Customer involvement in business model innovation
A case study in the medical instrument industry

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Abstract

Firms have to constantly develop or innovate in order to stay competitive. Within the fields of marketing, product development and service development studies have examined how the customer can be a resource for development or innovation. Recently, customer value has been examined within the business model concept, which has emerged as a new unit of analysis and has steadily gained interest during the past 20 years. Linked to the concept of business model is the concept of business model development or innovation. Within this field of research there are very few studies on customer involvement. This is the starting point of our study.

The few studies that exist regarding customer involvement in business model innovation have mainly focused on the customer as a resource for screening ideas. In our study, we focus on the customer as resource for idea generation. We also go in to detail and examines in what dimensions different customer groups can be a resource for business model innovation.

Our theoretical framework consists of ten different studies that examine business model dimensions, from which we identify nine dimensions relevant for our context. We also use theories regarding business model innovation, business model design and customer involvement.

We have conducted the study in the context of a small medical instrument firm. Our empirical data consists of fifteen interviews with customers and company representatives. The customers represent different customer groups: patients, nurses, doctors and managers.

Our analysis originates from the business model dimensions identified in the theoretical framework. We use the theoretical framework to understand in which dimensions the customer can be a resource for business model innovation. We also use the theoretical framework to look for differences and similarities within and between the customer groups.

The study concludes that the customer can be a resource for business model innovation in a number of business model dimensions. Furthermore, the majority of the ideas the customer has is similar or identical to the ideas that the company has. The ideas the customer has seem to be effected by their relationship to the business model. There are also some individuals that have substantially more ideas than others.
Thank you!

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1 Introduction

1.1 Background
In recent years, small and medium sized firms have been regarded as the engine of economic growth and employment (Lee et al. 2012, p. 832). In today’s economic downturn where the industry giants have been slowing down, the importance of small and medium firms have increased (Lee et al. 2012, p. 832). A large part of the European economy consists of small and medium-sized enterprises and it stands for two thirds of the employment in the private sector. More then 20 million SMEs’ represents 99.8 % of all companies in Europe and it employs 88 million people. (Svenskt Näringsliv 2010).

All companies have to develop in order to stay competitive (Kuratko et al. 2011, p. 3, Alam 2002, p. 250, Grönoos 2008, p. 19-25, Bowers 1989, p. 15), regardless of their size. In order to stay competitive companies has to develop and/or innovate. In as early as 1934, Schumpeter distinguished between five types of innovation: new products, new methods of production, new sources of supply, exploitation of new markets and new ways to organize business (Schumpeter, 1934, referenced through Casadesus-Masanell & Zhu, 2013 p. 454). Previous research has focused a lot on how to innovate new products or services (Antonio et al. 2010, De Luca & Atuahene-Gima, 2007, Calantone et al 2010) and how to innovate processes (Bowers 1989, Scheuing & Johnson 1989, Tax & Stuart 1997, Johnson et al 2000). However how to innovate in order to organize the business in a new way lacks the same robust theoretical and empirical foundation as the other two ways of innovating (Schneider & Spieth, 2013, p. 1340001-2). Organizing the business in a new way is according to Casadesus-Masanell & Zhu (2013, p. 464) often referred to as business model innovation.

We argue that business model innovation is a possibility for companies to develop and innovate in order to stay competitive. An industry that is highly dependent on the innovation is the healthcare sector (Johannesson, Olmsäter & Stevens, 2013) one part of this industry is the medical device industry. Davey et al. (2011) highlight the importance of understanding innovation in small firms operating in the medical device industry, due to the high rate of innovation in the industry, the increasing cost for healthcare and the long time from promising laboratory solutions to economically viable products. In the medical technology industry many firms are small, 62% has less than 20 employees (AdvaMed, 2013). Davey et al. (2011, p.808) recognizes the importance to study small firms and refers to Kaiser foundation that stresses the importance of high-tech small firms (HTSF) in this industry.

Most of the pioneering companies that have integrated users into innovation and other business processes have also been successful in capitalize on this integration. These companies were start-ups or relatively young companies that have employed a user centric-business model that have allowed them to exploit the creative potential of their users. (Hienerth et al. 2011, p. 345) Small firms continue to be incubators for innovation and employment growth during the current recovery (Kobe, 2012, p. 1).

1.2 The business model concept
Business model is a concept that has gained increasing interest in the research community. The number of published articles concerning business model has grown
firmly the past 20 years (Zott et al. 2011, p. 1023). The field of business model research is growing but still there is no consensus on how to define the business model concept.

Zott et al. (2011, p. 1020) argues that business models as a field of research has mainly developed in three silos, that to a some extent is isolated from each other. The three silos are (1) e-business and the use of information technology in organizations, (2) strategic issues, e.g. value creation, competition and firm performance (3) technology and innovation management (Zott et al. 2011, p. 1020). The phenomena that the field has developed in silos might have had an effect on the lack of commonly agreed definition. However, both Zott et al. (2011) and Lambert and Davidson (2013) agrees that the business model concept is a unit of analysis that is centered around the firm but also reaches beyond the firm and includes network partners, customers and other allies. Zott et al. (2011, p. 1020) also present that common theme in earlier research are that actives of the firm and the networks partners are important for the conceptualization of the business model that has been proposed. Furthermore business models aims at explaining both value capture and value creation (Zott et al. 2011, p. 1020). The business model concept uses a holistic approach towards explaining how the firm does business (Zott et al. 2011, p-1020).

The different definitions of business model ranges from being the realized strategy to the architecture the product, service and information flows (see Timmers, 1998; Hedman & Kalling, 2003; Amit & Zott, 2001; Zott & Amit, 2010; Chesbrough et al, 2006; Chesbrough, 2007A; 2007B, Teece 2007, 2010; Magrette, 2002; Morris et al, 2005; Johnson et al. 2008; Casadesus-Masanell & Ricart, 2010). Due to the lack of consistency within the field, we will not add a new definition, but instead use the definition of Zott et al. (2011). We hope that this will help the field of business models by adding theoretical knowledge to a widely used definition.

In this thesis we view the Business model as following; “…as a new unit of analysis, offering a systematic perspective on how to “do business,” encompassing boundary-spanning activities (performed by a focal firm or others), and focusing on value creation as well as on value capture.” (Zott et al., 2011, p. 1038).

There is criticism to the business model concept. Porter (2001) argues that the business model concept is a too simple constructs to be valuable and that it is “murky” at best. Other criticism of the business model concept is that it lack independence towards other levels of analysis and that it overlaps with other concepts (Arend, 2013). We argue that the criticism is largely due to the lack of consensus within the field of business model and that the ambiguity within the field affects the view of the field negatively. Zott et al. (2011) present signs of convergence within the field. We recognize that the business model concept is an important new concept of analysis and in this thesis we aim to extend the knowledge of business model by building on earlier research from the field. By building on earlier research the field will move forward and the understanding of the business model concept extend.

As there is no consensus regarding the business model definition there is also a number of different views on what the business model consist of. These elements of the business model are often discussed in terms of dimensions, elements or factors. In this thesis we will use the term business model dimensions in order to describe these dimensions, elements or factors that are the building blocks of the business model. Different
researchers has identified and clustered between four and twelve dimensions (see; Hedman & Kalling, 2003; Osterwalder et al., 2005; Osterwalder & Pigneur, 2010; Shafer et al., 2005; Morris et al. 2005; Halme et al., 2007; Chesbrough, 2007; Demil & Lecocq, 2010; Mason & Springer, 2011; Tsvetkova & Gustafsson, 2012; Frankenberger et al., 2013).

1.3 Business model innovation

Business model innovation is a source for competitive advantage according to; Hamel, 2000; Chesbrough and Rosenbloom, 2002; Mitchell and Coles, 2003; Chesbrough, 2007A; Baden-Fuller and Morgan, 2010; Teece, 2010. The factors that have put business model innovation in focus are drivers such as globalization, deregulation and technological changes, which are profoundly changing the competitive game (Casadesus-Masanell & Ricart 2010, p. 195). Lambert & Davidson (2013) present a literature review of empirical studies concerning business models between 1996 and 2010. They conclude that there are three major areas of study which the empirical research on business model falls in to;(1) business model as a basis for enterprise classification, (2) business models and enterprise performance and (3) business model and innovation. Furthermore, IBM’s Global CEO Studies (2008, p. 48-56) show that top management in a broad range of industries are seeking guidance on how to improve their ability to create and capture value by innovating their business model. At the same time, the Economist Intelligence Unit (2005, p. 9) found that over 50 % of executives thought that business model innovation will be a greater source of competitive advantage than new products or services.

In previous years, many authors have proven that a business model innovation can lead to success for companies (Chesbrough & Rosenbloom, 2002, p. 550-552, Teece 2010, p. 186). According to Chesbrough (2010, p. 354) technology has no single objective value, but when the technology is commercialized through a business model the economic value is created. Chesbrough (2010, p. 354) continue by stating “A mediocre technology pursued within a great business model may be more valuable that a great technology exploited via a mediocre business model”. The importance of the business model innovation is also highlighted by Johnson et al. (2008, p. 52) who argues that 11 of the 27 companies that made it into the Fortune 500 the past 10 years (from 2008) did so through business model innovation. In order to succeed, a company cannot only rely on a good product or service, it also has to have a good business model that can capture the economic value derived from the product or service. In the ever changing business environment companies need to be able to quickly adapt and innovate their business model in order to continue having a competitive business model.

Schneider and Spieth (2013) elaborate on the concepts of business model innovation and business model development. Being able to identify potential improvements that could lead to continuous innovation is a requirement for a firm who wants to develop its business model. The improvement is usually done by small adjustments that are expected to lead to financial improvement. Business model innovation derives from the uncertainty in the environment as a potential source of opportunities that can be exploited by the firm. The challenge for the firm is to detect and recognize opportunities. (Schneider and Spieth 2013, p. 1340001-20 - 1340001-21)

In order to create a new business model, there must first exist an idea about what the new business model should be like. However, previous research has failed to address
which idea generation methods are most suitable for business model innovation (Eppler et al. 2011, p. 1323-1324). Brettel et al. (2012) argues that through understanding the relationship between the focal firm and its external stakeholders this could help companies improve their business model and move the academic research on business model forward. Hienerth et al. (2011, p. 345) argues that one important factor for innovating a business model is the co-development relationships. Based on this it is surprising that there have been so few studies on customer involvement in business model innovation.

One of few studies of customer involvement in business model innovation is that of Pynnönen (2008) and Pynnönen et al. (2012). These studies have studied customer involvement in business model innovation within an information and communication technology (ICT) company. By using company experts to identify potential important factors for the customers and then letting customers rate how important different factors are to them, they have used this insight to innovate the business model. We believe that through better understanding how customers could or could not be used or involved in business model innovation there is much to gain for companies wanting to innovate their business model. It will also be valuable from an academic perspective since it could help develop the understanding of customer involvement in business models.

1.4 Research problem
Based on the discussion above we identify and recognize the business model as a unit of analysis that has a more holistic approach to the firm. We further argue that firms can innovate or develop their business model as they can innovate or develop their service or product. In both service and product innovation there is a number of studies regarding customer involvement in innovation and development. However in the business model innovation research there are few studies of how customers can be involved as a resource for business model innovation and development. There is one recently published master thesis concerning the topic from Tampere University of Technology, Lukkaroinen (2013) and the studies of Pynnönen (2008) and Pynnönen et al. (2012). Other than this we have found no other studies of customer involvement in business model innovation. Therefore we argue that there is a lack of understanding of how customers affect the business model and how customers can be utilized for business model innovation or development.

1.5 Research Question
Based on the background and research problem presented we present the following research question.

In which business model dimensions can the customer be a resource for business model development and/or innovation for a medical instrument firm?

1.6 Purpose
As stated above the number of studies regarding business models and stakeholders are limited, even more limited are the studies of business model innovation and customer involvement. Within the field of business model innovation there is a distinction between business model development and business model innovation. Therefore the purpose of this thesis is:
• To explore in which business model dimensions the customer can be a resource for innovation or development.
• Explore if there is any difference between the different customers roles and how they can be used as a resource for innovation or development in the business model dimensions.

1.7 Limitations
We are limiting the study to the medical instrument industry; this is presented in the second chapter of this thesis. Furthermore we limit our study to Sweden. This has some implications for the study. First, limiting the study to the medical industry could have an effect on the results due to the customers four parted role in this industry. The customer consists of four different roles (1) the patients (beneficiary of the product), (2) nurse (user of the product) (3) doctor (user of the product) and (4) purchaser or manager (who makes the purchasing decision). The difference between the nurses and the doctors is mainly that they have different training and that they might use the instrument in different ways. Therefore we have chosen to view these two groups of users separated from each other. This study will also be limited to the idea generation phase of business model innovation. This means that we will only study how ideas from customers can be a source for business model innovation and we will not study how customers can be used at another stage in the innovation process (e.g. evaluation of business model ideas).
2 Presentation of case context
In this chapter we will give an explanation to the context of this study, the industry and the company which business model is central to the empirical study.

According to MedTech Europé (2012, p. 6) the Swedish market for medical technology is worth around 30 billion SEK. Swedish companies operating within this sector had combined yearly net sales of around 85 billion SEK (Swedish MedTech, 2013, p. 2). Within this industry it is becoming more and more important for medical companies to innovate its products and the time to market makes it harder for small companies to come out with economically viable products (Davey et al. 2011).

We also find the different customer roles in this industry interesting and not only relevant to the medical instrument industry but to all industries working towards publicly founded customers, such as elder care, schools etc. As we view this industry there are four different distinct customer roles that all has a relationship with the company but in different ways. First is it the patients, who are the beneficiaries of the product/service, if no patient had need for the companies value proposition there would be no market for it. Second is the nurses’ who benefits from using the product/service. Third is the doctors’ who also benefit from using the product/service. Fourth is the managers who take the purchasing decision and might benefit in terms of cost saving, more effective care or higher quality in the care. The reason that we separate nurses and doctors in to two separate groups is that they differ in the amount of training they have and also differ significantly in their responsibilities and work tasks.

We believe the size of the market, the need for innovation and the complexity of the different “customer groups” to be interesting aspects of the industry and this is why we decided to study a company in this industry.

2.1 The company
In order to answer our research question we looked for a company that needed to innovate or develop its business model. The company we found and chose to study is operating within the ophthalmic industry. The company is a product selling company with a product that is the result of many years (+5 years) of research and several millions of investment.

The company was founded in early 2000 and when the product was developed (2008-2009) the goal was to expand international right from the start. The initial work was focused on building the organization and influencing key opinion leaders within the field of ophthalmic. During this time the company sold a number of instruments. When the financial crisis struck the venture capitalist backing the company stopped all its funding and the company went bankrupt.

In June 2012 a group of business angels acquired the bankrupt company and since then the company has been working on getting CE-approval (needed in order to legally sell medical products within EU) and start the actual business. The company has had some products out for testing at health care centres in the northern part of Sweden and final CE-approval is expected to be received during spring 2014. Due to the earlier bankruptcy the new investors want to explore the possibility to develop or innovate the business model in order to find an alternative way to create value for the customer and how to capitalize on this.
2.2 The product

The purpose of the product is to help doctors and nurses examine and potentially diagnose glaucoma, which is a disease that affects 200 000 people in Sweden (S:t Eriks Ögonsjukhus, 2014). The process of examination starts with a doctor or a nurse that puts anaesthetics in to the patients’ eye. Right after that the doctor/nurse asks the patient to put his/her head in front of a bio-microscope where the product attached (See figure 1). When that is done the product softly touches the patients’ cornea, which helps the product determine the eye-pressure (which is an indicator for glaucoma).

2.3 The healthcare sector

The medical industry in Sweden is highly regulated and there are a number of customers buying medical instruments. The main groups are the county councils, the private care companies and the Swedish municipalities. In Sweden there are 21 county councils (Landsting) that are responsible for healthcare within their respective region. Across these 21 geographical areas there are 80 hospitals and approximately 700 public health care centres (Socialstyrelsen, 2012, p. 29). Since the de-regulation of the healthcare in Sweden the number and buying power of private healthcare companies has grown. There are now approximately 500 private health care centres in Sweden (Socialstyrelsen, 2012, p. 29). The third group is the Swedish municipality and one of their responsibilities is the elderly care (Sveriges kommuner och landsting, 2009).

The company which business model we are originating from have their current customers at health care centres owned and operated by mainly two county councils. Therefore will we in this thesis focus on the publicly owned, managed and founded health care, mainly in the form of healthcare centres.

2.4 Regulation

Since we are studying customers within the public healthcare sector there are some regulations that regulate the purchasing behaviour of new products and services that have to be explained.

The general rule is that the product/service need to be purchased from the central purchasing unit at county council (Landstinget). The purchasing authority (e.g. hospital or health care centre) is not allowed to purchase directly from one specific seller with few exceptions. The exceptions are called direct procurement, which can only be used when the cost of the procurement is relatively low (below 270 964 SEK for county councils) according to 2 kap. 23 § LOU. (Konkurrensverket, 2014, p. 9-11)

According to our interviewees at a health care centre the process of procurement goes as follows: (1) first the need for a new product need to arise. (2) Once the need has been identified the manager turns to the purchasing unit at the county council who (3) then creates an announcement stating that specific need. (4) Sellers can then create an offer that they deliver to the purchasing unit. (5) The purchasing unit then review all the offers and decide on one who gets the contract to serve the specific need.
3 Methodology

3.1 Authors background and its effects
It is important to reflect on the authors’ experience and background as it affects their knowledge and how they interpret the world. We will start by discussing our theoretical background and experience in the field and then move on to our practical background and experience.

Both authors have bachelor degrees within business administration, one (Jonas Sandell) with specialization in organizational change and entrepreneurship in organizations and the other (Andreas Ekdahl) with specialization in service marketing. The authors is currently in their final semester of the master program in Strategic Business Development, where they have taken courses in strategy, entrepreneurship, operation management and Lean. One theme in the prior studies of both authors is the focus on both customer and frontline employees (the employees meeting the customer), which are important actors in development and change for an organization. This has definitely influenced the direction of this study and this focus might also affect the authors to believe that customers are a more important resource than they might be. The authors might have had a more narrow view on which dimension the customers could potentially be a resource, for innovation and development, if the authors would have had a more technical background. An example of this is the study conducted by Pynnönen et al. (2012) which used industry professionals to identify what characteristics the customer though were important. In this study the customer were asked to rank the importance of the different characteristics and based on this the authors draw conclusions on how the company could develop their business model. We believe that this approach could lead to that the company does not benefit to the full extent from the customers ideas and views since the characteristics are already set based on the industry professional preconceptions of what is important.

From a practical perspective both authors has worked for a couple of years prior to starting their university studies. One, Andreas Ekdahl, has mainly worked in manufacturing industry and one, Jonas Sandell, mainly in tourism and hospitality industry. Both has always had ideas on how the organizations they worked in can develop and become more effective. However both authors have also experienced that all employees does not have the same interest and number of ideas regarding development and improvements. This could have the implication that both authors has an over belief in the number of ideas that individuals has regarding the context they operate in.

3.2 Research Philosophy
In order to understand the research better we argue that it is important to know what view the researchers have on the world and knowledge. We align ourselves to the position of pragmatism and therefore take origin in our research question to choose what epistemology, ontology and axiology we adopt in this study (see Saunders et al, 2009). Saunders et al. (2009, p. 109) explain pragmatism has a pragmatic view on ontology, epistemology and axiology and that the research question should determine these choices. If the research question does not suggest unambiguously either positivist or interpretivist philosophy then the pragmatist position is that it is perfectly fine to work with variations of interpretivist and positivist philosophy through your ontology, epistemology and axiology (Saunders et al., 2009, p. 109).
In light of our research problem: “In which business model dimensions can the customer be a resource for business model development and/or innovation for a medical instrument firm?”, our goal is to gain insight to what dimensions the customer can be a resource for business model development and/or innovation. As we discuss in the problem background and elaborate further on in the theoretical chapter there is a lack of consensuses regarding the business model concept and it is a concept which boundaries can be hard to grasp. Furthermore the research within customer involvement in business model innovation is very limited and therefore our study has to some extent an exploratory approach. Customers in the medical industry are patients (benefit from the product/service), doctors or nurses (uses the product/service and benefit to some extent) and managers or purchasers (which make the buying decision but seldom uses the product/service themselves). These different customer roles view the business model from different angles to some extent. All together this leads to a phenomena that is not comprehensively researched, hard to grasp for people outside the field and which different customers might have different relation and view of. Due to this we need to try to understand in which dimensions the different customer can be a resource and in order to do this we will need to interpret their thoughts and ideas.

Bryman (2011, p. 37) describes that constructionism is an ontological perspective that view social phenomenons as constructed by participants and the researchers’ description of this social reality are also a construct. Our ambition is to try to understand our respondents' views and ideas and interpret in which dimension of the business model the customer has ideas and therefore can be used as a resource. Our knowledge of this is the interpretation and analysis of their different structures and thus also a construction. An alternative ontological position of constructionism is objectivism (Bryman, 2011, p. 36-37). Objectivism is based on the view that social phenomena’s exist independently of its actors (Bryman, 2011, p 36).

Bryman (2011, p. 29) and David and Sutton (2011, p. 39) describes epistemology (theory of knowledge) as: what is or what can be considered as knowledge in an area. One of the key issues in epistemology is whether one can use the methods of natural science to study social reality. The naturalism view of knowledge (positivism) is based on that it is possible to study the social reality using methods of natural science (Bryman, 2011, p. 29-32), that it is possible to gain hard, secure and objective knowledge about the external reality (Carson et al., 2001, p. 4). Interpretivism differs from the positivist view of knowledge and believes that people and their institutions differ from phenomena’s in natural science. Sewandt (in Denzin & Lincoln, 2000, p. 191) describes that an interpretivist point of view distinguish between a movement of a physical object and a (social) action is that the (social) action is by nature meaningful. We believe that we cannot identify the true reality but only try to interpret it as we study social interaction and human interpretation. In order to find meaning in an (social) action it is required that one interpret in a certain way what the actors are doing (Sewandt in Denzin & Lincoln, 2000, p. 191). How we interpret these social actions is described through our methodological chapter. Through the interpretations we make in this study we hope to contribute to a better understanding of the area we are studying, we are therefore closer to an interpretative perspective than a positivist conception of knowledge.

