. However, they will choose to let banks manage their investment, even with high managing fee, since it is convenience. Problem verified here is the same as in the third segment, that people are aware of the high managing cost at banks when investing. Some in this segment thought that the product concept was interesting, but were not interesting in using it.

These problem and solution testing led to new conclusions and hypotheses → young adults that just have started or have worked for a couple of years. They plan to, are or want to save money for pension. This segment is almost the same as the one suggested on November 21.

2013-12-02

Researcher 1 & 2

It is learned that a MVP can be the simplest thing presented. During the development of the different MVP's, sometime it has been hard to keep the amount of features down. A MVP should only include the minimum features needed to start testing it; this was constantly reminded between the researches. What we were able to with own resources needed to be considered from start. It is further needed to be creative during the time when resources are limited. It was also experienced that technology needed to be considered as early as possible.