To summaries our views on ontology and epistemology we have in this study is based on our research question, which is closest to a constructive ontology and interpretivism
epistemology. However we recognize that future studies of the same phenomena could imply other research philosophies. Especially since one main reason for our view is that we are exploring a largely unreached topic. An example could be that based on our conclusion in this paper future research could try to test these findings with more quantitative method and in this it would be natural to have research philosophy closer to natural science.

3.3 Research approach
In this study we take origin in theories of business models, business model innovation and customer involvement. Through these theories we have created an understanding of the field and based on this we have created the questions used in our interviews. The theoretical framework we created based on existing theories will be the framework for our analysis. This is closer to a deductive method rather than an inductive method. However a more pure deductive study would focus on creating hypothesis and testing these with a quantitative method. In our case we use existing theory to have a framework for what to look for in our interviews and this is somewhere between inductive and deductive method. Saunders et al. (2009, p. 124-126) describes induction as emphasizing the building of theory and deduction as testing theory. In our study we will be somewhere between these two and since we take origin in earlier theory we are closer to deductive method than inductive method.

3.4 Research design
The research question guides the research and is the overall direction of the study, furthermore the research question is also the foundation for in which are the study aims to progress the research. In order to answer the research question a plan for how to do this is needed. The research design is determined by the research question (Saunders et al. 2009, p. 136; David & Sutton, 2011, p. 12) and the research design is the framework for how to collect and analyze data (David & Sutton, 2011, p. 204).

The purpose of a research can either be exploratory, descriptive or explanatory according to Saunders et al. (2009, p. 139). Exploratory research focus on probing the causes of phenomena and clarifying if a problem really is a problem or not, it is in the nature of this research that sometimes the result is that there is no problem or that further research is not interesting to pursue. Descriptive studies focus on describing the actors, events or situation of a phenomenon. Explanatory research is the approach for finding casual relationships between variables. Saunders et al. (2009, p. 139-140).

As we discussed earlier there is little research concerning customer involvement in business model innovation. Based on this and our research question our purpose is exploratory. Our study will have the form of a case study and we will collect our data through multiple interviews. David and Sutton (2011, p. 165-166) describes that case studies which are exploratory or descriptive often are more qualitative then explanatory case studies that more often are quantitative in their approach. In the practical method we will elaborate further on the design of our interview questions and our sample.

3.5 Literature search
The first step in the literature search was to identify relevant keywords. This step started before the writing of this thesis officially started, during our master level courses both authors discussed and read a lot about the business model concept, business model innovation and customer involvement. When the subject was set for this thesis we also discussed this with employees from both the entrepreneurship and marketing divisions.
of the business administration department at Umeå School of business and economics. David and Sutton (2011, p. 56-57) describes that the first step in a literature search is identifying relevant keywords and a good way to identify these is discussing the topic with tutors, peers and librarians.

From this first step we originated with a number of key words, examples of these are; Business model, stakeholder, customer, communication, literature review, innovation. We mainly combined business model with the other key words to identify peer-reviewed articles. Initially we focused on finding recent literature reviews related to our subject that could help us get an overall picture of the subject. Examples of these literature overviews are; Schneider (2013), Zott et al. 2011, Burkhart et al. (2011), Schneider and Spieth (2013). Based on the literature overview articles we identified new keywords. Our focus was to identify articles that studied business models and business model dimensions and/or customers and/or stakeholders’ relationship with the business model. We searched for articles mainly through Business Source Premier (EBSECO) and Emerald Journals. The databases were accessed through Umeå University Library. Some of the articles, such as Schneider (2013), were not available digitally through the Umeå University Library and therefore we had to order these through Umeå University Library.

As a complement to the articles identified through searches in the databases, we also looked into the references that were used in the articles we found. Our aim with this was to not miss any substantial earlier research in the field and also to read the sources first hand and not only through later publications.

Due to the width of the subject (business model) and the lack of clear and widely acknowledged definition of the business model concept we had to go through a large number of articles that we did not find relevant for the thesis. We have used approximately 80 articles in this thesis and we have approximately screened 200 articles in total.

Besides the articles used in this thesis we have also used a number of books, these have mainly been accessed through the Umeå University Library.

3.6 Source criticism

Source criticism is about evaluating and assessing the credibility of the origin of our knowledge (Thurén 2005, p.7). Source criticism is limited to be about humans and human activities (Thurén 2005, p.7). Furthermore, Thurén (2005, pp. 7-9) states that source criticism is about interpreting their sources and find out what is true or likely. Below we explain how we selected and evaluated the sources used in the study.

In the work with this thesis our aim has been to find and use sources with high level of credibility. To succeed with this we have tried to use only scientific articles and literature. The articles we used are as far as possible only from established journals, peer-reviewed and well quoted. Our aim has been to find articles that are based on comprehensive empirical material. However, this has been hard to find, especially articles with solid empirical material concerning business models. This is because the field of business model is relatively young, at least since it gained a broader acceptance. Due to this we have tried to balance between both relatively newly published articles as well as older well-quoted articles. Furthermore we have tried to only use first hand sources and not quoted source through other sources. We have done this in order to build our own understanding regarding the original source rather than just accepting
someone else perception of that source. A number of sources lack the clear empirical background that we have been looking for. Both Arend (2013) and Burkhart et al. (2011, p. 11) describes that research of business model lack large-scale empirical analyses.

A common critique towards the field of business model research is that it lacks of consensus regarding definitions of central concepts (see e.g. Arend (2013) and Zott et al. (2011)). This is also something we have experienced in our study of literature for this research. There is different constructs on what to include and how to cluster the dimensions in the different studies and definitions of the business model dimension. The lack of large scale empirical studies is also an issue. In order to deal with these issues we have tried to look at a large number of different studies of business model dimensions and based on this construct our own definition of what dimensions the business model consist of.

We have tried to keep the sources in this thesis that are not scientific literature or articles published in scientific journals to a minimum. However we have used a few and these are mainly sources that concern the context of this study, medical instrument industry and Swedish healthcare. In the selection of this source we have aimed at only using publications from well-established organizations, governmental agencies’ or companies.

To summaries; our source are affected of the lack of common definitions in the field of business models and the lack of empirical studies. We have tried to handle this by using a large number of sources and building our study on previous studies in order for the field to move forward and hopefully widely accepted definitions of key concepts will
4 Theoretical point of origin

4.1 Business model

4.1.1 Business model concept
In this chapter we will elaborate on the origin of the business model concept and discuss the different views and definitions of the concept. There is a critical discussion regarding the concept and this discussion will we discuss more thoroughly in the chapter “Criticism of the business model concept”.

According to Burkhart et al. (2011, p. 4) the business model concept was already mentioned in publications from 1957 and 1960. However it is not until the late 1990s that the business model concept started to gain more interest from the research community (Burkhart et al. 2011, Zott et al. 2011). From 1995 there has been at least 1177 articles published in peer review journals that mentions business model (Zott et al. 2011, p. 1019-1020). With this in mind and with regard to the increasing number of articles concerning business model both in academic and non-academic journals (see Zott et al. 2011, p. 1023), it might seem strange that there is no clear definition of the business model concept (see Zott et al., 2013, Morris et al. 2003). In a literature review of peer-review articles concerning business models Zott et al. (2011) identifies that one reason for the lack of consensus regarding the business model concept might be that the different areas of business model research have been developed separately from each other. The three areas of business model research (according to Zott et al., 2011) are; (1) e-business and the use of information technology in organizations, (2) strategic issues, e.g. value creation, competition and firm performance (3) technology and innovation management (Zott et al. 2011, p. 1020).

One of the early definitions is that of Timmers (1998, p. 4), who defines the business model as “an architecture for the product, service and information flows, including a description of the various business actors and their roles; and a description of the potential benefits for the various business actors; and a description of the sources of revenues.” This is according to Burkhart et al. (2011, p. 6) one of the most cited definitions of business model. A search on Google scholar (2014-02-24) also shows that the article by Timmers is cited 2101 times. Timmers defines the business model as the architecture for product, service and information flows. Furthermore the title of the article is “Business Models for Electronic Market” and it is published within a journal called Electronic Markets. This is a good example of a definition rooted in the e-business area of business model research. Teece (2010, p. 173) defines the business model as following “A business model articulates the logic, the data, and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value.”. In this definition the importance of the data is similar to the importance of information as in Timmers definition. Both definitions are close to the e-business and information technology research stream of business model research.

Closer to the area of strategy is the definition of Morris et al. (2005, p. 727), a business model is a “concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets”. However Morris et al. (2005) argues that although business model includes a number of elements from strategy the business model concept is not synonymous to strategy. Casadesus-Masanell and Ricart
(2010, p. 195) defines the concept as even closer to strategy; “A business model is . . . a reflection of the firm’s realized strategy”. As there is no consensus regarding the definition of the business model there is neither any consensus concerning the distinction between strategy and business model. Seddon et al. (2004) examines and discusses the similarities and differences between business model and strategy and present the following summary; “If Porter [1996, 2001] is used to define strategy, a business model may be defined as an abstract representation of some aspect of a firm’s strategy. However, unlike strategy, business models do not consider a firm’s competitive positioning.” We argue that this is a good definition of the difference between strategy and business model, two companies can have the same business model but have different strategies for how to position themselves in the market. This distinction between strategy and business model is coherent with the view of, for example, Teece (2010, p. 179-180) as well as Osterwalder and Pigneur (2005, p. 10), who views competition and implementation as part of a firm’s strategy.

A more technical approach to the definition of business model is that of Chesbrough and Rosenbloom (2002, p. 529-532), they define the business model as the “...heuristic logic that connects technical potential with the realization of economic value.”. The setting of Chesbrough and Rosenbloom’s (2002) study is also that of a more technical since they focus on the role of business model in capturing value from innovation and studies spin-off companies of Xerox Corporation.

One contrasting view to the technically focused definition of Chesbrough and Rosenbloom is the definitions focused on value creation by Johnson, et al. (2008, p. 52). They define it as “... [Business models] consist of four interlocking elements [customer value proposition, profit formula, key resources and key process] that, taken together, create and deliver value” (Johnson, et al., 2008, p. 52) and focus on the value creation and delivery. Another definition that also focus on value creation is that of Amit and Zott (2001, p. 511) who defines the business model as “...the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities”. In later work of Amit and Zott they include that the business model spans outside the boundaries of the focal firm (see Zott & Amit, 2010), this view is shared by Lamber and Davidson (2013) among others. Another somewhat simplistic definition that also focus on the business model as a concept that spans the boundaries of the focal firm is that of Magrette (2002, p.4), who defines business models as “stories that explain how enterprises work”. A contrast to Magrettes abstract definition is that of Osterwalder et al. (2005) which defines the business model as a conceptual tool, which has a set of components and which determines the relationships of those elements.

In a literature review by Zott et al. (2011), they synthesis a definition of the business model based on the earlier research within the field. They view the business model; ”...as a new unit of analysis, offering a systematic perspective on how to “do business,” encompassing boundary-spanning activities (performed by a focal firm or others), and focusing on value creation as well as on value capture.” (Zott et al., 2011, p. 1038).

As we have showed, there is no clear consensus on the definition of business model within the field. The definitions range from being highly abstract (e.g Magrette 2002), realized strategies (Casadesus-Masanell & Ricart, 2010), architecture of the product, service and information flows (Timmers, 1998) and more. Due to the lack of
consistency within the field, we will not add a new definition, but instead use the
definition of Zott et al. (2011). We hope that this will help the field of business models
by adding theoretical knowledge to a widely used definition. Furthermore we recognize
Seddon et al. (2002) distinction between business model and strategy, were business
model unlike strategy do not consider competitive positioning.

4.1.2 Criticism of the business model concept
There are mainly two types of criticism of the business model concept. The first is
criticism from within the field itself (e.g. Al-Debei and Avison 2010, Zott et al. 2011,
Magretta 2002, Chesbrough & Rosenbloom, 2002). The second critic is coming from
outside the field of business model research and the business model concept (e.g. Porter

Porter (2001, p. 73) argues that the business model concept is a too simple construct to
be valuable and that there is no value in evaluating a business model independently
from the industry structure. Furthermore Porter (2001, p. 73) argues that the business
model concept is “…an invitation to faulty thinking and self-delusion” to management.
The business model concept is “murky” at best in Porters notion (Porter, 2001, p. 73).

One of the latest critical articles concerning the business model concept is that of Arend
(2013). Arend highlights five concerns regarding the business model concept and
research; (1) that the business model overlap with other concepts, levels of analysis and
theories, (2) lack of independence towards other levels of analysis, (3) whether a
business model can define a unique level of analysis, (4) lack of consistency regarding
the definition of business model and (5) lack of solid empirical support.

From within the field of business model Arend’s article has not gone unquestioned. Zott
and Amit (2013) address the critic from Arend and recognize that the lack of coherency
regarding the definition of the business model concept is a problem. Arend himself uses
a very wide definition of the business model concept, “…a “description” of how a
traditional venture operates…”(Arend, 2013, p. 2013). This type of wide definition is
part of the problem and in order for the field of business model research to move
forward there is a need for future research to build on and acknowledge earlier studies
in the field.

Based on the critic presented above and the critic regarding unity concerning the
definition of the business model concept from within the field (as discussed earlier), we
argue that the main reason for the critic is the lack of clear and widely acknowledged
definition of the business model concept. Zott et al. (2011) present signs of convergence
regarding the definition. Due to this we argue that it is important that future research in
the field builds on earlier research and that future studies strive towards bringing a
consensus regarding the central concepts of the field. As a step in this we in this thesis
use a definition to the business model concept that is the outcome of a wide literature
review.
4.2 Business model innovation

4.2.1 Business model innovation

Business model innovation is a source for competitive advantage according to; Hamel, 2000; Chesbrough and Rosenbloom, 2002; Mitchell and Coles, 2003; Chesbrough, 2007; Baden-Fuller and Morgan, 2010; Teece, 2010.

In 2001 Zott and Amit (p. 511) define business model innovation, “...[business model] innovation refers not only to products, production processes, distribution channels, and markets, but also to exchange mechanisms and transaction architectures.”. Furthermore they recognize that the business model concept is consistent with Schumpeter´s (1942, referred through Zott & Amit, 2001) view that innovation is an act of creative destruction. One important factor is that the emergence of e-markets opens new source of innovation (e.g. business model innovation) (Zott & Amit, 2001 p. 516).

Besides Zott and Amit’s definition there has been a number other definitions (e.g Mitchell & Coles, 2003; Mitchell & Coles 2004; Chesbrough, 2010; Demil & Lecocq 2010; Teece 2010). Frankenberger et al. (2013. p. 252-253) summaries earlier research from, Amit and Zott, 2001; Mitchell and Coles, 2003; Chesbrough, 2010; Demil and Lecocq, 2010; Teece, 2010, and concluded that “... a business model innovation can be defined as a novel way of how to create and capture value, which is achieved through a change of one or multiple components in the business model...”. Furthermore Frankenberger et al. (2013. P. 253) concludes based on Hamel (2000), Mendelson (2000) and Mitchell and Coles (2003) that a business model innovation exceed the scope of a new service or product offering, the business model innovation opens new opportunities to how to engage in economic exchanges.

In the field of product innovation and service innovation research there is a widely accepted distinction between incremental and radical innovation (e.g., Ettlie et al. 1984, Tushman & Anderson, 1986, Droge et al., 2009). de Brentani (2001, p. 169-170) argues that many studies concerning product innovation fail to recognize the importance of the degree of innovativeness. However even thou this classification is widely accepted Garcia and Calantone (2002) concludes that there is no consensus regarding the definition of incremental innovation and radical innovation. Their literature review focus on the field of product innovation research and based on this they also present a framework for classification. Incremental innovation incorporates product innovations using existing technologies and targeted to existing markets. Really new product innovations (somewhere between incremental and radical) results in new technologies to existing markets or new markets to existing technologies. Radical innovation will result in new technologies for new markets, these innovations are rare and example of these is the steam engine and the World Wide Web. (Garcia & Calatone, 2002, p. 126-127).

Interesting to note is that Frankenberger et al. (2013) do not define “novel” in regard to their definition. We believe that there are different degrees of innovation is an interesting dimension also with concern to business model innovation. We believe that the degree of innovativeness is also important for business model innovation.

If applying Garcia and Calatones terminology to business model innovation (with regard to the definition used in this thesis) incremental business model innovation would be to change one or more business model components without changing the
value that is created or captured. Really new business model innovation would be if a majority of the components were changed or if the value that is captured/created is changed without changing a majority of the old components. An example could be Spotify who created a new way of distribute music (change in business model components) but the value that is created is the same as before (enjoying music). Radical business model innovation would be when a majority of the business model components and the value that is captured/created is changed. An example could be apples iPhone that changed the industry from delivering cellphones with predetermined hard- and software to a cellphone with software that could be customized by its customers.

In a literature review concerning business model innovation Schneider and Spieth (2013, p. 20-22) discuss the difference between business model development and business model innovation. They view business model development as continuous innovations or improvements of the existing business model, the process of development is identification of opportunities for improvement, adjustment and results. Business model innovation is focused on seeing uncertainty in the environment as a source of opportunities, the process for this is exploration, exploitation and effects. (Schneider & Spieth, 2013, p. 20-22). We argue that this view is consistent with that of Garcia and Calatones.

Another dimension to the discussion of degree of innovation that is business model specific is that of Cavalcante et al. (2011). They argue that a change initiative is neither disruptive (radical) or incremental per se but rather that it is either more or less radical (or incremental) with respect to the specific organizational core processes.

One major difference between Garcia and Calatone view on product innovation and Cavalcante et al.’s view of business mode innovation is the view on the firm. Garcia and Calatone (2002) discuss product innovation on a macro level where really new concern either new technology or new market (at a macro level). However Cavalcante et al. origins from the organization and argues that a business model innovation is more or less radical with regard to the current business model. There is a clear difference here in what level the analysis is on. As we see it both is right to a large extent, the degree of innovation is interesting both at a macro level (Garcia & Calatone) but also at an organizational level (Cavalcante et al.). Therefore we recognize that an innovation can be incremental, really new or radical both at an organizational level and on a macro level. This also implies that a business model innovation could be radical on an organizational level but not be an innovation at all in a macro level.

4.2.2 Business model innovation process
Business model innovation is a tool for firms to achieve superior performance and reach desirable goals (Frankenberger et al. 2013, p. 250). The questions of how to achieve business model innovation are widely neglected in previous research that sees the business model as something static (Frankenberger et al. 2013, p. 250). Some authors mention the business model innovation process, but they do not elaborate much on the concept. For example, Mahadevan (2004, p. 4) mentions that a framework for business model innovation have three main ingredients; recognizing the need to mitigate the business model to the next cycle as value shrinkage occurs; exploiting new value creating opportunities and sustain the innovation. More authors who touch on the subject are Bucherer et al. (2012) and in their study the respondents identified four phases of business model innovation processes, which are analysis, design,
implementation and control. However, their predictions about the actual business model innovation process remain, in most parts, unanswered. Therefore, the core elements and the processes of business model innovation are largely unknown. (Schneider and Spieth, 2012, p. 19) In our investigation of business model innovation processes we have only found six articles that elaborates on the business model innovation subject, whereas only two of them propose a model containing the whole innovation process. For customer involvement in business model innovation processes we only found three articles.

In response to the lack of research on business model innovation processes, Frankenberger et al. (2013, p. 250) proposed a framework that described the process stages of business model innovation, as well as the key challenges that firms face at each stage. The purpose of the framework is to support managers in innovating their firm’s business model (Frankenberger et al. 2013, p. 250). The framework is built in prior research on innovation processes and a case study of 14 business model innovation projects within six different multinational companies. The study identifies four process phases for business model innovation, which are: (1) initiation, (2) ideation, (3) integration and (4) implementation. (Frankenberger et al. 2013, p. 250-251)

In business model innovation processes, the initiation phase can be described as activities focusing on the understanding and monitoring of the surrounding ecosystem of the firm. Customers, suppliers, competitors, universities and government are part of the ecosystem that influences the operations of the focal firm. Sheehan and Stabell (2007, p. 22-29) also recognize the need to monitor the firm’s external environment, mainly its competitors, in order to analyse where potential opportunities might arise for the focal firm. Frankenberger et al. (2013, p. 260-261) recognize that there are two main challenges that firms face during this first phase. The first challenge is to understand the need of all players, since their needs and moves influence the focal company that makes it important to monitor them closely. The second challenge is the identification of change drivers that can initiate business model change and trigger re-thinking of the business model. (Frankenberger et al. 2013, p. 260-261)

The ideation phase focuses on the generation of ideas for potential new business models, which concerns the transformation of opportunities identified in the previous stage into concrete ideas for a new business model (Frankenberger et al. 2013, p. 260-261). In Sheehan and Stabell (2007, p. 22-29) framework the previous analysis of industry characteristics and different players positioning within the industry is the foundation for generating ideas for business model innovation. However, Chesbrough (2004, p. 23) states that closed innovation is no longer sustainable and that the firm can and should use external and internal ideas in order to create additional value. One source of innovation is co-development partnerships, which is an effective method for innovation the business model (Chesbrough & Schwartz, 2007, p. 55). This can help the focal firm to improve innovation effectiveness and deliver new products, technologies and services to the market (Chesbrough & Schwartz, 2007, p. 55). In order to generate new business model innovations, the innovation team need to consider and understand various and potentially conflicting positions of the stakeholders affected (Eppler, et al. 2011, p. 1324). Two specific supporting conditions and requirements for the business model innovation process is structure and guidance to frame and focus thought and the creation, sharing and integration of knowledge across epistemic boundaries. Artefacts may provide structure and focus (Henderson 1991, p. 268) an example of such an artefact could be the business model canvas by Osterwalder and Pigneur (2010).
Like the previous phase, there are some challenges connected to this phase. The first challenge is to overcome the current business logic and industry logic to “think out-of-the-box. Second, a challenge can occur because people within the organization might have a hard time thinking in “business models”, since they have previously been thinking about new product or service development when solving problems. Third, there are no systematic tools to develop business model ideas and without it the support for new business model ideas might be neglected. This lack of tools might also influence firms to use systematic and previously tested methods focusing on product or service development instead of business model innovation. (Frankenberger et al. 2013, p. 260-261)

Integration is the third phase and the activities within this phase focus on the development of new business models based on the opportunities and ideas identified in the previous phases. In order to transform the ideas in to a viable business model, Frankenberger et al. propose using the business model dimensions as a lens in order to get insight of how the whole business model will function. The challenges that were identified are that companies might find it hard to integrate all parts of their new business model and the management of partners. New business models need to be integrated and aligned with the firm’s business partners, which might require a lot of discussions and convincing. (Frankenberger et al. 2013, p. 260-263)

The fourth and last phase is the implementation phase. This phase usually involves huge investments, and thus high risks for the focal firm since business models normally can not be tested before launch. This makes it riskier for the firm and the firm need to overcome internal resistance in order to succeed. One way to cope with the risk is to use pilots, trial-and-error and experimentation. (Frankenberger et al. 2013, p. 260-263) The framework called the 4I framework can be seen in figure 2.

![Figure 1: Business model innovation process. Frankenberger et al. 2013, p. 267.](image-url)
This business model innovation process is not a linear process, but rather an iterative process where a firm can jump from one phase to the next just to find out that they have to go back to the first phase. Frankenberger et al. found that the most usual iteration occurred between integration and implementation phases. The firm who tried to implement a new business model found out that something had to be adjusted in the integration phase before they could manage the implementation phase. Furthermore, the three first phases can be seen as the meta-phase “design” as they focus on the business model development with respect to content, while the implementation phase realizes the new business model. (Frankenberger et al. 2013, p. 260-267)

Another framework for business model innovation was developed by Osterwalder and Pigneur (2010, p. 248-249). They propose a framework consisting of five phases, mobilize, understand, design, implement and manage. In the first phase the organization prepares for a successful business model innovation project. The organization does that by gathering all the necessary elements needed in order to design a business model as well as raise the awareness of the need for a new business model. The authors also propose that the organization should find the motivation factors behind the project and establish a common language for the description, design, analysis and the discussion of the business model. (Osterwalder & Pigneur, 2010, p. 249).

The second phase is understanding, which means that the organization should research and analyze the necessary elements for the design of a new business model. The research should focus on relevant knowledge from/about customers, technology and the environment, which can be obtained by interviewing experts or study potential customers and identify their problems and/or needs. (Osterwalder and Pigneur, 2010, p. 249)

The third phase is design, in which the information gathered in the previous stage is used in order to generate new ideas for business model prototypes that can be investigated and tested. After the testing is done the most promising business model prototype is selected for further development. (Osterwalder and Pigneur, 2010, p. 249)

The fourth stage is the implementation stage in which the business model prototype is tested in a real setting, if it is successful is will continue to the last stage, which is manage. In the manage stage the organization will develop and modify the business model depending on the changes in the market. (Osterwalder and Pigneur, 2010, p. 249)

4.2.3 Customer involvement in Business Model Innovation process
As we have stated previously, the field of business models have not been researched as much as the field of service and product innovation. In the field of service and product innovation there have been studies on how the customer can be involved in the innovation or development process.

Alam (2006, p. 473) describes three different stages in which customers can be used within the early stages of service innovation, these are idea generation, idea screening and concept development and testing. The manner in which the customers where involved in the service development process where through the use of brainstorming sessions, focus group, in-depth interviews, by observing customers in action or involving customers in service development teams (Alam, 2006, p. 473). In a study about new product development (NPD) by Lagrosen (2005, p. 429) he argues for three
phases, which are (1) Idea stage, (2) Development stage and (3) Launch stage. The customer can be involved in all of these stages but customers are usually involved in the first and last stage (Lagrosen, 2005, p. 429). Methods used for involving customers in the development process were tools such as prototype testing, focus groups, visiting the customer’s facilities (B2B) and exhibitions (Lagrosen, 2005, p. 431). Djelassi and Decoopman (2013, p. 685-686) also recognizes that the customers can be involved in different stages of the innovation process.

In the field of business model innovation the role of the customer is not as well researched. Some authors who have researched customer involvement in business model innovation are Jiebing et al. (2013), Plé et al. (2010) and Pynnönen et al. (2012). The research done by Jiebing et al. (2013, p. 368-369) resulted in a framework where different types of knowledge can have different effects on the business model. Knowledge about the customer can improve customer consumption experience, knowledge from the customer can improve user experience through customization, knowledge for the customer can improve customer consumption experience by helping the customer to make better purchase decisions (Jiebing et al. (2013, p. 368-369).

Plé et al. (2010, p. 244-247) Pynnönen et al. (2012, p. 7) suggests theoretical frameworks for how to integrate customer in the business model. Within the model by Plé et al. (2010, p. 244-247), the customer is seen as an integrated part of the business model and thus tightly connected with the organisation. Pynnönen et al. (2012, p. 7) focus on how to integrate customers into the R&D and innovation process of the business model. The study by them provides a customer-driven business model framework, which offers the tools to implement and manage the framework (Pynnönen et al. 2012, p. 7).

The framework by Pynnönen et al. is built on four phases as showed in figure 3. The first phase concerns the issue of customers’ value preferences and how to deal with that. In order to get information about the customers’ value preferences Pynnönen et al. (2012, p. 6) suggests that the company should adapt a process that helps define the attributes that drive the changes in the business model. Important to note is that information gathering process needs to be simple and agile enough to be rapid enough and give consistent responses (Pynnönen et al. 2012, p. 7).
The second phase involves refining the business model in accordance to the information gathered in the first phase. If the customers of the company have needs that the current business model does not satisfy, the business model has to be refined to match that need. (Pynnönen et al. 2012, p. 7)

The third phase involves an analysis of the fit between the current business model and the customer value. Pynnönen et al. used a weighted cross-fit evaluation matrix in order to weight the dimensions of the business model according to customers’ value preferences, which was gathered from different customer segment. The result showed the value-generating dimension of the company’s business model. (Pynnönen et al. 2012, p. 7)

The fourth and last phase is to re-design the service concept of the company. This is done based on the information that has been gathered in previous phases. (Pynnönen et al. 2012, p. 7)

There are major differences between the phases of framework and more incremental innovations can be handled within the first two phases. If the innovation is a major innovation, the company should proceed to phase three and four. Important to note is that this process is an iterative process and should therefore be repeated regularly. (Pynnönen et al. 2012, p. 8)
According to Pynnönen et al. (2012, p. 8-9) the business model dimensions are decided in the first stage, which is where the information is collected. However, the information gathered is pre-determined and customer-value-centric based on the thoughts of industry experts and the case-company. The customers can then compare and find a relative order of importance of these pre-determined customer values (Pynnönen et al. 2012, p. 8-9). Our study aim to take a broader approach where the customers can provide information on different aspects of the business model, which doesn’t necessarily revolve around the customer value. Furthermore, information will be gathered from the customer, in order to enhance customer experience and improve the total customer value, which according to Jiebing et al. (2013, p. 368-369) can lead to improvements of the whole customer experience delivered by the company.

4.2.4 Discussion
The three major models in business model innovation processes that we have identified are the models by Pynnönen et al., Frankenberger et al. and Osterwalder and Pigneur. The models by Frankenberger et al. and Osterwalder and Pigneur are more general in terms of from whom the information is gathered. The model by Pynnönen et al. has a clear customer focus when it comes to information gathering. Since the research question of this thesis is *In which business model dimensions can the customer be a resource for business model development and/or innovation for a medical instrument firm?*, we will focus on the ideation stage in Frankenberger et al’s model, the understanding phase of Osterwalder and Pigneurs model and the first phase of Pynnönen et al’ framework. This is because these phases are the ones where customers can be a source for new ideas regarding business model innovation and thus help us answer the research question.

Within these frameworks there are new information that is gathered from different sources. Pynnönen et al. have a predetermined set of variables/characteristics for its current business model from which the customers can rank in regard to preferences. The model by Frankenberger et al. uses a more open and general approach where information can be gathered about, with and from different stakeholders and other sources. The model by Osterwalder and Pigneur focus more on information gathered either from experts or by studying customers. The research question of this thesis concerns in what business model dimensions the customer can be a resource and thus focus on the customers role as a source of information for business model innovation. However, we will not focus on any predetermined characteristics but instead focus on what dimensions the customer can be a resource for business model innovation. This is also closer to the work of Alam (2006) who identify that the customer can be resource for idea generation in the process of service innovation and Lagrosen (2005) who identify the idea stage as a stage where the customer can be a resource in new product development.

Even thou this thesis focus on the information gathering phase of the frameworks by Pynnönen et al., Frankenberger et al. and Osterwalder and Pigneur, we still recognize the that other phases need to exist in order to develop a new business model.

As we mentioned earlier de Brentani’s (2001, p. 169-170) argues that many studies of product innovation fail to recognize the importance of the degree of innovation. We argue that the degree of innovation is a relevant factor for studies of business model innovation as well and therefore recognize the importance to recognize this factor in studies of business model innovation. The different between business model innovation
and business model development is that business model development concerns the identification of opportunities for improvement, adjustments and results. Business model innovation is the process of changing one or more dimensions in the business model, not just improving or adjusting an existing component in a dimension. We also recognize that business model innovation could be on a firm or macro level. The business model innovation could be incremental (changing one or several business model components without changing the value that is created or captured), really new business model innovation (changing a majority of the dimensions in the business model or changing the value that is created or captured without changing a majority of the dimensions), radical business model innovation (changing a majority of the business model components and the value that is captured/created is changed). This view is based on the view of Cavalcante et al. (2011).

As mentioned by Frankenberger et al. (2013, p. 260-261) it might be hard for people within the organization to think in “business models” and the lack of tools to develop business model ideas might have a negative impact on the innovation process. We do believe that this obstacle might affect the customers’ role as idea generators, therefore we divided the business model into different dimensions that can act as a tool and help the respondents think in terms of business models.

4.3 Business model dimensions

In this section, we will identify the business model dimensions that are relevant for this thesis. We will do that in three steps; first we will review previous literature in order to identify the business model dimensions they find relevant. Second, we will summarize the result of the first step, and then analyse the result in order to find the business model dimensions that are most widely used and important. Third, the most important dimensions will be the foundation of our own business model dimension framework.

4.2.1 Hedman and Kalling

Two authors who made a business model proposal that includes different components were Hedman and Kalling. They conducted a literature review of strategy theory, business model literature and e-business research. Based on this review the authors propose a generic business model that includes casually related components, which are: (1) customers, (2) competitors, (3) offering, (4) activities and organisation, (5) resources, (6) supply of factor and production input and (7) a longitudinal process component. All of these components are cross-sectional and can be studied at any given point in time. Furthermore, the longitudinal process component is covering the dynamics of the business model over time and the cognitive and cultural constraints that the managers usually have to cope with, which they refer to as the scope of management. (Hedman & Kalling, 2003, p. 52-53)

The logic behind this proposal is that; in order to serve a particular (1) customer segment and (2) compete with other organisations, the (3) offering must be favourable in terms of quality and/or price. Therefore, firms need to offer customer-perceived quality of physical product features and services, which requires effective configuration and execution of value chain (4) activities and organisational structure. In order to achieve this, the organisation requires human, organisational and physical (5) resources that can be (6) acquired on factor markets and from suppliers of production inputs. (Hedman & Kalling, 2003, p. 52-53)
Hedman and Kalling do recognize that external factors such as potential partners or competitors can affect the business model. Furthermore, the business model has to be managed and developed over time, which is how the process perspective is included in the proposed business model. In the actual model (figure 4) the axis consists of casual dimension and a longitudinal dimension, which means that the internal factors such as people and managers, as well as external factors such as competitors evolve over time. These processes include bridging of cognitive, cultural and political obstacles (scope of management). (Hedman & Kalling, 2003, p. 52-53)

**Figure 3:** The components of a business model. Hedman & Kalling, 2003.

### 4.2.2 Osterwalder and Pigneur

In 2005, Osterwalder and Pigneur elaborate on the concept of business models, its origins, present and future. According to the authors the business model can be seen as a conceptual link between business organization, strategy and systems. It is the link between all of these parts where the business model as a system shows how the pieces of the business concept fit together and the strategy also includes implementation and competition. (Osterwalder et al., 2005, p. 1-10)

Osterwalder and Pigneur also identified the most common business model “building blocks” in previous literature. From that synthesis, nine business model “building blocks” emerged and each “building block” was mentioned by at least two authors. However, all elements related to competition and to business model implementation were excluded. The building blocks are the value proposition, target customer, distribution channel, relationship, value configuration, core competency, partner network, cost structure and revenue model. (Osterwalder et al., 2005, p. 10)
Table 1 shows the business model building blocks and the description for each block. The nine building blocks are focused on the internal aspects of the organization, where the external factors are considered to be part of an organization's strategy.

In later work done by Osterwalder and Pigneur (2010, p. 16-17) nine building blocks are still used and they are formed into the business model canvas (figure 5). However, the nine building blocks have been slightly changed. The book is the result of 9 years of research and practical experience and it has 470 co-authors from 45 different countries (Osterwalder & Pigneur, 2010, p. 274-275). As shown in figure 5, all parts of the business model are integrated into one single model where all the parts play an important role in the organization. If you change one part of the business model it might influence the other parts heavily (Osterwalder & Pigneur, 2010, p. 138).

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<th>Pillar</th>
<th>Business Model Building Block</th>
<th>Description</th>
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<td>Product</td>
<td>Value Proposition</td>
<td>Gives an overall view of a company's bundle of products and services.</td>
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<td>Customer Interface</td>
<td>Target Customer</td>
<td>Describes the segments of customers a company wants to offer value to.</td>
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<td>Distribution Channel</td>
<td>Describes the various means of the company to get in touch with its customers.</td>
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<td>Relationship</td>
<td>Explains the kind of link a company establishes between itself and its different customer segments.</td>
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<td>Infrastructure</td>
<td>Value Configuration</td>
<td>Describes the arrangement of activities and resources.</td>
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<td>Management</td>
<td>Core Competency</td>
<td>Outlines the competencies necessary to execute the company's business model.</td>
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<td></td>
<td>Partner Network</td>
<td>Portrays the network of cooperative agreements with other companies necessary to efficiently offer and commercialize value.</td>
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<td>Financial Aspects</td>
<td>Cost Structure</td>
<td>Sums up the monetary consequences of the means employed in the business model.</td>
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<td></td>
<td>Revenue Model</td>
<td>Describes the way a company makes money through a variety of revenue flows.</td>
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Table 1: Nine building blocks. Osterwalder et al. 2005

Figure 4: Business model dimensions. Osterwalder and Pigneur (2010, p. 18-19)
The newer dimensions are: customers, value propositions, channels, customer relationships, revenue model, key resources, key activities, key partners and costs. (Osterwalder and Pigneur, 2010, p. 18-19). In the newer model the factors have been more thoroughly explained and value configuration and core competency have become key resources and key activities. Key resources are described as the most important resources needed in order to make the business work (Osterwalder and Pigneur, 2010, p. 34-35). It can be physical resources, human resources, intellectual resources and economical resources (Osterwalder and Pigneur, 2010, p. 34-35). Key activities describes what an organization needs to do in order to make their business work (Osterwalder and Pigneur, 2010, p. 36-37) and it contains how the production is supposed to work, how problems are solved and maintain and advertise the organizations network/platform (Osterwalder and Pigneur, 2010, p. 36-37).

The newer edition of the value proposition is described as a combination of different elements that satisfy the customers needs and these values can be quantitative (price, speed etc.) or qualitative (design, customer experience etc.). In 2010 the edition of channels contains different channel-types and different channel-phases. Channel-types are direct and indirect sales channels and it also says something about whether the channel is company owned or part of a partnership. The different channel-phases are attention, evaluation, purchase, delivery and post-purchase service. What type of relationship the company want to establish with its customers concerns the customer relationship dimension and examples of customer relationships are; personal service, self service, automated services, co-creation etc. Revenue streams can contains two different types of revenue streams, which are transaction revenues or fixed income and these different revenue types can either have a fixed price or a flexible price. There are four different types of key partnerships; strategic alliances with non-competitors, strategic alliances with competitors, joint ventures and relationships between buyer and seller in order to ensure a continues flow of supplies. (Osterwalder and Pigneur, 2010, p. 22-39)

4.2.3 Shafer et al

Another article focusing on synthesising different business model components from previous literature is the article - The power of business models by Shafer et al. The literature used in this article is based on 12 previous definitions of business model that were published between 1998 and 2002. Within these 12 definition Shafer et al. found 42 different business model components. The authors then categorized all the different business model components that had been used more than once. This categorization resulted in four major categories; (1) strategic choices, (2) creating value, (3) capturing value and (4) the value network. These categories can be seen in figure 6 (Shafer et al. 2005, p. 200-202)
Based on these four categories, Shafer et al (2005, p. 202) defines business model as: “a representation of a firm’s underlying core logic and strategic choices for creating and capturing value within a value network.” The business model is a reflection on the (1) strategic choices that have been made. The second key term, (2) creating and the third (3) capturing value includes two fundamental functions of the organization. Successful firms create and capture value by doing things in a different way than the competition. This might be done by developing core competencies, capabilities and positional advantages that differentiate the firm from its competitors. The value creating and value capture occurs in within a (4) value network, which can include suppliers, partners, distribution channels and coalitions that extend the company’s own resources. The firm might even be able to create unique relationships with its customers or any other of these potential partners. (Shafer et al 2005, p. 202)

4.2.4 Morris et al.

Morris et al (2005) also present a framework with business model components based on previous literature. The goal was to produce a framework that is applicable to firms in general and serves the needs of the individual entrepreneur. The proposed framework consists of three levels of decision-making, named the “foundation, “proprietary” and “rules” levels. At each level, there are six basic decision areas. (Morris et al. 2005, p. 726-729)

The foundation level is where the decision regarding what the business model is and isn’t. The proprietary level entails innovation unique to a particular venture and it is strategy specific. Replication of a business model is harder on this level than on the foundation level because of interaction among proprietary level components. Once a business model has been implemented, its success can be tied to a basic set of operating rules. The models foundation and proprietary elements are reflected in on-going strategic actions, which are ensured by the guidelines of the rule level. (Morris et al. 2005, p. 731)

The six decision areas that Morris et al. found is: (1) factors related to the offering, (2) market factors, (3) internal capability factors, (4), competitive strategy factors, (5) economic factors and (6) personal/investor factor. The first factor answers the question “how will the firm create value” and it concerns the nature of the product/service mix, the firm’s role in service delivery or production and how the offering is made available.
to customers. This question is answered by the firms offering and the answer can include different factors such as product/service, standardized/customized, direct/indirect distribution, product itself/bundled with other products etc. (Morris et al. 2005, p. 729-731)

The second factor focuses on “for whom the firm create value”, where in the value chain will the firm operate and to whom will it sell its products/services? Customer types, geographical dispersion and interaction points and requirements have significant impact on the organisation. Furthermore, the answer to this question can also include; type organization that the firm is creating value for (Business to business, business to consumers, both), if the customer is local/regional/national/international, where customers is in the value chain, if the firm is selling to a broad market or a niche market, if the offering is transactional or relational. (Morris et al. 2005, p. 729-731)

What is the firm’s internal source of advantage is the question concerning internal capability factors. It could be internal capabilities or skill sets that the firm performs better than any competitor that gives it an advantage. These competences are often called core competencies and lies at the heart of the business model. Examples of factors that the firm can do better than its competitors are production, information management, R&D, supply chain management, networking etc. (Morris et al. 2005, p. 729-731)

Competitive strategy factor concerns how the firm will position itself in the marketplace. The challenge that organisations face is to identify salient points of difference that can be maintained. Examples could be operational excellence, dependability, speed, innovation leadership, low cost, efficiency and intimate customer relationships (Morris et al. 2005, p. 729-731)

The economic factors answer the question; how will the firm make money? According to Morris et al, this factor can be approached in terms of four different subcomponents; operating leverage or whether the financial structure is dominated by fixed or variable costs; decisions regarding volumes; ability to achieve relatively higher or lower margins; and the firms revenue model. (Morris et al. 2005, p. 729-731)

What is the entrepreneur’s time, scope and size ambitions answer the personal/investor factor. Entrepreneurs create different kind of ventures with different types of goals and these different types might have important implications for the competitive strategy, firm architecture, resource management, creation of internal competencies and economic performance. (Morris et al. 2005, p. 729-731)

4.2.5 Halme et al.
A simple business model framework that still captures most of the relevant aspects that determine the viability of a business model concept in the marketplace is what Halme et al. proposed. Their proposed business model framework consists of four questions for probing the market viability of a service, these questions are: (1) What benefits can users or customer derive from the service? (2) What kind of competitive advantage does the sustainable service offer? (3) What capabilities and other resources does the provider or the network of providers have? (4) How is the service financed? (Halme et al. 2007, p. 128)

The first question concerns the value that is created for the customers, the answer is supposed to clarify how the firms offering is bringing value to the customer. The second
4.2.6 Chesbrough
In 2007, Chesbrough (2007, p. 12-13) together with Richard S. Rosenbloom came up with a working definition of a business model by looking at previous research. This working definition consists of six different functions of a business model, and each and every one of these functions can be innovated in order to generate new value in an industry.

The functions of the business model are: (1) Articulate the value proposition. (2) Identify a market segment. (3) Define the structure of the value chain required by the firm to create and distribute the offering, (4) Specify the revenue generation mechanism(s) for the firm (5) Describe the position of the firm within the value network (6) Formulate the competitive strategy by which the innovating firm will gain and hold advantage over rivals. (Chesbrough, 2007, p. 13)

The first function is about the actual value that the offering is creating for the users. The second function concerns whom the offering is useful for and what the purpose of the offering is. Once the offering has been created for a specific segment, the firm need to have the capacity to deliver on that value. That includes determine the complementary assets needed to support the firm’s position within the value chain as well as structuring the value chain to fit the needs of the organization. This structuring of the value chain does also include the firm’s suppliers and customers, and it should include all the activities from raw material to a final product or service produced with or for the end customer. The fourth function concerns the economic factor of the firm, which includes estimations of the cost structure and profit potential of producing the offering, given all the information and decisions made about the previous steps provided in this definition. The fifth function describes the firm’s position within the value network with an external perspective, which includes linking customers and suppliers and the identification of potential complementors and competitors. The last function concerns how the firm will create a competitive advantage by innovation. (Chesbrough, 2007, p. 13)

4.2.7 Demil and Lecocq
In 2010, Demil and Lecocq described a business model as having three core components. This description is based on the Penrosian firm view and previous research and the three components are: (1) resources and competences, (2) organizational structure and (3) propositions for value delivery. (Demil & Lecocq, 2010, p. 231)

The resources might be developed internally or it may come from an external market. The competences on the other hand refer to the abilities and knowledge managers develop, individually and collectively in order to improve, recombine or change the offering. Organizational structure is the organizations activities and the relationship it establishes with other organizations in order to exploit its resources. It includes both the
value chain of activities and its value network. The value proposition is the value a firm delivers to its customers, in the form of a service or a product. Firms might address value proposition towards different kinds of customers, such as consumers, suppliers, complementors, sponsors etc. Furthermore, it is only the value proposition that can generate income for the firm through sales, royalties, rents, interest, etc. The cost is then derived from running different activities such as acquiring, integrating, combining, developing resources etc. (Demit and Lecocq, 2010, p. 231-232)

4.2.8 Mason and Spring
Mason and Spring draws on previous literature on business model elements in order to draw attention towards management practices, which resulted in a basis for a business model framework. Their framework consists of three elements, which are (1) technology, (2) market offering and (3) network architecture. The proposed framework can be seen in figure 7 (Mason and Spring, 2011, p. 1033-1034)

The first element, technology, can be seen as the knowledge and usage of tools, techniques, systems, methods of organisations or material products. Mason and Spring are focusing on three different aspects of technology, which are the process, core and infrastructure. Process technologies are the processes used to manufacture products or deliver services. Core technologies are the specific technologies underlying products. Infrastructural technologies are those technologies that enable firms to connect with the outside world, which includes the Internet and mobile phone networks. (Mason & Spring, 2011, p. 1033-1035)

Market offering is the second element in Mason and Springs framework. The market offering does not concern any particular feature of a product or service, instead it focus on the nature of the producer-user interaction. The market offering consists of the value creating opportunities arising from different alternative combinations of artefacts, access to suppliers, capabilities and capacities and activities preformed by the supplier(s) on the customer and/or its property. This quote identifies the four elements of market offering, which is artefacts, activities, access and value. The transfer of ownership of artefacts is still a central point in a lot of business models and it is closely linked to the activities of the supplier, e.g. upgrade of software for a smartphone. The activities can also be seen as what the firm do for a customer, e.g. provide a service.
Access-based business models are built around a provider who provides solutions that play part in the value creating processes. The provider doesn’t loose its capacities in this transaction, so it can provide its solutions to even more customers. The value of the market offering is the benefits derived by a customer from an exchange, which makes it important for the firm to understand what it is the customers really value. (Mason & Spring, 2011, p. 1033-1035)

The network architecture is the relationships between the focal firm and the organisations with which it interacts. This element does also consist of four subcategories, which are market and standards, transactions, capabilities and relationships. The standards are indications of what might be traded and how within any given business network, it also frame the way managers identify and pursue market opportunities. According to Mason and Spring, market and standards as a notion do also frame practices for market-making as they might influence and shape standards which might offer the firm some specific opportunities. In order to earn revenue, a firm need its business model to involve transactions between firms and customers. The capabilities are the know-how of the firm that is retained, maintained and developed over time. Relationships in the network architecture concern the relationships that help and support innovations of product, processes, infrastructure, technologies and services. All of these elements are the cornerstones of the business model. Through this the business model represent a truth, describing the way a particular business works. (Mason & Spring, 2011, p. 1033-1036)

4.2.9 Tsvetkova and Gustafsson
In 2012, Tsvetkova and Gustafsson performed a study on business models in industrial ecosystems. In this study, the authors interviewed 40 persons within the biofuel industry and used previous research in order to make a framework for elements of a business model. This framework consists of four different elements, which are; (1) value proposition, (2) revenue model or earning logic, (3) customer and (capabilities). (Tsvetkova and Gustafsson, 2012, p. 249)

The value proposition is the value that a customer can receive from a seller offer, which is more than just a product or service but the benefit that the customer receives. Customers are important since the firm can target various markets and bring different value to each market. The capabilities define how a company is able to deliver the value to its customers, and the revenue model describes how this value is generating revenues for the firm. The revenue model might also include network of suppliers, partner or customers. All of these elements are interconnected and can’t be separated from the business itself if the business is to continue. (Tsvetkova & Gustafsson, 2012, p. 249)

4.2.10 Frankenberger et al.
Frankenberger et al. uses four central dimensions in order to describe the business model. These four dimensions are: the who, the what, the how and the why. These four dimensions are derived from previous research on business models. (Frankenberger et al. 2013, p. 251-252)

“Who” concerns the customer group that the business model serves and it is supposed to answer the question; “Who is the customer?” (Frankenberger et al. 2013, p. 251-252). This questions in one of the most important questions for an organization since “failure to adequately define the market is a key factor associated with venture failure” (Morris et al. 2005, p. 730).
“What” is offered to the customer and what the customer values is the second dimension. This is commonly referred to as the value proposition and consists of the whole bundle of products and services that are of value to the customers. (Frankenberger et al. 2013, p. 251-252)

“How” concerns the distribution of the value propositions. This describes how the firm’s processes, activities, capabilities and resources support the internal value chain that makes it possible to deliver value to the firm’s customers. (Frankenberger et al. 2013, p. 251-252)

“Why” is the fourth and last dimension and it explains why the business model if financially viable. It is closely related to the revenue model and cost structure, and thus explains how the firm will make money that exceeds its costs. (Frankenberger et al. 2013, p. 251-252)

4.4 Discussion and Summary of Business model dimensions

In the precious section we have presented the different dimensions brought up by different authors. Here is a compiled list of the different dimensions mentioned by the authors and we have summarized their dimensions into “clusters”.

We have clustered the dimensions into 12 clusters. Most dimensions have been named by more then one author, except for the longitudinal process factor and the personal investor factor. We do not believe that the entrepreneurs goal is part of the business model, but rather the business model is part of the entrepreneurs goal, similar to the relationship between strategy and business model. The longitudinal process factor turn the business model in to an ever-evolving process, which according to us is more related to business model innovation or business model development. Due to these arguments and the fact that only one group of authors each named these dimensions, we have decided to not include them among our business model dimensions. Competitors is one dimension that is mentions by four groups of authors and should therefore be seen as a valid dimension for business models. However, according to our previous discussion of business model and strategy, we view competitors as a strategic construct. Therefore, we argue that competitors are part of a strategic construct rather than a business model construct and should be excluded from our list of business model dimensions. The last dimension that we have excluded from our list is costs. We do believe that costs are a valid dimension of business models, but for our purpose costs is less relevant. This is because it is per definition impossible to innovate costs since the cost structure includes all the other dimensions of the business model. We therefore view costs as a result of other dimensions within the business model, and any innovation in these dimensions will also innovate the cost structure. Revenue model might also be seen as a result of other activities within the organization. However, we argue that the revenue model is not just a result, but rather a flexible dimension that can add value to the customer through, for example different financial solutions for the customer. Therefore we have included the dimension revenue model in our research.

Based on the previous discussion, eight out of twelve business model dimensions will be used to analyse in what business model dimensions the customer can be a resource for business model innovation/development. In this coming discussion we will present our view on the business model dimensions used in this thesis. Our view will be based on previous research and our understanding of the different business model dimensions.
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Table 2: Summary of business model dimensions. Own.
4.4.1 Customers

The first dimension is (1) customers and it includes who the customer is, what customer segment the organization should serve (Hedman & Kalling, 2003, p. 52-53, Osterwalder et al., 2005, p. 10, Osterwalder & Pigneur, 2010, p. 21, Shafer et al. 2005, p. 200-202, Frankenberger et al. 2013, p. 251-252) and the purpose of the offering (Chesbrough, 2007, p. 13). Even though most authors just briefly mentions this definitions of the customer dimension this definition is rather consistent between the authors. The target market and scope is something that Shafer et al. (2005, p. 200-202) mentions when describing the customer dimension.

In the six decision areas presented by Morris et al. (2005, p. 729-731) the question “for whom the firm create value” is described as an important part of the business model. This question concern factors such as whether the organization should sell products or services, what customer types (B2B, B2C) they should serve, geographical dispersion among its customers, customer interaction points, broad or niched market and other factors that might have an impact on the organization. In the model presented by Mason and Spring (2011, p. 1033-1036) they mentions market standards and the possibility to shape these standards by practice “market-making” and pursue market opportunities.

Morris et al. (2005, p. 730) highlights the importance of identifying the customers when stating; “failure to adequately define the market is a key factor associated with venture failure”, and without (profitable) customers a venture can’t survive for long (Osterwalder & Pigneur, 2010, p. 20). Furthermore, each company can have different customers that need to be served in different ways (Tsvetkova & Gustafsson, 2012, p. 249, Osterwalder & Pigneur, 2010, p. 21).

To summarize our thoughts on the customer dimension, we see the customers both as individuals and groups/segments to whom the organization might offer its value proposition. Who the customer is could also be innovated in order to pursue market opportunities and create new markets. The factors that were mentioned by Morris et al. is also part of the customer dimension according to us, since we see them as subcategories that describe in greater detail who the customer as an individual and/or group/segment. Furthermore, we do disagree with Chesbroughs statement about the purpose of the offering, since we consider the purpose to be part of the value proposition rather than the customer dimension. We also believe an organization can offer different value propositions to different customer individuals/groups/segments.

4.4.2 Value proposition

The second dimension is value proposition. The value proposition contains the overall bundle of an organizations product and services (Osterwalder et al., 2005, p. 10, Frankenberger et al. 2013, p. 251-252) and according to Hedman and Kalling (2003, p. 52-53) must it be favourable in terms of customer-perceived quality. In the newer version of Osterwalder and Pigneurs (2010, p. 22-23) definition of business model dimensions the value proposition is described as a combination of different elements that satisfy the customers needs. These needs can be satisfied is through quantitative values such as price and speed or through qualitative values such as design or customer experience (Osterwalder & Pigneur 2010, p. 22-23).

Morris et al. (2005, p. 729-731) asks the question “how will the firm create value” that concerns the nature of the product/service mix, the firm’s role in service delivery/production and how the offering is made available to customers. The offering could then be divided into different factors such as product/service,
standardized/customized, direct/indirect distribution, product itself/bundled with other products and more (Morris et al. 2005, p. 729-731).

In the model by Mason and Spring (2011, p. 1033-1035) the market offering has four elements, which are artefacts, activities, access and value. The authors think that the transfer of ownership of artefacts is still the central point in a lot of business models and that it is linked to activities such as upgrade of software etc. However, it is not just the transfer of artefacts that are central in their model, but activities performed (services) for the customer are also important. The access based business model is offering a solution to its customers that are part of the customer’s value creating process. Furthermore, this offering is not lost in the transaction, which makes it possible to offer the same solution to other customers. In order to deliver value to the customer, the provider of value must first understand the customer and the needs of that customer. (Mason & Spring, 2011, p. 1033-1035) The value of the offering is further highlighted by a number of authors who states; that the value proposition is the value the firm offers to the customer (Halme et al. 2007, p. 128, Chesbrough, 2007, p. 13, Demil & Lecocq, 2010, p. 231-232) and the opportunities the firm might take advantage of (Mason & Spring, 2011, p. 1033-1035). The offering can also be explained as the core benefit that the customer receives when buying a product/service from an organization (Tsvetkova & Gustafsson, 2012, p. 249, Frankenberger et al. 2013, p. 251-252, Demil & Lecocq, 2010, p- 231-232).

The value proposition is, according to us, the total core value that the organization creates for its customers. How this value is transferred to the customer can be done in many different ways, examples could be through the transfer or products and the performance of services. The purpose of the value proposition is what guides the organizations offering towards a group/segment of customers and in order to succeed the organization has to consider different options. Example of this could be whether they should customize its offering or have it standardized, if the product/service should be bundles or not, etc. A new value proposition can also create or take advantage of opportunities in the market.

4.4.3 Channels
Channels is the third dimension and it describes the various means for the company to get in contact with its customers (Osterwalder et al., 2005, p. 10) with the purpose of delivering its value proposition (Osterwalder & Pigneur, 2010, p. 26, Frankenberger et al. 2013, p. 251-252). Channels contain different channel-types (direct/indirect sales and company owned or part of a partnership) and different channel-phases (attention, evaluation, purchase, delivery and post-purchase service) (Osterwalder & Pigneur, 2010, p. 27). In Shafer et al’s. (2005, p. 202) value network they include customer information and information flows. Even thou they do not explain it further, we think they are part of the channel dimension and our interpretation of customer information is: how customers receive information from the organization, what that information contains and how the organization obtains information from customers. We interpret information flows as: how information flows both within the organization, outside the organization and how these two flows interact, examples could be how external stakeholders give feedback or how information about the organization travel through word-of-mouth. Mason and Spring (2011, p. 1033-1036) mentions relationships and how different relationships might support innovation of product, processes, infrastructure, technologies and services. We believe that this information that helps organization innovate and/or develop can come from the customers.
Based on this we will define channels as the various means of the company to get in contact with its customers. We do not think that the purpose is simply to deliver the value proposition, even though we believe it to be an important part of channels. Instead we think that channels also include how the organization obtains information from external factors, such as customer feedback. Within the concept of channels there are also channel-types and channel phases like the ones presented by Osterwalder and Pigneur. However, in order to distinguish channels from value proposition we think channels only concerns the flow of information that is not part of the value proposition. An example could be an organization that has information/knowledge as an important part of its value proposition, then channels only concerns information that core business, such as advertisement, after sales support, feedback gathering etc.

4.4.4 Customer Relationships
The fourth dimension is customer relationships, which describes the different types of customer relationships the organization can establish with its customers, for example self service, co-creation, etc. This dimension should answer the question: what type of relationship do our customers want with us, and are we making that kind of relationship possible? (Osterwalder and Pigneur, 2010, p. 28) Customer relationship is also mentioned as part of the value network by Shafer et al. (2005, p. 202), but they do not elaborate any further on the concept.

Based on this we view the customer relationships dimension as the link that a company establishes or want to establish with its customers in order to obtain and maintain customers. The difference between customer relationships and channels is the purpose. Customer relationships dimension has the purpose to establish and maintain a relationship with its customers, which can be achieved through activities such as after sales information or service recovery etc. Channels dimension on the other hand has the purpose of disseminate information or obtain information.

4.4.5 Revenue Model
Revenue model is the way organizations make money (Osterwalder et al., 2005, p. 10, Halme et al. 2007, p. 128) from each customer segment (Osterwalder & Pigneur, 2010, p. 31, Tsvetkova & Gustafsson, 2012, p. 249). According to Chesbrough (2007, p. 13) the revenue model is a result of previous dimensions. Some authors (e.g. Tsvetkova & Gustafsson, 2012, p. 249, Frankenberger et al. 2013, p. 251-252, Halme et al. 2007, p. 128) includes costs in its revenue model and thus explains how the organizations revenue will exceed its costs. Revenue and pricing is something that Shafer et al. (2005, p. 202) mentions regarding strategic choices but they do not elaborate any further on the subject. How will the firm make money is a question that is asked by Morris et al. (2005, p. 729-731) and it concerns four different subcomponents, where one of them are the firms revenue model. In order to earn revenue an organization need to involve transactions between the organization and its customers (Mason & Spring, 2011, p. 1033-1036). Osterwalder and Pigneur (2010, p. 31) include two different types of revenue streams, which are transaction revenues and fixed income and these different revenue types can have fixed or flexible pricing.

The revenue model is the way organizations make money from each customer segment. This is done through transactions between the organization and its customers. How this transaction is structured can be a source for innovation. Examples of possible ways of innovating an organizations revenue model are as leasing/subscription (fixed income), direct buy (transaction revenue) and fixed or set pricing.
4.4.6 Key Resources

Key resources are the resources needed in order to get the business model to succeed, and the resources can be physical, intellectual, human, and economical (Osterwalder & Pigneur, 2010, p. 34, Frankenberger et al. 2013, p. 251-252). These resources can be acquired on the factor market (Hedman & Kalling, 2003, p. 52-53) and they are the most important resources according to Osterwalder and Pigneur (2010, p. 34-35). Knowledge is an intellectual resource that the organization can either have or acquire. The knowledge of tools, techniques, systems, methods of organisations or material products are all part of Mason and Springs (2011, p. 1033-1035) business model. It can also be knowledge about processes, core technologies and the organizations infrastructure (Mason & Spring, 2011, p. 1033-1035).

Resources and assets are two fundamental functions in order to create value and successful organizations create and capture value by doing things in a different way than competitors (Shafer et al. 2005, p. 202). According to Chesbrough (200, p. 13) and Halme et al. (2007, p. 128) can these resources be taken through the value chain and go from raw material to finished product/service. These resources can be developed internally or it may come from an external market (Demil & Lecocq, 2010, p. 231-232).

Our view of key resources are similar to the view of Osterwalder and Pigneur that define it as “the resources needed in order to get the business model to succeed, and the resources can be physical, intellectual, human, and economical”. Physical resources can be machines or buildings, intellectual can be structural knowledge about processes or core technologies, human can be individuals with special abilities or knowledge, and economical can be monetary resources. All of these resources can either be developed within the organization or acquired from external sources. The difference between key resources and key activities are that key resources is something that the organisation has or can acquire/develop while the key activities is what the organization do.

4.4.7 Key Activities

Key activities is something that all authors talk about. It can be the activities that uses key resources to create value and it can supports the internal value chain which makes is possible to deliver value to the organizations customers (Frankenberger et al. 2013, p. 251-252). Osterwalder and Pigneur (2010, p. 36-37) describes key activities as; what an organization needs to do in order to make their business work and it contains how the production is supposed to work, how problems are solved and maintain and advertise the organizations network/platform. These capabilities can be retained, maintained and developed over time (Mason & Spring, 2011, p. 1033-1036). Just like resources, the processes and activities can be used by the organization in order to do things different than competitors (Shafer et al 2005, p. 202) and it is these activities that transform the raw material in to a final product or service produced with or for the end customer (Chesbrough, 2007, p. 128).

According to Morris et al. (2005, p. 729-731) there are internal capability factors within the organization that can be an advantage. These competences are often called core competencies and lies at the heart of the business model. Examples of factors that the firm can do better than its competitors are production, information management, R&D, supply chain management, networking etc. (Morris et al. 2005, p. 729-731)

Demil and Lecocq (2010, p. 231-232) refers competences to the abilities and knowledge managers develop, individually and collectively in order to improve, recombine or change the offering. The usage of tools, techniques, systems, methods of organisations
or material products is an important part of the business model where an example could be the processes used to manufacture products or deliver services (Mason & Spring, 2011, p. 1033-1035).

Key activities is what an organization needs to do in order to make the business work. It can be the action that is performed in order to create a product, the process of performing a service or some other important activity that is performed.

4.4.8 Key Partners

According to Mason and Spring (2011, p. 1033-1036) key partners can be anyone outside of the organization and relationships within the partner network concerns the relationships that help and support innovations of product, processes, infrastructure, technologies and services. Creating key partnerships can be done by linking customers and suppliers to the organization or by identifying complementors (Chesbrough, 2007, p. 13) that can help the organization to get a hold of key resources or to spread the risk (Osterwalder & Pigneur, 2010, p. 39, Halme et al. 2007, p. 128). According to Osterwalder and Pigneur, (2010, p. 39) key partnership includes strategic alliances with non-competitors, strategic alliances with competitors, joint ventures and relationships between buyer and seller in order to ensure a continues flow of supplies.

Shafer et al. (2005, p. 202) mentions the value network, which can include suppliers, partners, distribution channels and coalitions that extend the company’s own resources is where value is created and captured. The firm might even be able to create unique relationships with its customers or any other of these potential partners. (Shafer et al 2005, p. 202)

Key partners can be anyone outside the organization and they provide the organization with important resources or other capabilities.
5 Practical Method

5.1 Sample
One important aspect of theory building from case studies is the selection of cases. The research sample is to be drawn from a set of entities from a population. The population helps define the limits for generalizing the findings. (Eisenhardt, 1989, p. 536-537) In order to find a case company and a population we limited our search with the help of four different criteria.

Our first sample criteria were that we choose to focus on business model innovation from the focus of a medical instrument company producing tonometers. This choice had the effect that we only focused on customers that had some relationship to tonometers and measuring eye pressure.

Our second sample criteria were that we wanted to include different customers. We identified that patients, nurses, doctors and managers were the company’s customers. Due to this we choose to include all these four customer groups in our sample.

Third we also needed to understand the company’s current business model and therefore we included representatives from the company in the sample as well.

Fourth we limited our study to Sweden with a focus on the north of Sweden due to time and travel limitations.

These four criteria’s was the base for our selection. We identified a company and then identified the different customers groups based on their current business model.

In order to reach patients we contacted patient interest groups focusing on eye problems, Synskadades riksförbund (The Association for Visually Impaired) and glaucoma, Svenska Glaukom Förbundet. (The Swedish Glaucoma Association) through these groups we came in contact with patients that had participated in eye examinations regarding supposed high eye pressure.

In order to reach doctors and nurses working with examinations of supposed high eye pressure we used contacts from the company. Through the company we gained access to current customer of the company and were able to access both doctors and nurses.

To get in contact with managers responsible for buying medical instruments we contacted the managers responsible at the healthcare centers were the company currently had customers.

To get a view of what ideas the company producing tonometer already had, we chose to interview representatives for the company. We identify key individuals in the company with different responsibilities in order to get an as wide view as possible of the company’s ideas.

5.2 Interview guide
Our interview guide consists of three major parts (see appendix 1 to 5 for interview guides). The first part is focused on getting to know the respondent and get information about his or her work tasks and experience. The second part (theme one) is one open question where the respondents get to describe what characterizes a good eye examination regarding possible high eye pressure from his or her perspective. Having a tonometer and not using it does not create any value, it is in the application the value is
created both for the patient, the doctor/nurse and the manager/purchaser. The examination is therefore very value centric and therefore this is a good point to start the interview. This view of focusing on the value creation situation and the outcome of a service or product rather than its characteristics is recommended by other scholars. Simonson (1993) argues that since customer often cannot tell what they want in the future their insight is of limited use for the company. However Leonard and Rayport (1997) and Ulwick (2002) argues that one reason for this is that managers often do not know how to interact with customers in order to gain correct input, they recommend that the focus should be on the desired outcomes of a new service or product. With our open question regarding the examination we aim at gaining insight about in which dimensions the customer can be a resource for business model innovation by focusing on their desired outcome of the interaction with the business model. Based on the first question we have two main follow-up questions concerning what the common problems is and what could be improved. The third part (theme two) is more specific questions based on business model dimensions.

The intention with the structure of our interview guide is to try to catch what is most important and what the respondent has thought the most about initially and then move to more specific questions. Starting the interview with more open questions gives the respondent a chance to present what is most important to him or her (Jacobsen et al., 2002, p. 163-164). Interviews can be placed on a scale between structured and unstructured as well as standardized an unstandardized (David & Sutton, 2009, p. 119). Structured interviews have a clear order of sequence to questions and questions are asked in the same identical form and order between interviews, the structured interview aims at a high level of repeatability and reliability. Unstructured interviews are more focused on letting the interviewee tell their story and are therefore less focused on structure and more on flow, this interviewee type aims more at depth in each interview than repeatability. Standardization concerns the level of closure around the answers the interviewee can give. Closed answers are easier to quantify where open answers allows for more personal detail depth. (David & Sutton, 2009, p. 119-120). Our interview design has pre-determined themes and order of themes. Furthermore our questions are pre-determined but we also allow not pre-determined follow up questions and to adjust the formulation of the question according to the situation, our questions does not have pre-determined answer alternatives. Based on David & Sutton’s terminology our interview guide is somewhere between structured and unstructured and more to the standardized rather than the unstandardized form. The second theme in our interview guide is more unstructured than our third theme and the second theme is also less standardized than the third theme. Our aim with this design is to capture what differences there can be between more open questions regarding the customer’s ideas regarding the business model and also to cover all dimensions with more specific questions.

To summarize our interview guide we have started with more open questions and then moved on to more specific questions. We have often asked follow up questions based on the interviewee’s answers. When dimensions has been mentioned by the interviewee in the open questions have we tried to reconnect to this when we move to the more specific questions, in order to do this we have been active listeners and taking notes.

5.3 Data collection
We collected our empirical material for this study through interviews with our respondents. Important to notice is that the interviews were all held in Swedish. The
interviews were all face-to-face interviews with two exceptions. Jacobsen et al. (2002, p. 161) argues that face-to-face interviews makes it easier to have an open and good dialog. Furthermore it is easier to adjust the interview depending on the interviewee’s reactions in a face-to-face interview (Jacobsen et al., 2002, p. 161-162). The interviews where mainly held at the interviewees’ workplace, two interviews where held in the interviewees’ home and two interviews where held at the University in Umeå. Jacobsen et al. (2002, p. 164-165) describes that the location for the face-to-face interview effects the interviewee. By having the interviews in an environment where the interviewees’ can feel at “home” we aimed at making the interviewees feel more at ease and safe, than they might have in a more unknown surrounding. The two interviews held at the university where held there because the interviewee’s asked if we could be there. One negative effect with face-to-face interviews is that the respondent might be affected by the interviewer (Jacobsen et al., 2002, p. 162). By interviewing most of the respondents at their workplace they might have felt a need to provide a “better” picture of their work

<table>
<thead>
<tr>
<th>Fictive name</th>
<th>Role</th>
<th>Length of interview</th>
<th>Place for interview</th>
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<tbody>
<tr>
<td>Peter</td>
<td>Patient</td>
<td>45 min</td>
<td>Patients home</td>
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<tr>
<td>Per</td>
<td>Patient</td>
<td>33 min</td>
<td>University</td>
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<tr>
<td>Patrik</td>
<td>Patient</td>
<td>60 min</td>
<td>University</td>
</tr>
<tr>
<td>Pelle</td>
<td>Patient</td>
<td>65 min</td>
<td>Patients home</td>
</tr>
<tr>
<td>Donald</td>
<td>Doctor</td>
<td>28 min</td>
<td>Workplace - office and followup email</td>
</tr>
<tr>
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<td>Doctor</td>
<td>12 min</td>
<td>Workplace - office</td>
</tr>
<tr>
<td>Donna</td>
<td>Doctor</td>
<td>38 min</td>
<td>Workplace - office</td>
</tr>
<tr>
<td>Nina</td>
<td>Nurse</td>
<td>33 min</td>
<td>Workplace - office</td>
</tr>
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<td>Nicole</td>
<td>Nurse</td>
<td>39 min</td>
<td>By phone</td>
</tr>
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<td>Nathalie</td>
<td>Nurse</td>
<td>31 min</td>
<td>Workplace - office</td>
</tr>
<tr>
<td>Nova</td>
<td>Nurse</td>
<td>31 min</td>
<td>Workplace - office</td>
</tr>
<tr>
<td>Maria</td>
<td>Manager</td>
<td>35 min</td>
<td>By phone</td>
</tr>
<tr>
<td>Carl</td>
<td>Shareholder</td>
<td>55 min</td>
<td>University</td>
</tr>
<tr>
<td>Charlie</td>
<td>Former R&amp;D Director and now consultant</td>
<td>69 min</td>
<td>Workplace - office</td>
</tr>
<tr>
<td>Christoffer</td>
<td>shareholder</td>
<td>63 min</td>
<td>By phone</td>
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</tbody>
</table>

Table 3: Interview summary. Own

place than they would have if had held the interviews in another location. However we argue that the positive effect of it being easy for the respondents to participate in the interviews and having them feel at “home” in the environment outweighs the negative. In table 3 is a summary of our interviews, the names we have given the respondents, the role the respondent has, the length of the interview and the place of the interview.

Two interviews were done by phone because the respondents did not have the time to participate in a physical meeting. Even thou it would have been preferable to interview these respondents face-to-face, having to choose between not having the interviews and having the interviews by phone, we chose to have them by phone.

One of the respondents did not have time to finish the interview and due to time constraints (from the respondent’s side) we chose to finish the last questions by email.
We had finished approximately 90% of the interview when the respondent had to leave and only a smaller part of the interview was done through email.

We came in contact with the patients we interviewed through patient interest groups. It is possible that the patients involved in patient interest groups has thought and discussed more regarding their treatment than other patients. Furthermore it is also possible that these patients might have some type of agenda from the interest group that they want to communicate. However due to the ethical and practical consideration we did not see any other way to get in contact with patients then through the interest groups.

The doctors and nurses we interviewed where working at three different healthcare centers and we got access to them through the company producing tonometers. It is possible that these nurses and doctors could have a more positive view on the product, service or business model of the company due to the fact that they have taken part in a product test. However we see this risk as limited and our aim with these thesis is not to see how positive or negative the customer are towards a company’s product, service or business model but rather to explore if the customer can be a resource for business model innovation and in what business model dimensions they can be a resource. Another possible issue with this sample is that the doctors and nurses have thought more about the product, service or business model than other since they have been part of the test conducted by the company. However the individual doctors or nurses have not chosen to be part of the test and we argue the positive effect of easy access outweighs the potential negative effect.

The respondents from the company might have an interest of showing that they have many ideas since it could be argued that it is their job to see potential for innovation and/or development.

Our initial ambition was to interview more than one manager. However it was very hard to get managers to participate and to find time for interviews. This is the main reason why we only interviewed one manager. We came in contact with the manager that we interviewed through the company and she was working at one of the health clinics where we also interviewed nurses and doctors.

5.4 Access
The access to the respondents has varied a lot. Originally we tried contacting managers, nurses and doctors at four different healthcare centers. Two of the centers were positive and we arranged one day of interviews at each location. The other two healthcare clinics were much less interested in participating. One individual at one of these two centers agreed to participate and we held a phone interview with this individual.

When contacting the patient interest groups we got our first positive responses quite fast. Both patient interest groups we contacted where positive and we received calls and emails from four interested individuals.

The hardest group to access has been the managers, it has been both difficult to finding managers that will agree to a interview as well as finding time with the one that did agree.

5.5 Data analysis
Before our interviews we asked all the respondents if we could record the interview, which they all agreed to. When we had completed an interview we transcribed it. We
did the transcription by listening to the interview and writing down everything that was said, as it was said in the interview. This gave us a better overview of the material we had gained through the interviews and helped us remember what the respondents had said and when they had said it. Bryman (2011, p. 428) argues that transcribing interviews helps us remember what has been said during the interviews and lets the interviewer control what has been said after the interview. Transcribing an interview helps the researcher in thoroughly analyzing the material from the interview (Bryman, 2011, p. 428). By transcribing our interviews we believed the presentation of our empirical material and our analysis would be better and easier, since we had the possibility to easily go back and examine the empirical data. We did the transcription individually. Our interview resulted in approximately 143 pages of transcriptions, these includes both the interviews that we did face to face and the interviews we did by phone.

When we had done the transcription of the interviews we tried to create a picture of the material by reading it several times and trying to find general characteristics. We stared this process by reading the material individually while taking notes about what we thought could be interesting for our study. The notes were done by writing short comments and color-coding parts that we find similar. Since the transcribed material is fairly large the color-coding was crucial for us to get the material more manageable and find structure in the information that the material contained. When we had done this we switched material and the other author looked through the same material, afterwards we compared our markings and notes and compiled what we had found relevant. This data resulted in our empirical presentation.

Nylén (2005, p. 70) argues that a coherent case study consists of an empirical case that serves to convey a clear picture of the studied reality. Furthermore, Nylén (2005, p. 71) argues that the purpose of this type of empirical presentation is to give credibility to the researcher's interpretations. The methodology we have used for the presentation of our empirical work is the case presentation, in order to communicate a clear and credible picture of what we have found in our interviews. We chose this method of presentation to give credibility to our future interpretations. To assist the reader, we have tried to divide each case into two parts. The first part concerns the respondents’ answers concerning the general question of how they experience an eye examination with two major follow up questions. The second part consists of more specific questions based on the business model dimensions. We have one presentation for each group of respondents. Our aim with this has been to help the reader to understand what ideas both the individuals and the different customers group has. By having a consistent structure for presenting the empirical data we have tried to make it easier for the reader to access and compare the different cases.

When we analyzed the empirical data with our theoretical framework we started by reading our empirical presentation individually. By reading and starting the analysis individually we wanted to minimize the influence we had on each other and by doing so we hoped to find more details and trends in our empirical data. Jacobsen et al. (2002, p 216) describes that the first step in the analysis of qualitative data is trying to get an as accurate and detailed picture of the collected data as possible. The next phase in qualitative analysis is according to Jacobsen et al. (2002, p. 216) to systemize and categorize the data. We did this by categorizing our findings in to the business model dimensions we identified from earlier research as well as the empirical findings we found related to business model design and level of innovation. After this phase,
Jacobsen et al. (2002, p. 216) describes that the next phase is starting to interpreting the data in order to find some causes and try to generalize or get some order in all the data that have emerged. We did this by using our theoretical framework to analyze our empirical findings and comparing our different customer groups towards each other, to find if there where similarities and/or differences. The tendencies or themes that we could not categorize based on our theoretical framework we tried to find explanations to and potential consequences of. These themes or tendencies we present and discuss separately in our analysis chapter.

5.6 Ethical considerations
Ethics according to David and Sutton (2011, p. 30) can be defined as “the systematic study of or formalization of rules concerning the separation of good conduct from bad”. Bryman (2011, p. 132) refers to Diener and Crandall (1978) and four main areas of ethical considerations with regard to social science; (1) if any harm comes to the respondents, (2) if there is any lack of consent from the respondents, (3) if there is any intrusion to the private life of the respondents, (4) if there is any form of deception, false pretenses or concealment of important information.

We have taken a number of steps to make sure that no harm come to the respondent. The first and most important step here is that we have coded all transcripts from the point of where we made the transcripts from the audio recordings. We have done this to make sure that the anonymity of our respondents is safe. Furthermore we have also anonymised any organization names in order to make sure that no harm comes to the respondent after the study. Before the interviews we made sure that that we only sought to hear the respondents thoughts and ideas, and that there are no right or wrong answers. We find this important in order for the respondents to feel safe and ensure the respondents that we do not judge them in any way. Furthermore, during the interviews we let the respondents talk as much as they wanted and made sure that we did not interrupt, we believe this to be important in order for the respondents to feel safe and so they do not leave with feelings of discomfort.

The doctors, nurses and managers where asked to participate through contacts mediated from a company selling instrument for measuring eye pressure. All nurses, doctors and managers participated voluntarily. The company representatives we approached directly and they also voluntarily chose to participate. The patients that we interviewed voluntarily contacted us after that they had gotten information that we were looking for respondents through two patient interest groups. All respondents in the study had a choice to participate or not to participate and all who participated chose to do this voluntarily.

The area of ethical consideration related to the intrusion to the private life of the respondents is closely linked to the ethical consideration of voluntarily consent to participate in a study (Bryman, 2011, p. 137). Even if a respondent gives his or her consent to participate in a study, they still have a right to a private life (Bryman, 2011, p. 137). If a respondent has chosen not to answer a question we have respected this. Questions regarding examinations (as we have in our interviews) are very close to the personal sphere and therefore we have tried to respect the personal sphere and the fact that all respondents might not want to answer all questions. Overall the respondents have answered the majority of the questions and our impression is that they have felt safe where the anonymity has been an important factor. Some of the interviews with the patients have been done in the patients’ home, this is per se an intrusion to the private
life. All interviews that have been done in the patients home has been because of the explicit will from the patient to do the interview there. All our respondents have had the opportunity to choose the location and place for their interviews.

We have handled the ethical dimension of deception, false pretenses or concealment of important information mainly by being very open with our intentions. In both the initial contact with a respondent as well as in the beginning of every interview we have clearly stated why we are doing this research, how the respondent’s answers will be treated and how the research will be presented.

5.7 Quality criteria’s

5.7.1 Internal validity
The internal validity concerns that we have described the phenomena we studied in a manner that is coherent with how others perceive the phenomena (Jacobsen et al., 2002, p. 256). In order to strengthen our internal validity we have offered all respondents to access the empirical material if they have wanted and we have also encouraged the respondents to contact us if there is anything they want to add or change after the interview. Jacobsen et al. (2002, p. 257) describes this as a type of respondent validation and he argues that this type of validation is not the best type of validation since it is dependent on an active action from the respondent. The reason that we chose this type of validation is largely dependent on the large material and the timeframe of this research project. Other methods for validation that Jacobsen et al. describes we believed would take more time. None of our respondent has contacted us to access the material and/or add or change anything they have said during the interviews.

The second type of validation we have used in our research is validation against other theory. If there is consistency between several studies this strengthened the validity (Jacobsen et al., 2002, p 258). The main part of all our findings is consistent with already existing dimensions of business models and this strengthens the credibility in these results. However studies of customer involvement in business model innovation are very limited and therefore it is hard to validate if the ideas that we have identified from different customer groups is consistent with other studies since there are few other studies. Therefore the validity in this is weaker.

Jacobsen et al. (2002, p. 259) describes that it is important to critically examine if the study has gotten access to the right sources, e.g. respondents. In our study it has been crucial to access respondents from different customer groups. Our aim was to understand in what dimensions the customer can be a resource for business model innovation, therefore the access to different customers have been crucial to get a more detailed and comprehensive picture. One of the customer groups, the patients, we accessed through patient interest groups. It is possible that the patients involved in these groups can be more active “customers” than other and also have more ideas than the average patient. This is something that is hard to avoid without using more ethically questionable methods to get access to the patients.

To summaries we argue that our internal validity is acceptable with regard to the lack of earlier studies and time frame.

5.7.2 External validity
Jacobsen et al. (2002, p. 266) describes that qualitative method is usable to form theory but if this theory is reliable on a more general level is hard to determine. Our goal with
this study has not been to come to results that are generalizable in a larger population. The study we have done and the results we present represents the objects we have studied.

5.7.3 Reliability
The researcher can effect the phenomena the researcher studies, when this happen during interviews this is called interviewer effect (Jacobsen et al., 2002, p. 270). During an interview the interviewer affect the respondent for example by how he or she express themselves and how they act (Jacobsen et al., 2002, p. 270). In order to minimize this effect we have had the interviews in an environment that the respondent themselves have chosen. We have let the respondent chose location because we believe they feel safer when they get to choose the location. Two of the first interviews were done by Andreas and Jonas together. We did these interviews to get common references regarding the interview process. Jacobsen et al. (2002, p. 271) describes that when two researchers come to the same conclusion the risk for significant interviewer effect decreases. Therefore did we do the large majority of the interviews individually.

Jacobsen et al. (2002, p. 271-272) explains that the context surrounding the interview affects the respondent, there is a risk that people change their behavior depending on the environment. In order to prevent this we let the respondents themselves choose the location for the interviews. By doing this we believe the respondent feel more safe.

Jacobsen et al. (2002, p. 274) describes that there is always a risk that the researcher misses something while taking notes in the collection of data. We prevented this by recording all interviews. There is also a risk that the researcher does an insufficient analysis. If several independent researchers does the same analysis and draws the same conclusions from a material the credibility increases (Jacobsen et al., 2002, p. 274-275). It has not been possible for us to have independent researches examining and analyzing our material. We have however analyzed the material individually and then compared our findings. We argue that this has increased the reliability compared to if we had done the analysis together.

We would like to point out that we through our work have tried to be as open as possible and that this is a factor in our reliability. By being detailed in the description of method, the empirical presentation and the analysis we have tried to make it easy for the reader to build their own view of our material and our process. We believe this helps the reader to critically examine our study.

Overall we argue that based on the context of this study the reliability is good.

5.7.4 Authenticity
Bryman (2011, p. 356-357) describes authenticity as issues related to the consequences of a study more related to the practical effects of the research. We are here going to discuss four types of authenticity.

Ontological authenticity relates to how the study helped people who participated in the survey to better understand the context they operate in (Bryman, 2011, p 357). In some cases, respondents emphasized that on basis of our questions they have gained a better understanding of why they are experiencing the phenomenon in the way they do. This we believe will strengthen our ontological authenticity.
The second type is the pedagogical authenticity. Bryman (2011, p. 357) explains that pedagogical authenticity concerns how the study has helped the respondents to gain a better picture of how other experiences the studied phenomena. In several cases, our respondents have, on the basis of our questions, highlighted that they can understand that it is possible to experience the phenomenon in other ways. With regard to this, we believe that our educational authenticity is good.

Catalytic authenticity is whether the outcome of the research allowed the respondents to be able to change their situation (Bryman, 2011, p 357). Based on the analysis we make and the conclusions we reach, we believe that we have highlighted what the respondents could change to affect their situation. This we believe will strengthen our catalytic authenticity.

The fourth authenticity factor is tactical authenticity. This concerns if the study gave the respondents the opportunity to, based on the study, take the required measures (Bryman, 2011, p 357). Our aim in this study has not been to find out how companies should do to take advantage of customer’s ideas. Our aim has rather been to understand in what business model dimensions the customers can be a resource. However based on our analysis and conclusions, we believe that there is a good opportunity for the company respondents to take action and take benefit of the ideas from the customers. We have achieved this by reconnecting to the respondents and sharing this study with the respondents.
6 Empirical presentation
In this chapter will we present our empirical material. The material will be presented in five parts; (1) patients, (2) nurses, (3) doctors, (4) managers and (5) company representatives.

6.1 Patients

6.1.1 Presentation of the respondents
• Peter – was first diagnosed with high eye pressure 18-19 years ago and he goes to regular eye pressure examinations two times per year. Before seeking help regarding his eyes he had experienced headaches and damaged vision on one eye. Peter first contacted a healthcare center and was remitted to the eye clinic at a hospital. Peter treats his current condition with eye drops once a day, but has also underwent both laser treatment and surgery because of his high eye pressure. Peter is active in a patient interest group but has never been involved in any work regarding the development of medical instruments or treatments.
• Per – was first diagnosed with high eye pressure around 9-10 years ago. He first became aware of his condition when he went to an optician in Asia for trying out new glasses. The optician measured his eye pressure and remitted him to a specialist clinic. The specialist clinic found out that Per had glaucoma and he started the treatment there. When he got back to Sweden he started going to an eye clinic at a hospital for further treatment. Since then, Per goes to an eye clinic three times a year. He has both been treated with laser and is currently taking eye drops to keep the pressure down. Per is active in a patient interest group but has never been involved in any work to develop medical instruments or treatments.
• Patrick – was first diagnosed with high eye pressure around 30 years ago. Patrick checks his eye pressure two times a year, earlier when he was trying different treatments he measured the pressure more often. He got the diagnosis at an eye clinic and has been treated both with laser and eye drops, he is currently taking eye drops. Patrick is active in a patient interest group but he has never been involved in any work to develop medical instruments or treatments.
• Pelle – was first diagnosed with high eye pressure around 45 years ago. He checks his eye pressure at least 6 times a year but this has varied during the years. He was diagnosed with high eye pressure at an eye clinic at a hospital. He takes eye drops regularly. Pelle is active in a patient interest group but he has never been involved in any work to develop medical instruments or treatments.

6.1.2 Part one – general question
For Peter a good examination of the pressure takes place at an eye clinic at a hospital, he cannot recommend healthcare centers. The reason for this is that when Peter contacted the local healthcare center they examined his eye and stated that the pressure was normal. However, since the doctor did not understand what was wrong the doctor remitted Peter to an eye clinic at a hospital. At the eye clinic they examined his eye pressure once again and concluded that it was well above normal. The healthcare center had failed to examine the correct eye pressure.

When Peter talks to people that suspects that they might have high eye pressure, Peter recommends them to go to a private eye clinic or an optician, which can remit the patient to the eye clinic at the hospital if the pressure is high. Per recommends people to
go to an optician to check the pressure and then if it is to high the optician can remit the patient to the eye clinic.

Per believes that how they measure the eye pressure at the eye clinic is the best way they can do it. He believe this because he has nothing to compare with, as he remember they measure the eye pressure the same way in Asia when he first got diagnosed with high eye pressure.

Patrick explains that he thinks the examination was better before, he feels that the doctors and nurses do not have the same time as before and that the healthcare works as an assembly line. He feels that the attitude has changed and today the staff at the eye clinic only sees it as a work and does not treat him as good as before, everything goes so fast today and there is no time to talk. Patrick also feels that he does not get good answers to his questions from the doctors; “...it is like they do not care as much as before”. When this happens Patrick gets anxious and does not feel secure. He explains that since he is almost blind he does not get that eye-to-eye contact with people and this might affect that he feels anxious and unsecure. Patrick explains that he would feel more welcome and secure if the attitude was different and someone took him by the arm and helped him around, showed him were to pay, were to sit and such. Furthermore he would also want more information at the examination about what is about to happen, how the treatment will be conducted and what is happening in the field of research concerning eyes and eye pressure. He feels that he gets more information through reading papers than he gets from the eye clinic. For Patrick a good eye examination is when he gets a lot of information and the doctor explains what is happening both regarding the examination but also how Patrick’s eye is. He describes that since he cannot see it is important that the doctor or nurse explains what they are doing, for instance when they put in the anesthesia in the eye.

Patrick also explains that it is good when the doctor discusses with him regarding what aid he could need in his daily life. When he does not get information from the doctors Patrick tries to go to events where he can learn about the eye, he also says that the Internet is a source for information. A problem when he looks for information (on the Internet) is that he does not know what he should be looking for. Patrick also explains that he has heard from other patients as well that they do not get the information they want from the doctors or nurses.

According to Pelle a good examination regarding the eye pressure is an examination where the nurse or doctor get the pressure right the first time. It is not often that the doctor or nurse has to measure more than once, but it happens. Pelle explains that sometimes when they have to re-do the examination it is because Pelle was not being completely still. The reason for him not being still can sometimes be that the machine is not correctly adjusted to him, where his chin might be a bit too high or too low in the machine. However Pelle describes that he has never been afraid to tell the nurse or doctor if the machine is not correctly adjusted to him.

When Patrick was diagnosed with high pressure he got some information from the doctors and he believe it was better than it is now. He also thinks that the examination would become better if the doctors had fewer patients and could spend more time with each patient so that every patient could get more information.

When Peter goes to the hospital to check his eye pressure – he meets a doctor once a year and once a year a nurse. If there is anything out of the ordinary the nurse can remit
him to a doctor. Per describes that when he goes to the clinic it is a nurse that take the eye pressure and then afterwards he sometimes meets a doctor and sometimes the doctor contacts him by phone or mail.

Through speaking with other patients with high eye pressure in other parts of the country Peter has gotten the impression that the care at the hospital where Peter is treated is very good. What is good with the treatment is that the clinic is not understaffed. When Per has talked to patients with the same diagnose from other parts of Sweden (through the patient organization) he cannot recall that they have ever discussed any differences around the examination of the eye pressure.

The first time Peter was examined for high eye pressure he did not feel very secure, this was at the healthcare center and it was the method that did not feel very secure. Peter felt more secure at the eye clinic at the hospital since they are specialists and that they also had other type of equipment. Peter also explains that the doctors and nurses at the healthcare center have a wide variety of tasks while the doctors and nurses at the eye clinic are specialists. Per was also feeling unsecure when he first was diagnosed with high eye pressure, but this was mostly because the doctors at that time did not know what was causing the high pressure. The doctors were afraid that it might be a tumor of some type and Per felt unsecure until they could conclude that it was glaucoma. Now when Per has been going to regular checkups for several years he do not feel unsecure and he trusts the nurses that do the examination. However he explains that he has a relative that feel discomfort when putting the head in the bio-microscope, but Per himself has never experienced this. Through the patient organization that Peter is involved with he has never heard that patients are scared or anxious before their first examination.

Pelle describes that he notice quite clearly if the person doing the examination is experienced or not. He gives an example of his eye doctor who is experienced and always describes what she is doing as well as asks Pelle if everything is alright.

Peter describes that he believes that the instruments for measuring the pressure has developed quite a lot from his first examination. He believes that with the instruments of today doctors or nurses at the healthcare clinic should be able to measure the pressure without any problem. However Peter has heard that the eye clinic at the hospital where he measures the pressure has quite old instruments, but as he says “…they seem to work fine anyway”.

Pelle believe that the eye examination would be better if he always meet his doctor, but at the same time he says that he knows that this is not possible. One or two times Pelle have been examined with another type of machine that does not touch the eye, he believe this is better but he does not know how good measurements this machine gives. He also believes that the instruments have developed a bit since his first examinations. Pelle feels safer when it is someone he knows that takes the pressure and when this person is experienced.

Peter describes that he sometimes has thought about that it would be good to detect high eye pressure earlier. He has an idea that measuring the eye pressure could be done at the health checkups that everyone is called to at the age 40, 50 and 60. He believes that this would save a lot of future patients.
Peter and Per do not see that there are any common problems with the examination as it is today. Peter explains that the problem is not the examination but it is getting to the examination. He also explains that he is lucky that he lives quite close to the eye clinic at the hospital since it is much worse to get to the clinic for the people living further away. Per explains that it would be better for him if he could take the eye pressure at the healthcare clinic instead of the eye clinic at the hospital because he has to travel to the eye clinic at the hospital. However he believes that the reason that he cannot take the pressure at the healthcare clinic is because the county does not have enough money to buy the equipment. Patrick has experienced that the person doing the examination can become irritated if he moves during the examination. He has also experienced that the person who is measuring the pressure and not succeeded has to get help from a colleague to get a correct measure. When this happens Patrick becomes anxious and thinks that it is his fault that the first person could not get a correct measure, he also becomes anxious that all the staff does not have the correct knowledge. Staff with more experience is usually better according to Patrick. Another problem that Patrick experiences is that sometimes the staff can tell him that a pressure of 16 is normal and the next time that a pressure of 12 is normal, then he becomes unsecure and wonder why both pressures are normal even thou they are not the same. Pelle can think of only one common problem with the examination, it is when it is someone less experienced that does the examination and sometimes has to try two or three times before they get it correct.

Peter got the first information about the diagnose he received was from the staff at the eye clinic after they concluded that his eye pressure was too high but at the healthcare center he did not receive any information. He also describes that it happens that people who has recently been diagnosed with high eye pressure contacts the patient organization to get information. But Peter stress the fact that he is not a doctor just another patient and the information he can give is more from the patient perspective and he often talks about his own experiences. Through the patient organization Peter has also come in contact with patients that where diagnosed at a later stage of their disease and therefore lost more of their vision than they would have needed to if they had been diagnosed earlier. One common problem for patients that are diagnosed at a later stage is that their vision is so bad that they lose their driving license. Pelle has gotten all information about his eyes and diagnoses from the doctors at the eye clinic.

6.1.3 Part two – specific questions regarding business model dimensions

Peter, Per, Patrick and Pelle all thinks that it is really good and valuable that it is possible to measure the eye pressure since it can identify dangerously high pressure and prevent blindness. But Peter also explains that the instruments for measuring eye pressure cannot identify normal pressure glaucoma.

When Peter got the information that he had high eye pressure and that this was the reason to his changing vision and headaches he felt relieved that he got an explanation. One additional value that Peter identifies is that it would be good if the instruments where easy to transport and easy to use. This would make it possible to use them at healthcare centers and it would not require eye specialists to manage them, he adds that he does not know if this already exists and that the examination could be done with the health checkups at 50 and 60 years age. Per shares this idea and believes that it would be very valuable if the pressure was measured regularly as part of regular health controls in order to detect any high pressure earlier. Per also believes it could be good if it was possible to measure the eye pressure more regular and at more places. He
however does not know what these places could be. One problem he sees today is that people buy glasses at other places then opticians and that they never get their eye pressure measured. If there were to be instruments for measuring eye pressure at the healthcare clinics, Per says that it would be good if the companies could train the staff in the usage of the instruments. Patrick thinks that since there are so much new technology it should be possible to measure eye pressure without having to touch the eye, which he thinks is quite annoying. One idea he has is that it might be possible to x-ray the eye or take a photo of the eye in some way to get the pressure. Pelle thinks that it would be valuable to be able to get a more compressive examination when he measures eye pressure, so he could get more information about his eyes.

Peter does not feel any need to get information from the companies producing the instrument for measuring eye pressure, neither does he or Per have any idea on what channels the companies could use to get feedback from patients. Per does not feel that he has any relationship with companies producing equipment for measuring eye pressure. Peter and Pelle share Per’s view and does neither feel that they have any relationship with the companies. Both Peter and Per feel that their relationship is with the doctors and nurses that they meet at the eye clinic. He also believes that the nurses and doctors give him good answers if he has any questions.

Per has an idea that the companies could try to build a relationship with the patients through participating in events that the patient interest groups arranges. Per stresses that he as a patient is in the hands of the doctors and nurses and that he only sees that they use some type of instrument but that he does not know more than that. However Per explains that he would want to get more information from the companies about how the pressure is measured and the instruments, he also believes that other patients would be interested in this. Per says that one channel for this information, besides events, could be the patient organizations magazine. Patrick does not have any ideas on what channels the company should use. However Patrick would like it if the company tried to build a relationship with him as a patient, he thinks that Facebook could be a channel for this. Pelle does not have any idea on what channels the companies could use but he believes it would be good if it was possible to measure the pressure at the healthcare clinic and not only the eye clinic at the hospital. He sees no value in having a relationship with the companies producing instruments for measuring eye pressure.

Per remembers that when he got his diagnose it was hard to get information but then he came in contact with the patient interest group. It is through the interest group he has gotten information about glaucoma and high eye pressure since then. Per believes that one reason for the lack of information in the beginning was that he got diagnosed in Asia and when he came back to Sweden they just continued the treatment. When a company has established a relationship with a patient Per believes a good way to keep this relationship is through emails and through the patient organizations magazine. Patrick search for information himself and sometimes when he asks staff at the eye clinic about things he have read they do not have time to answer and sometimes they do not know the answer. If a company had made a relationship with the patients a good way to sustain it would be through sending information according to Patrick. Furthermore Patrick explains that it would be very good if the companies could go in to his journal and propose treatments based on new research and such. Patrick would also like to be able to ask questions to the company through Facebook. However he explains that one negative side of Facebook is that it is not as personal as a meeting in person. Patrick also say that maybe in the future it would be possible to measure the eye
pressure through smartphones. Patrick would also like to be able to measure the pressure more often than he does now. Patrick is also a bit worried that the eye clinic is measuring the pressure in the same way as they did 20 years ago, he believes that the technology must have developed a bit since then.

Peter is confident that the economic value of being able to measure eye pressure is high, both for the individual patient and society. For the patient Peter believes that the greatest benefit is that he or she does not have to suffer and for society the benefit is that it saves a lot of money, since patients does not become blind and requires escorts. Peter believes that the eye pressure should be measured regularly and not only when people start having problems with their vision. Per also believes that measuring the eye pressure has an economical value but he does not know what it is worth. Patrick does not have any idea on what the value in money is but he is confident that through advertising it could be increased. Pelle does not know how much the value of being able to measure the pressure in the eye is worth but he believe it is of high value, since it is possible to treat the pressure if it is found and prevent damage to the eye.

Peter has no idea on what resources the companies need in order to supply products for measuring eye pressure. However he explains that the instrument has to be easy to use and reliable. Per have no direct tips for the company on what resources they need to produce the product. He believes that their role is to provide good instruments that give correct measures, but taking care of the patient is the responsibility of the hospital. Regarding the instruments Per is quite sure that the instruments at the hospital are good and that they measure correctly. He is unsure about the instruments at the opticians and he wonders whether they are as good and measure as correctly as the instruments at the hospital. Patrick has no idea on what resources the companies need but he is confident that it cannot be too much information. Pelle has no idea on what resources the companies need, he argues that if you don’t know something than you cannot know it, however he is certain that it will be new products developed in the future.

Peter has one idea regarding what activities the companies need to do, it is that they should make sure that the users use the instrument correctly, he believes that some type of training is needed for the user. Peter explains that it could be an idea to have specialist nurses that is focused on eyes in the healthcare centers, as there are nurses specialized in asthma today. Patrick has an idea that the companies producing instruments for measuring the eye pressure could have events where they could spread information. He also believes the companies could participate in events arranged by patient interest groups. Pelle explains that he is certain the companies already have doctors helping them develop new products and that this is good.

Peter has no spontaneous idea on what partners the company need to have, but he believe it is good that the companies know how the healthcare centers and eye specialists work. Per believes that the companies producing the instruments for measuring eye pressure could benefit from having a partnership with patients in order to get information, he also believes it would be good to have collaboration with the eye clinics to get feedback. Patrick says that having some doctors as partners could be a good idea. Pelle has no idea on what partners the company need.

Throughout the interview Peter mentions that healthcare centers, eye clinics and opticians need to be able to measure the eye pressure. Besides these customer groups Peter has heard about some type of instrument to measure the pressure at home. But he does not believe that people get that type of instrument as a preventive action, he has
neither felt any need to be able to measure the pressure by himself at home. However he has an idea that the possibility to measure the eye pressure at home could be good for people living far away from the eye clinic, especially in the beginning of the treatment before it is known if the treatment works. Per believes that if the healthcare clinics got the equipment to measure the eye pressure than that would be enough. Patrick has no idea on other possible customers except eye clinics. Pelle believes that opticians, eye clinics and healthcare centers could benefit from having instruments to measure the eye pressure.

6.2 Nurses

6.2.1 Presentation of the respondents

- Nina – is a district nurse at a healthcare centre located in the northern part of Sweden. She has been working as a district nurse for the healthcare centre for 14 years and before that she had a similar position to the one she has now. As a district nurse she takes care of the patients, answer questions, gives guidance, do vaccinations and she do this with close contact to a doctor. Measuring eye pressure is one part of her job, which she does about four to five times per month.

- Nicole – is a nurse at a local health care centre. Her work assignment ranges from standard vaccinations to taking care of emergency patients. She has previously been working in Switzerland where she took care of patients who had myocardial infarction or need of emergency medicine.

- Nathalie – has been working as a nurse for about 10 years at a healthcare centre in the northern part of Sweden. Her work assignments include the usual “nurse assignments” but also makes health profiles in order to prevent heart diseases for people around the ages of 40, 50 and 60. She also assists doctors and works in the lab.

- Nova – has been a district nurse since 2007 at a healthcare centre in the northern part of Sweden. She gets to meet everyone from the little baby to the old lady or gentleman in her daily work. She also gets to make her own daily schedule that only changes if something unexpected happens, like an emergency. Measuring eye pressure is one part of her job and the amount of examinations varies a lot between different months.

6.2.2 Part one – general question

In order to get a good eye examination, it is important that the patient and the nurse are having a good cooperation and that the equipment is working as intended according to Nina. She says that explaining what is going to happen to the patient is important. Furthermore she explains that both the questions she asks and the answers she give are important for the cooperation. Cooperation is also something that Nathalie mentions as she stresses the importance for the patient to know what will happen, even if the patients normally just accept the procedure and do not ask many questions. When asking her how she knows what to tell the patients Nina answers “It is experience, I have been doing this for 14 years”. The importance of good communication is also something that Nicole mentions.

A good eye examination is according to Nova when the patient comes to the healthcare centre under calm circumstances and Nova can explain what is going to happen during the procedure. She also thinks it is important to tell them if their result is within the “normal” interval for eye pressure. Furthermore she stresses the importance of making
sure that the patient is not stressed or afraid of the procedure. Nova also thinks that the patient needs to get confirmation that his or her eye will not be damaged during the procedure. A lot of what she says comes from the information in the manual that came with the bio-microscope. By using the manual as guidance she can be very thorough when explaining the procedure.

Both Nathalie and Nicole believe that it is important to know the instrument used for measuring eye pressure because knowing the instrument and the procedure makes you confident. This confidence is transferred to the patient who then feels more secure. In order to feel confident the instrument needs to be easy to use and give correct answers according to Nathalie. Nova mentions that is would be good for her, on a personal level, to know more about the meaning of different eye pressure results. Today she feels a little unsure of whether examining an eye with extremely high eye pressure could damage the eye or not. Sometimes she asks them what their usual eye pressure is but most of the patients do not know the answer to that question. One specific situation when Nova feels that more information on the subject of high eye pressure would be an advantage is if the patient has high eye pressure and asks what that means. She continues by explaining that the general approach that they have at the healthcare centre makes them know a little about a lot, but lack specialist knowledge. What Nova would welcome in order to bridge this knowledge gap is to know where she can obtain reliable information about eye pressure. She has been given the opportunity to visit a hospital in order to learn more about eye pressure, but Nova says that it is hard to find the time to actually go there.

During the procedure it is vital that the anaesthetics are working correctly and that the patient is sitting completely still according to Nathalie. In order to get the patients cooperation Nathalie tells the patients what is going to happen step by step.

In order to ensure that the patients won’t be afraid and unsecure it is also important for Nicole to not be in a stressful situation. She usually tells her colleagues that she needs a little extra time when measuring eye pressure in order to give herself enough time with each patient and to ensure that each examination will be done properly.

In order to know the instrument properly both Nicole and Nathalie were educated at a specialist clinic at a hospital. Nicole also turns to the hospital whenever she encounters something that is unusual regarding a patient’s eye pressure. Another source of training came from the company providing the instrument, according to Nathalie. A part from this training Nathalie does not feel the need for any further training since “this instrument is so easy to use”.

Even though both Nathalie and Nina thinks the current method for examining eye pressure is good, they still thinks there are some room for improvement. One such improvement is a mobile unit that can measure eye pressure on patients lying down or patients who cannot put their heads against the bio-microscope. Nathalie mentions that one problem that she encounters when examining eye pressure is when there is a need for a more mobile instrument. People with certain disabilities make it impossible to use the preferred instrument for measuring eye pressure according to Nathalie. She also believes that a mobile unit would be preferred for other potential customers such as elderly care.

Another potential area for improvement is according to Nina if the use of anaesthetics was not necessary, she believes that this causes some troubles for the patients after the
actual examination. Even though Nina is well experienced with the procedure of measuring eye pressure, she is still a bit unsure on whether anaesthetics really are necessary. A part from these potential areas of improvement Nina is very happy with the current procedure of measuring eye pressure and the instrument used for this procedure.

6.2.3 Part two – specific questions regarding business model dimensions

Nina believes that the company producing instrument for measuring eye pressure creates value by adding simplicity to the procedure and making sure that they can do the procedure at the healthcare centre. Before the current instrument Nina had to practice a lot in order to be able to handle the previous instrument and she was the only person at the healthcare centre who was able to use that instrument. Now there are more people at the healthcare centre who are able to do the procedure according to Nina. Being able to measure eye pressure at the local healthcare centre is something that Nina and Nova believes is valuable, especially for the patients who otherwise would have to travel 100 km to the nearest hospital. This creates value both for the patient and the environment according to Nova. Nicole believes that the value is that the patients will know whether everything is okay or if his or hers eye pressure is outside of the normal. According to Nova the patient can get that information the day after the examination.

Nova also thinks it is valuable that the procedure is not dependent on her; she believes it is better if the instrument makes the calculations and decides whether the result is okay or not, this feels much safer according to Nova.

One part of the value created by companies supplying instrument for measuring eye pressure is that it saves time according to Nathalie. She also thinks that the instrument she is currently using is easy to use even thou she thinks that she needs to do the examination rather often in order to feel that it is a good examination.

When talking about value that the company could provide the healthcare centre Nina mentions the importance of having clear instructions on how to use the instrument, both by providing education for the staff and a manual. The manual is mostly for those who use the instrument more sparsely says Nina and uses ambulance personnel as an example.

Nina says that those who have not used the instrument before could get education about how to use an instrument from an educational film produced by the company. It could show new users how to handle the instrument and how the whole procedure of measuring eye pressure should be preformed. She believes that this film should be available on a CD-ROM, YouTube or on the company website. When asked about different channels, Nicole tells us that she don’t know anything about that, but she tells us that she usually gets information about new products from the specialist clinic at the hospital. A part from that she doesn’t get any information about new products because, as Nicole says, “I’m just an employee, I’m not a manager”. She never thinks about the companies providing products to the health care clinic and she never has anything to do with these companies. This is also mentioned by Nathalie who feels that she cannot influence the purchase decisions made at the healthcare centre and that she does not need any more information to do her job.

Nina and Nova think that they should have the possibility to call or by some other means contact the producers if the instrument is malfunctioning or if there is some other type of problem with the instrument.
Having the company calling you every once in a while to check if everything is all right is something that Nina and Nathalie thinks could help the company build and maintain a relationship with its customers. However, this is not something that is usually done within the medical instrument industry according to Nina. She also believes that the company could offer continuous training as a way to build and maintain the relationship. Nina believes this to be important since the training always becomes better when people from outside their own organisation train the staff. She says that it creates credibility. Nathalie also mentions that the company representatives could come once in a while to check if the personnel are doing everything correctly. Nicole believes that one way to build a relationship is by sending out demo-products so the users become aware of the existence of the product.

The monetary aspect of the value created by an eye pressure instrument is not something that Nina knows a lot about, she believes that it has something to do with cost savings for the county council. How the healthcare centre would want to pay for a product or service is not something that Nathalie knows anything about, but she mentions that improvements in the current examination or its results for Nathalie and the patient are not something that is noticed by anyone else. Nova thinks that the monetary value can be very high, since it allow nurses to perform a procedure that a doctor normally do and they do not have to send the patients to the nearest hospital.

Nina, Nicole and Nova do not have any thoughts regarding resources needed for a company providing instruments for measuring eye pressure. Knowledge about eye pressure, knowledge about the diagnosis, knowledge about the customers’ role and knowledge about procedures is an important resource according to Nathalie.

To train its customers in usage of the instrument and the procedure is an activity that is important for the company according to Nina. Nathalie builds on what she has previously said about the company regularly contacting the healthcare centre in order to check on them, saying that this is one of the activities that the company need to perform.

A potential partner for a company providing instruments for measuring eye pressure could be the providers of anaesthetics says Nina. Other potential customers to the company are according to Nina and Nathalie opticians and Nina also mentions occupational health care.

6.3 Doctors

6.3.1 Presentation of the respondents

- Donald – is an operations manager and a doctor specialized in general practice. He has been working at a healthcare centre for about 20 years. At the healthcare centre they treat people with all different kinds on problems, ranging from accidents to patients who are there to get a health check-up. When it comes to eye examinations the healthcare centre usually do more investigations before sending a patient to the hospital.
- Diana – has been a doctor for about seven months at a healthcare centre in the north of Sweden. Her work assignments include going rounds to check on the patients, taking care of emergency patients and taking care of pre-booked patients.
- Donna – is a doctor that has been working at a healthcare centre in northern Sweden for 2,5 years. She describes her work as the first line of healthcare that
takes care of almost everything, from planned health check-ups to emergencies, from myocardial infarction to chronic diseases. She has previously been working with similar assignments for 4 years but for a different employer. She performs around 4-5 eye pressure examinations per month.

6.3.2 Part one – general question
A good eye examination regarding potential high eye pressure should be intuitive according to Donald. He continues by saying that both the procedure and instrument needs to be simple and easy to use with reliable results. Simple is also something that Donna and Diana mentions when describing a good eye pressure examination, but Donna also think that the examination needs to be safe. Donald, Diana and Donna think that the simplicity of the procedure is especially important for those who do not perform the procedure that often. According to Diana the instrument should be designed in a way that makes it hard to fail when performing an eye pressure examination. The reason for the safety concerns from Donna is because she feels it is important that she does not do anything wrong. Donna feels that the current instrument is both safe and simple, even though she just got a small demonstration when she was introduced to the instrument.

Both Donald and Donna think that a mobile instrument could help them in their work since not all of their patients are able to sit at a bio-microscope and sometimes they even do home visits. Today they explain that they use a special room designed for eye examinations with a stationary bio-microscope, and if they could use a mobile instrument the dependence on that specific room would be less says Donna. Another potential improvement that could be made according to Donald and Diana would be if they did not have to use anaesthetics. This would be good because not every nurse is allowed to give anaesthetics explains Donald. Donna explains that the blink reflex can also be a problem.

When performing an eye examination the doctor or nurse tells the patient about the examination according to both Donald and Donna. However, Donna still thinks it would be valuable to give the patients written information before the examination so they know what is going to happen and what is expected of them during the procedure.

When performing an eye pressure examination Donna usually follows the instructions on the manual that came with the instrument, which has a lot of describing pictures in it.

Donald mentions that there are no clear guidelines on when to make an eye examination, but they usually do it when a patients experience some kind of trouble with the eye, if the eye is red or if the patient has glaucoma. However, both Donald and Donna says that an eye pressure examination should be done more often, maybe in connection to normal eye examinations. The reason why they do not do it regularly is because of the current workload, according to Donna.

6.3.3 Part two – specific questions regarding business model dimensions
Donald thinks that a company that produces instrument for measuring eye pressure creates value by making it possible to measure eye pressure and do follow-ups in order to control that the treatment is working. Another factor that Donna mentions is the fact that they are able to perform eye pressure examinations at the local healthcare centre instead of having to send the patient to the hospital, which is located far from the healthcare centre. She thinks that people, and especially the elderly, should not have to travel long distances just to get an eye pressure examination. Diana thinks that the
current instrument is good and simple enough so that more than just one person can easily perform the procedure and this makes it ideal for healthcare centres located in rural areas. Donna also thinks that a company that supplies instrument to the healthcare centre could create value by making their procedures more effective without compromising the safety of the patients. She continues by saying that the easier a procedure is, the more often that procedure will be performed. The safety of the patients is something that Diana mentions when she says that an improvement from the current procedure would be if the part that touches the eye were expendable parts that could be changed between each examination. This would decrease the risk of getting an eye infection according to her.

Donald also thinks that it would be good if the patient could measure its eye pressure on its own, in that way he or she does not need to take a day off from work and/or travel long distances in order to do the examination. Donald continues by saying that the distribution of products for self-examination could be done both through healthcare centres and directly to the patients. If a patient could measure its own eye pressure it would make the workload less for the healthcare centres says Donald.

One possible channel for a company that produces instruments for measuring eye pressure is patient groups says Donald. Another channel mentioned by Donna is personal meetings where she can try new instruments. She thinks personal meetings would be much better than mail-advertisement or flyers. Today she just get to try new product at different fairs, but since she does not have any responsibility of the purchase decisions being made at the healthcare centre she feels that her influence is very limited. Another potential channel of information is different colleagues from other healthcare centres or hospitals that Donna can come in contact with through her personal networks. She continues by explaining that they usually meet at fairs where they talk about new procedures or new products that they use. Once Donna thinks a new product or procedure is good she talks to the group of doctors at the healthcare centre and the manager. If the doctors think it is a good product or procedure it becomes more likely that the manager agrees to purchase that product or implement that procedure says Donna.

It is good for a company to have a relationship to the Swedish healthcare and in order to create a relationship it could be good to meet customers together with representatives from the healthcare sector according to Donald. He also believes that it creates legitimacy if a company has a relationship with the healthcare sector in Sweden. This legitimacy comes from the high regard people in Sweden have for the public healthcare system. By having a nurse or a doctor telling patients or colleagues about something it gives it legitimacy, according to Donald. In order to create a relationship with the Swedish healthcare a company could have its instrument available for testing of some sort says Donald, he continues by saying that any other way would probably be difficult. Donald also believes that the testing periods could become a source for feedback from the customers and he explains that companies providing medical equipment rarely request feedback.

Another potential relationship building activity could be to attend lectures on eye pressure or lecture on the subject. By doing this, Donald explains that a company could get the chance to show its instruments. However, relationships with suppliers of healthcare products are not something that Diana wants, she says that she would not
have the time to have any relationships. She also thinks that relationship with suppliers is something for the managers, and not something that concerns her as a doctor.

In order for a company to sustain a relationship Donald thinks that the product need to be constantly developed so the company could come back and tell its customers about the new features, which might have been developed because of feedback given by the customer. The possibility of maintaining the relationship with its customers decreases if the company does not develop its product and provide new information, says Donald. According to Diana it does not have to be a constant flow of new products, instead she believes that by having a great product from the start is the key relationship-maintaining factor. Donna on the other hand just thinks that the company need to show a general interest in the customer, even after the product is sold. Interest could be shown by just asking how the customers perceive the product and how it is working out for them.

Monetary value created by a product for measuring eye pressure is not something that is known to Donald or Donna. Donald says that everything within the healthcare system is considered a cost, which means that more patients mean bigger losses. However, he does believe that if a product can make an examination faster and simpler then it is a good thing for the healthcare centres business, but it is not in terms of monetary gains. Another activity that Donald comes back to is self-examination that could save money for the healthcare centre, and he explains that there could be specifically dedicated rooms where patients could examine themselves. In these rooms the patients could take their own blood pressure and potentially perform an eye pressure examination without having any nurse or doctor there to instruct them according to Donald. When it comes to costs Donna does not think that anyone has the overall picture and no one is considering the total effect of the personal suffering, the cost for the county council and the investments needed to make the patients life easier.

Both Donald and Donna do not have any specific thoughts about how a healthcare centre would like to pay for an instrument. However, Donald mentions both straight buy and a subscription model when asked about how the healthcare centre might want to pay. He says that the straight buy concept is the most common way healthcare centres do business, but he opens up for a potential subscription model if it comes with upgrades, service and support.

Donald does not have any thought on resources needed to provide value by companies and Donna mentions knowledge about potential errors that might occur during procedures.

One of the activities mentioned by Donald is the production of a user manual, according to him the user manual should contain pictures or even a movie showing how the procedure is performed from a user perspective. He mentions that you should not just sell a product but a concept containing education and support for the employees. This is something that a lot of companies fail at and he also mentions that this information could be for the patient. Donna says she only need to meet the company representatives over a lunch to get some information and provide feedback about their product.

One potential partner for a company providing instruments for eye measurement could be patient organisations if the company tries to develop some kind of application that the patients themselves could manage, says Donald. Donna thinks that healthcare facilities could be a potential partner that could help the company improve by constantly giving them feedback. Other potential customers that Donald mentions could be
healthcare that is run by Sweden’s municipalities. Both Donald and Donna believes that the elderly care might be interested in an instrument for measuring eye pressure.

6.4 Managers

6.4.1 Presentation of the respondents

- Maria – has been a manager for three months. She has the overall responsibility for the budget, staff, economy, work environment and purchasing. Maria works at a healthcare center in the northern part of Sweden.

6.4.2 Part one – general question

Maria explains that the most important thing in an eye pressure examination is the patients’ safety. Next after this is that the instrument have to be user friendly (easy to use), safe and cost-effective. In order for a product to be safe for the patient, Maria explains that first of all the product has to be safe. It is also important that the interaction with the user works well so that the usage of the instrument is safe, it should be impossible to make mistakes that could hurt the patient. Maria continuous and explains that a user-friendly product is a product that many people can use without needing to use it regularly, it should almost be so simple that the user can just follow a manual and step by step be showed what to do. She explains that it is good if people that do not use it regularly can use it without that much training. Maria describes that an important part of cost-effective is that it is not too expensive to fix the instrument if it breaks and that it does not take an hour to measure the eye pressure, it has to be fast.

Maria does not fully know how the examination works today and therefore she does not have any ideas regarding how the examination could be developed.

Maria describes that a common problem is that the instrument cannot be used to measure the eye pressure in a patient’s home, but on the other hand they do not do any home visits anymore.

6.4.3 Part two – specific questions regarding business model dimensions

Maria describes that it is a high value that it is possible to measure patients’ eye pressure. She does not have any other idea on what value that the company could create.

Maria describes that when the healthcare center needs to buy something over 20 000 SEK they have to go through the county purchasing organization and therefore Maria thinks that the county purchasing organization could be a good channel for the company. She describes that even if the healthcare center wants a product it has to go through the county organization if the price is over 20 000 SEK. Maria also describes that when the healthcare center is thinking about buying some type of specialist instrument they often contact the specialist clinic at the hospital, for example the eye clinic.

Maria describes that there are a lot of companies contacting her, both through mail and telephone to get the healthcare center interested of their product. She also explains that she does not believe this works to build a relationship with her, especially since many products cost over 20 000 SEK and then they have to be bought through the county organization.

Maria describes that she finds it hard to put a monetary value on the value that is created by being able to measure the pressure. She describes that a product they use has a high
value but she also says that even if it is only one patient a year that needs a product but it is very important to have the product for this patient, then there is no limit to this value.

Regarding resources Maria describes that she thinks the company needs good technicians that can test the instrument, make it safe for the patient and user-friendly. She concludes that companies need to be able to develop the instrument, market it and then sell their products.

Maria cannot explain what activities the company needs to do but she explains that they have to make the product safe, user-friendly and economically attractive.

Maria describes that she thinks the company needs a bank or some other partner that can support the company financially. Furthermore she believes the company needs to partner with the authorities in order to get patents. She also describes that the company needs to partner with technicians and the university, or some type of researchers.

Maria believes that the customer could be anyone that has patients that need their eye pressure examined, this could be healthcare in the county or private companies.

**6.5 Company representatives**

**6.5.1 Presentation of the respondents**

- Carl – is one of the shareholder of the company and has a non-technical background, he has been involved with the company for approximately 2 years. Carl has more than 20 years of experience from University, consulting and Start-ups. He was not a stakeholder in the company before the bankruptcy.
- Charlie – was before the bankruptcy head of research and development (R&D) at the company and now works as a consultant for the company. He has been involved in the company at different levels for over 10 years and was head of (R&D) for four years. Charlie also works with research at a hospital.
- Christoffer – is acting CEO of the company and also a shareholder. Christoffer has worked in the company since it was founded (before the bankruptcy). He has experience both in sales and the medical instrument industry.

**6.5.2 Part one – general question**

Christoffer, Charlie and Carls think that an examination regarding high eye pressure has to be simple, safe, high quality and create reliable results. Carl also explains that it is important that the treatment and the instrument should be safe so it cannot transfer bacteria from one patient to another. A part from safe, simple and reliable results Charlie wants to add non-dramatic to the list and Christoffer thinks the procedure needs to be user-friendly. Christoffer explains that user-friendly is when the person using the instrument feels safe and that it easy to understand how to use the instrument, it is also important that the instrument clearly states if there is an error. In order to ensure that it is easy to use Christoffer believes that there is need for a manual concerning the instrument and the examination.

Charlie explains that it is important that both the patient and the person doing the examination feel safe with the examination and the result. He continues by explaining that fast is both that the examination goes fast but also that it is simple and fast to set up the instrument etc. This is especially important since measuring eye pressure is just one part of an eye examination says Charlie. He also explains that especially young patients
can feel anxious because something is going to touch their eye during the examination, therefore it is important that they feel safe. It has happened previously that patients faint during the examination because they are so stressed says Charlie. Carl believes that after the treatment the patient feels relieved, since the eye is so sensitive it is important that the examination is done with care. He also thinks that one way to avoid a careless treatment is through education and routines. He explains that education of the staff doing the examination and using the instrument is important. He also explains that education could be a complementary service to the product they produce. One way of showing how the instrument is used and to educate new users is through an educational movie says both Carl and Christoffer. Christoffer also suggests that it might be good to have educational tests as well to complement the video.

Carl explains that one negative side of their method for measuring eye pressure is that the eye has to be anaesthetized. A positive side on the other hand is that their method works on laser treated eyes. Furthermore Carl argues that the competitive advantages for their instruments are simplicity and that the measurement is fast. He also explains that developing a cap for the tip of the instrument that goes into the eye is necessary in some markets and that it could also create an aftermarket for the company.

Carl’s view is that if the company cannot sell to its home market then it will not be able to sell to any foreign markets either. Furthermore Carl believes that selling to the home market enables the company to collect feedback from customers and if necessary adjust or change things regarding the product or service. Carl explains that the company mostly targets eye clinics at hospitals and healthcare centers. He explains that the company has a view that the Swedish healthcare is getting decentralized from the hospitals to the healthcare clinics.

Carl finds it hard to describe how the examination could be developed since he himself never has gone through an examination to measure his eye pressure. However, he describes two areas that he thinks could be developed. The first one is the cap to protect the tip of the instrument and the other one is if it would be possible to do the examination without anesthesia. Christoffer also think that removing the need for anesthesia would be an improvement. He also believes that it would be good if it was possible to do the examination without having the instrument in the bio-microscope. Christoffer does not know how the examination could work without anesthesia but he has some ideas on how the instrument could be used without the bio microscope. Charlie describes that informing the patient on what effects the measurement, for instance how blinking effects the measurement, could lead to fewer faulty measurements. Furthermore Charlie explains that he has mostly been involved with eye examinations in eye clinics and that the employees there are specialists.

6.5.3 Part two – specific questions regarding business model dimensions

Carl believes that the company creates value by adding simplicity, safety and quality to the examination through their instrument. Charlie describes that the company creates mostly two values, the first is that through the instrument it is possible to diagnose if the pressure is too high in the eye and the second is that it is possible to measure if the treatment is working (if it is working the pressure goes down). Christoffer describes that there is value created both for the healthcare since with their product healthcare centers can measure the pressure and also that there is value for the patient that does not have to travel as far. He also explains that diagnosing high eye pressure saves money for the society. Christoffer describes that by being able to measure eye pressure at the local
health center there could be some staff there that finds their work more interesting since they get new responsibilities.

An additional value that Carl believes the company can add is that it could calibrate the instrument yearly or every second year to make sure that the instrument works correctly. He also explains that the cap he earlier discussed as well as education could be other areas through which the company could add value. Charlie has an idea that people with a history of high eye pressure in the family could measure eye pressure more often and that this could help identify high eye pressure at an earlier stage and make the person feel safer.

Carl has an idea that the company could add a new type of value by getting the instrument closer to the patient, especially elderly patients, so they do not have to travel and that it could be familiar people to the patient that did the examination. Charlie describes that an additional value could be to build in a function in the instrument that measured the pulse in the eye and this could give additional information. Christoffer does not mention any idea regarding any additional value the company could create.

Carl, Charlie and Christoffer explains that before the bankruptcy the company sold the instrument through agents and distributors mostly abroad and the company had very little interaction with the end user. One new channel that Carl sees potential in is the Internet and selling through the company website. He is also of the believe that in a not so distant future the company could be sold to some other owner with their own established sales organization and channels for distribution. Carl also describes that if necessary the company could put together their own small sales team. Charlie believes that it is hard to initiate sales through a website but that it is good for selling consumables. Furthermore he explains that it is important to understand how different customers buy, for instance private clinics might buy directly and pay by credit card while counties need to have a procurement process and need invoices. Charlie does not see any other potential channels more then distributors or selling through the website for sales. But he has an idea that the patient could get an auto-generated email after the examination telling the patient if their eye pressure was normal, he believes this would be quite simple to construct. Christoffer believes that one channel to find new customers could be by going to more congresses and fairs.

Carl believes that one of the problems before the bankruptcy was that the company did not establish any relationship with the end users since they worked only with agents and distributors. Carl sees the website as a good way to create a relationship with the existing customers and potential new customers. He explains that the website is a good channel for the first contact and that it is needed for some staff that can follow up on this contact. Carl also sees complementary services as training and calibration as potential areas to establish a relationship with the customer. He also highlights that customers are a good source to get feedback on the product and potential areas for development. To get this feedback Carl believes that the customer has to have someone in the organization to contact and that the organization actively should contact customers to get feedback. Carl also explains that he views the customer as an important recourse for spreading information about the product and the company as well as getting new customers. Charlie believes that a good way to establish relationship with the customer is through personal meetings, where a representative from the company meets the customer in person. However he describes that this might be quite expansive and therefore it is important that each meeting has the potential to sell a lot of instruments.
He also has an idea that for smaller buyers it could be an idea to try to get them together and meet multiple customers at the same time. Furthermore he has an idea that it might be better from an economical perspective to travel around if the representative has a portfolio of products. He also describes that the website, events and inviting potential customers to trips, dinner or lunches could work. However the channel he believes is best in the beginning is to lend instruments to important customers that get a chance to test them. In order to sustain the relationship Charlie describes that it is usual to visit the customer once or twice every half year or meet the customers at fairs. Christoffer view is that it is necessary to meet customers and try to build a personal relationship with them in order to succeed in a sales process. He describes that he believes mostly in trying to convince some decisions makers about the benefit of the product in order to sell that products. Christoffer also describes that a good way to create a customer relationship is to first have a personal meeting with the customer and then that customer could get to try the product. This is important in order to convince the customer. Christoffer believe the key to both establishing and sustaining relationship with the customer is through personal meetings.

Carls view is that the prices of the product should be based on the customer value but he also explains that it is necessary to look at the competitors pricing. He explains that he believes the customer value is larger than the prices that the company had on the product before the bankruptcy. His view is that it is not so much about the price for the customer but rather about the functionality and the value it brings to the customer. Carl explains that the idea is to sell the product but he also explains that one idea could be that the customer could first try the product for some time and then buy it. Charlie explains that the end customer, the patient, could be willing to pay maybe 300 SEK for the whole examination of measuring eye pressure. Charlie continues and explains that it is the healthcare center or clinic that pays the company for the instrument. He believes it could be attractive for these customers to not have to pay the whole cost at once, instead they could be interested in leasing or paying for each measurement. Furthermore Charlie believes it is easier for a customer to test a new product if they do not have to invest as much money in it. Christoffer explains that the customer buys a product but what it is really worth is hard to determine. He gives an example that by making it possible to measure the pressure at a healthcare center instead of a specialist clinic there is a huge benefit for the society but how big this value is it is hard to determine. Christoffer also explains that there is much discussion regarding the value of moving healthcare closer to the patient but it is few that really have calculate the economic benefit of this. Furthermore Christoffer believes that the publicly owned healthcare centers want to buy the product but private clinics might be more interested in leasing them.

Carl does not specify what resources the company needs to create customer value but he believes that it needs more resources than they currently have. However after a while he specifies that there is need for both staff and capital. Charlie describes that the company needs some staff that works with support and service as well as someone that works with sales. He also explains that he believes it could be more expensive and take more resources to lease the instruments to the customer than selling them, since he feels it is needed to have more contact with the customer if they are leasing the instrument. Furthermore Charlie believes the company needs a good website, where there is information about the instrument, how to get in contact with the company and how to get support. Christoffer explains that resources needed depend on what way the company chose to go if it should set up their own sales organization or use distributors.
However he explains that support, a quality system and some staff is needed regardless of what direction the company takes.

In order to create value for the customer Carl explains that the company has done a customer test and involved two consultants that could become important for the company in the future. Carl also explains that it is necessary for the company to monitor what is happening in the environment and listen to any ideas on what could be developed. Furthermore Carl also explains that it is important to look for areas for development as well as evaluate what is most important and develop the things that are most crucial. Charlie believes the company has to do customer visits as well as attend conferences and fairs in order to create value for the customer. He believes that the personal relationship is important. Christoffer explains that the company has to try to get in contact with the potential customers and also that there is some congresses and fairs that could be good to go to.

Carl explains that important partner to the company is the suppliers. He also thinks that a company for quality licensing could be an important partner. Furthermore he believes that the company needs partners in the healthcare system, he explains that this could be key individuals that could “champion” the product. He also explains that some partner could be needed to develop a potential new sales strategy through the website. Charlie explains that it is important to have partners to develop the product and new products. Furthermore Charlie believes that it is important for a small company to work together with bigger companies in order to succeed globally. But who these partners could be Charlie does not know. Christoffer explains that distributors could be a key partner depending on what direction the company takes. Furthermore Christoffer explains that educating the users is important and that he believes super-users is a good partner for this. He explains that by spending some time training a super-user in an organization this person can then spread the information and train other in the organization.

Carl identifies that the direct customer is the healthcare system but that the patient is also an important customer the benefit from the usage of the product in the healthcare system. By getting the product to healthcare centers Carl also sees that the company creates a value for the region since it becomes easier for people to live in the region when they do not have to travel to get examined. Carl also explains that opticians could be a customer and that agents that distributed the product in other countries could be customers. Charlie identifies that health centers and emergency rooms as well as eye specialist clinics are potential customers. He also sees that opticians and veterinarians could be potential customers. Christoffer describes that the goal is to create value for the patient but that this is done through the doctors and nurses. He also explains that the direct customer to the company could be hospitals, eye clinics, primary care both private and county operated and opticians.
7 Analysis

In this chapter will we present our analysis; we will discuss each group separated from each other and then move on to a discussion regarding differences and similarities between the groups.

7.1 Patient

7.1.1 Patients’ ideas on customer dimension

The customer dimension of the business model should define who the customer is and what customer segments the company should serve (Hedman & Kalling, 2003; Osterwalder & Pigneur, 2010). The patients has a number of different ideas, most are related to public or private healthcare or opticians. Peter has ideas both regarding customers that are private and public healthcare but also, an idea that patients themselves could measure eye pressure at home. Tsvetkova and Gustafsson (2012, p. 249) and Osterwalder and Pigneur (2010, p. 21) all discuss that a company can have different customers and that these need to be served in different ways. Peter’s idea of selling directly to the patient and also to private and public healthcare is an example to this. In total the patients had between one to five ideas regarding customers, interesting to note is that one patient had five ideas, two had three and one had one.

7.1.2 Patients’ ideas on value proposition

Osterwalder and Pigneur (2005, p. 10) and Frankenberger et al. (2013, p. 251-252) describe the value proposition as the overall bundle of the organizations product and services. All of the patients have a number of ideas (three to seven) there are both more general ideas and some more specific. An example of the more general ideas is that they would like more information. Two examples of more specific idea are that Patrick would like the company to access his journal and propose treatments. A second example is that he has an idea that eye pressure should be able to measure to be measured by x-raying or by taking a photo of the eye. He does not explain how this should be done but it is a quite specific idea. Some of the ideas the patients have could be translated in to ideas regarding the value proposition, for instance the patient explain that not that experienced staff is a problem sometimes, this can be translated to an idea that more training could be valuable to the customers. Tsvetkova and Gustafsson (2012, p. 249) and Frankenberger et al. (2013, p. 251-252) describes that the offering is the core benefit of what the customer receives when buying the product or service. The ideas the patients have are more of the nature of add on or extensions of the value that is already created. The patients have between three and seven ideas.

7.1.3 Patients’ ideas on channels

Two of the patients had no ideas at all regarding what channels the companies could use to contact and deliver value to the customer. However Per and Patrick have some ideas, these are events, magazines, email and Internet. Patrick also has an idea that the companies could access his journal and give recommendations on treatments. These ideas are mostly not that specific that it is possible to analysis if the customer recommend company owned or partnership owned channels. Osterwalder and Pigneur (2010, p. 26-27) describes that company owned channels are for example the company online store and partnership owned channels are for example partner stores. However the idea of communication with the customer through the patient journal is a clear example of a channel that is not owned by the company. Osterwalder and Pigneur (2010, p. 26-27) describes five channel phases and the first is attention, which regards creating attention for the company and the product or service. The ideas the patients
have as we see it are mostly related to the “attention” channel phase. However the idea of the company entering the journal could be related to the fifth phase, post-purchase service. Osterwalder and Pigneur (2010, p. 26-27) describes this phase as services and support after the purchase. Interesting is that accessing the journal and recommending treatments is probably after the diagnoses (which the instrument is needed for), it is not the patient that buys the product it is the healthcare provider. The idea of using the journal as a channel would be providing service to the customers – customer to some extent. To summaries; two of the patients had zero ideas and two of the patients had three ideas, regarding what channels the company could use.

7.1.4 Patients ideas on customer relationship
Three of the patients clearly state that they do not feel that they have any relationship with the organization offering instruments for measuring eye pressure, one patient clearly state that he has no interest in a relationship with the company. Osterwalder and Pigneur (2010, p. 28) state that the dimension of customer relationship should answer what type of relationship the customer want with the company and how the company makes this relationship possible. With regard to this it is interesting that the patients first of all feel that they do not have any relationship with the companies and second that at least one of them do not want any relationship. Despite this, two of the patients have some ideas on how the company could work on a relationship with the customers. Examples of these ideas are; being in patient organization magazines, being at events the patient interest groups arranges and being on Facebook. Osterwalder and Pigneur (2010, p. 28) includes getting new customers, keeping customers and increasing sales in the dimension of the customer relationship. The ideas are mostly in what contexts the company can be to initiate a relationship with the patient. Both Patrick and Per also has ideas on how the company could sustain the relationship with the customer, either by emails, patient organization magazine or sending information to the patient. An interesting dimension in this context is that even thou the patients are the ones benefitting from the company’s products, they do not make the purchasing decision and they are dependent on the healthcare to benefit from the product the companies offer. Two patients had zero ideas, one had three ideas and one had five ideas.

7.1.5 Patients’ ideas on revenue model
Three of the patients acknowledge that the value of being able to measure eye pressure is high, but none of the patients have any idea on what this is worth in money or how the customer would like to pay for it. It is likely to believe that this is because the patients do not directly pay for the value created by the company but rather that they pay through a third party, for instance the specialist clinic at the hospital.

7.1.6 Patients’ ideas on key resources
Key resources can either be one or a combination of intellectual, physical, human or economical resources (Osterwalder and Pigneur, 2010, p. 34, Frankenberger et al. 2013, p. 251-252). Three of the patients have ideas regarding key resources, two of these ideas concerns intellectual resources and one human. The ideas are that the company need to have knowledge about how the healthcare centres and eye specialists work (intellectual), how to create a good instrument (intellectual) and have doctors working for them (human). One patient had zero ideas and the other three all had one idea each.

7.1.7 Patients’ ideas on key activities
Key activities are what the company has to do in order to succeed with the business model (Osterwalder & Pigneur, 2010, p. 36). The patients had three different ideas
regarding this. One patient describes that the companies’ could develop new products, one that it could host event and participate in event to spread information and two that the company could train the users in order to make sure that the instrument was used correctly. All of these activities could be key activities for the company based on the definition of earlier literature. Two patients had two ideas and two patients had one idea regarding what key activities the company should perform.

7.1.8 Patients’ ideas on key partners

Peter describes that the companies should know how the healthcare centers and eye specialists work, Per describes that the companies should collaborate with the healthcare centers and eye clinics. Patrick has an idea that the companies could establish partnerships with doctors. Mason and Spring (2011, p. 1033-1036) describes that partner relationships can help and support innovation. The ideas regarding partners that the patients had could be used for collaboration regarding innovation. Osterwalder and Pigneur (2010, p. 39) describes partnership as alliances with non-competitors, strategic alliances with competitors, joint ventures and relationships between buyer and seller. The ideas that the patients have regarding partnerships are focused on alliances with non-competitors and/or relationship between buyer and seller. One patient had two ideas, two patients had one idea and one patient had no idea.

<table>
<thead>
<tr>
<th>Patients</th>
<th>Customers</th>
<th>Value proposition</th>
<th>Channels</th>
<th>Customer relationships</th>
<th>Revenue model</th>
<th>Key Resources</th>
<th>Key Activities</th>
<th>Key Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peter</td>
<td>5 ideas (public eye clinic, private eye clinic, optician, healthcare centers, at home use)</td>
<td>6 ideas (regular checkups, mobility, information, training, easy to use, unders tafted)</td>
<td>0 ideas (no relationship with the organization)</td>
<td>0 ideas (recognizes that there is a value)</td>
<td>1 idea (knowledge about the customer)</td>
<td>2 ideas (training customers, learning how the customer work)</td>
<td>2 ideas (healthcare centers, eye specialists)</td>
<td></td>
</tr>
<tr>
<td>Per</td>
<td>2 ideas (eye clinic, healthcare clinic)</td>
<td>5 ideas (information, examination closer to the patient, regular checkups, training, measure out of biomicroscope, training)</td>
<td>3 ideas (magazine, emails, events)</td>
<td>3 ideas (participating in events, magazines, email)</td>
<td>0 ideas (recognizes that there is a value)</td>
<td>1 idea (create good instrument)</td>
<td>1 idea (training customer)</td>
<td>2 ideas (patients, eye clinics)</td>
</tr>
<tr>
<td>Patrick</td>
<td>1 idea (eye clinic)</td>
<td>7 ideas (information, access journal, measure more often, training, not touching the eye (x-ray or photo), more time for patient, more individual treatment)</td>
<td>3 ideas (journal, magazines, internet)</td>
<td>6 ideas (events, magazines, internet, Facebook, sending information)</td>
<td>0 ideas</td>
<td>0 ideas</td>
<td>2 ideas (host event to spread information, participate in events by patient groups)</td>
<td>1 ideas (doctors)</td>
</tr>
<tr>
<td>Pelle</td>
<td>3 ideas (healthcare clinic, eye clinic, optician)</td>
<td>3 ideas (training, not touching the eye, information)</td>
<td>0 ideas (no relationship with the organization)</td>
<td>0 ideas (recognizes that there is a value)</td>
<td>1 idea (knowledge on how to develop new products)</td>
<td>1 (develop new products)</td>
<td>0 ideas</td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Summary of patients’ Ideas. Own.

7.2 Nurses

7.2.1 Nurses’ ideas on customer

Three out of four nurses mention specialist eye clinics as potential customers, two mentioned optician, one elderly care and one occupational healthcare. One of the nurses had no ideas regarding potential customers. Hedman and Kalling, (2003, p. 52-53) as well as Osterwalder and Pigneur (2010, p. 21) describe that the customer dimension includes who the customer is and what customer segments the organization should
serve. The ideas from the nurses fall in to this definition and the ideas they have are quite similar, the nurses had between zero and three ideas per individual.

7.2.2 Nurses’ ideas on value proposition
Some of the ideas from the nurses are more general, for instance all of the nurses explain that it is important to know the procedure well in order to have a good examination and three of the four would like more training. One gives some more detailed ideas on how knowledge could be transmitted both with training and a manual. She also explains that the training could be a film and that the film could be available either on CD-ROM, YouTube or the company website. Another example of the more general type of ideas is that two nurses would like easier ways to find information regarding the instrument, eye pressure and the examination. Nicole has an idea that the instrument could be more automated and do the calculation automatically as well as confirmed that the eye is not damaged. Two nurses also discuss the time dimension and that it is good if it is time effective. Another idea from Nina was that it would be good if there was no need for anesthetics. Mason and Spring (2011, p. 1033-1035) explains that the value proposition explains what opportunities the company takes advantage of and Halme et al. (2007, p. 128) describes that the value proposition explains what value the company brings to the customer. With regard to this definition there is both more general ideas that could be ideas on how to innovate the value proposition such as develop the value proposition regarding knowledge (e.g. training) or exploit the opportunity of need for more information. There are also more specific ideas regarding the functions of the physical product e.g. a more automated instrument could offer new or more value to the customer. To summarize the nurses’ ideas regarding the value proposition are that it is focused on value from their perspective and some ideas have to be translated (e.g. knowledge to training) in order for an organization to have it as part of the value proposition. The nurses had between three to five ideas, all had ideas that were more of the general type and two had also ideas that were more specific or developed.

7.2.3 Nurses’ ideas on channels
Osterwalder and Pigneur (2010, p. 27) describes channels as means for the organization to get in contact with the customer with the aim to deliver value. Channels contain different channel-types; direct and indirect, and company owned or part of a partnership as well as different channel-phases; attention, evaluation, purchase, delivery and post-purchase service (Osterwalder and Pigneur, 2010, p. 27). The nurses have ideas mainly regarding two types of channels. One of the nurses has an idea regarding indirect channels of the attention or evaluation type, this is using specialist clinics at the hospital since this is a source of information regarding the examination and new products according to Nina. The second is a direct channel where three nurses have ideas on post-purchase services. The nurses had one idea each regarding channels.

7.2.4 Nurses’ ideas on customer relationship
Osterwalder and Pigneur (2010) describes that the customer relationship dimension should explain the relationship with the customer and that it consist of different phases. One of the nurses had an idea on how to establish or initiate a relationship with the customer, this was to offer the customer to test the product. The other nurses had ideas on how the organization could maintain their relationship with the customers. These ideas was focused on that the company contacted the customer regularly and offered continuous training. With regard to Osterwalder and Pigneur’s definition and discussion, the ideas from the nurses are focused on that the organization is responsible
for initiating and sustaining the relationship. Furthermore their ideas explained little on why the nurses wanted the company to contact them. The nurses had between one and two ideas regarding the customer relationship.

7.2.5 Nurses’ ideas on revenue model

Osterwalder and Pigneur (2010, p. 31) divides revenue streams into transaction revenues and fixed income and that they can have fixed or flexible pricing. The nurses have no ideas regarding the revenue model. One mention that it is of high monetary value if patients do not have to travel, and another mention cost saving for the count, a third mention that improvement in examinations do not get recognized by anyone else except the patient and the user. If there is little recognition of any improvements in the examination, this might implicate that improvements not necessarily could be used to explain a higher price for the product. There could also be room for a revenue model that in some way exploited this fact, maybe by pricing based on performance, to show that a performance increase can save money. The ideas the nurses have can at its best be inspiration or maybe translated (e.g. no measure of improvements equals that development is not recognized as a reason for increasing the price) to something that can be ideas for innovating the revenue model. However we do not recognize that this is ideas regarding the revenue model since they are vague and not direct ideas regarding the revenue model. One reason why the nurses have few or no ideas regarding the revenue model could be that they explain that they have little power over the purchasing decision. The nurses had zero ideas per individual.

7.2.6 Nurses’ ideas on key resources

The nurses have ideas in three of the four types of key resources that Osterwalder and Pigneur (2010) and Frankenberger et al. (2013) recognizes. Two of the nurses explain that the organization has to have someone that is available for support and one that they could offer continuous training. These ideas concern both human resources (e.g. staff) and intellectual resources (e.g. being able to answer support issues). Nicole has an idea that the company should offer demo units, this implicates that the company need physical resources (e.g. units to offer for trial). Nathalie has an idea that the organization needs knowledge about diagnosis, customer roles and procedures, translated to resources this is intellectual resources. The nurses have between one and two ideas per individual. Key resources according to Osterwalder and Pigneur (2010) and Frankenberger et al. (2013) are resources that are needed for the business model to succeed. It is crucial that the organization receiving the ideas evaluate if the ideas are crucial to the business model success.

7.2.7 Nurses’ ideas on key activities

The ideas that the nurses had regarding key activities are closely linked to the key resources. Offering support, calling the customer and demo products involve resources but are dependent on activities in order to happen. The nurses had between one and two ideas regarding key activities and all of these where of the nature that they were linked to ideas regarding something else. Osterwalder and Pigneur (2010, p. 36) explains activities as what the organization need to do in order to succeed with the business model. This implicates that the activities could be both externally focused for instance support or internally focused e.g. developing new products. It is interesting that the nurses only had ideas regarding activities with an external focus. Two nurses had one idea each and two nurses had two ideas regarding the key activities.
7.2.8 Nurses’ ideas on key partners

It was only one of the nurses that had an idea on what partners the organization could need in order to deliver and create value; the idea was concerned providers of anesthetics. Osterwalder and Pigneur (2010, p. 39) describes that key partnership can be strategic alliances with non-competitors (it can also be a number of other things). A partnership with a provider of anesthetics would be an example of a strategic alliance with a non-competitor. Interesting to note is that none of the nurses identified healthcare centers (where they work) as a key partner to the organization. Osterwalder and Pigneur (2010, p. 39) describes that relationship between buyer and seller can be a key partnership in order to ensure a continuous flow of supplies.

<table>
<thead>
<tr>
<th>Nurses</th>
<th>Customers</th>
<th>Value proposition</th>
<th>Channels</th>
<th>Customer relationships</th>
<th>Revenue model</th>
<th>Key Resources</th>
<th>Key Activities</th>
<th>Key Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nina</td>
<td>3 ideas (ophthalmic, occupational health, specialist clinics)</td>
<td>5 ideas (mobile unit, no need for anesthetics, information, training, manual)</td>
<td>1 idea (specialist clinic at hospital)</td>
<td>2 ideas (calling, continuous training)</td>
<td>0 ideas</td>
<td>1 idea (staff for training customers)</td>
<td>2 ideas (calling customers and training customers)</td>
<td>1 idea (providers of anesthetics)</td>
</tr>
<tr>
<td>Nicole</td>
<td>1 idea (specialist clinic)</td>
<td>4 ideas (training, information, time effective, good if the patient knew there “usual” eye pressure)</td>
<td>1 idea (contact company by phone)</td>
<td>1 idea (letting the customer test the instrument)</td>
<td>0 ideas</td>
<td>1 idea (products for testing)</td>
<td>2 ideas (manage product testing (for customers), check that customers use instrument correctly)</td>
<td>0 ideas</td>
</tr>
<tr>
<td>Nathalie</td>
<td>3 ideas (ophthalmic, elderly care, specialist clinics)</td>
<td>4 ideas (mobile unit, information, easy to use, correct measurements)</td>
<td>1 idea (visits to check that the customer work correctly)</td>
<td>1 idea (meet the customer to check in)</td>
<td>0 ideas</td>
<td>2 ideas (support staff and knowledge)</td>
<td>1 idea (Contact customers)</td>
<td>0 ideas</td>
</tr>
<tr>
<td>Nova</td>
<td>0 ideas</td>
<td>3 ideas (manual, more automatic instrument, training)</td>
<td>1 idea (contact company by phone)</td>
<td>1 idea (calling the customer)</td>
<td>0 ideas</td>
<td>1 idea (support staff)</td>
<td>1 idea (contact customers)</td>
<td>0 ideas</td>
</tr>
</tbody>
</table>

Table 5: Summary of nurses’ ideas. Own

7.3 Doctors

7.3.1 Doctors’ ideas on customer

Tsvetkova and Gustafsson (2012, p. 249) and Osterwalder and Pigneur (2010, p. 21) explains that a company can have different customers that needs to be served in different ways. One idea that Donald had was that it would be good if the patients themselves could measure the eye pressure. This is an example of new customer group for the company. The other ideas the doctors had where more related to customers that could be interested in measuring the pressure on a patient, these ideas were; elderly care and healthcare managed by the municipalities. If the company would pursue the opportunity within self-service healthcare the customer would have to be served in a completely different way than its current customers. Customer types, products or services, geographical dispersion, customer interaction points, broad or niched market are factors in the customer dimension (Morris et al. 2005, p. 729-731). Having an instrument used in a self-service setting would create new interaction points between the customer and the company and even if the current customer segment targeted by the company is broad it becomes even broader with this idea. It also changes the setting of the current customer type from only containing business-to-business to include
business-to-consumers. The other two ideas about elderly care and healthcare managed by municipalities are both business-to-business type of customers. One of the doctors had no ideas regarding customers, one doctor had three ideas and on doctor had one idea.

7.3.2 Doctors’ ideas on value proposition
Some of the more general ideas are that all the three doctors had were that the instrument should be simple to use, perform reliable results and be safe. One example of a more detailed idea is that both Donald and Donna have an idea that a mobile instrument would be useful. Another example is from Diana who has an idea that the instrument could have an exchangeable tip (the part that touches the eye), she believes this would lower the risk for eye infections. Osterwalder and Pigneurs (2010, p. 22-23) definition of the value proposition is a combination of different elements that satisfy the customers needs. These needs can be satisfied is through quantitative values (price, speed) or through qualitative values (design, customer experience) (Osterwalder & Pigneur 2010, p. 22-23). The ideas described by the doctors can all be categorized as qualitative values where safety, design and quality measurements are in focus. Overall the doctors all has ideas that are more specific, more general and ideas that are more product specific and more about the whole examination. An example of an idea more related to the examination is that Donna believes it would be a good idea if the patient could receive information before the examination on what will happen during the examination.

The value proposition could also be divided in to different factors such as product/service, standardized/customized, direct/indirect distribution, product itself/bundled (Morris et al. 2005, p. 729-731). Even thou it is qualitative values that the ideas focus on, the nature of the ideas is still standardized where each customer get the same value. This value should be delivered mainly by the product and possibly an added service in the form of standardized information about the procedure.

The value proposition explains how and what value the firm offers to the customer (Halme et al. 2007, p. 128). The ideas from the doctors consist of a number of on how the company could develop or innovate the value proposition. Interesting to note is that Donald explained that it is important that the company not only sell a product but that it has to sell a concept with product, education and support. To summaries one doctor has four ideas and the other two, has six and nine ideas.

7.3.3 Doctors’ ideas on channels
Channels are various means of the company to get in contact with the customer with the purpose of delivering value (Osterwalder and Pigneur, 2010, p. 26, Frankenberger et al. 2013, p. 251-252). These channels can be of different types and have different phases (Osterwalder and Pigneur, 2010, p. 27). Donald describes that if the company would peruse his earlier idea about selling products that the patient themselves could use is a channel to reach the patients and it could be done with the help of healthcare centres. Donna also explains that personal meetings are much better than mail advertising or flyers. Furthermore Donna explains that she listens a lot to her colleagues from other healthcare centres and that this could be a channel for information. Osterwalder and Pigneur (2010, p. 27) describes that attention, evaluation, purchase, delivery and post-purchase services are the channel phases. Indirect channels are channels that the company themselves does not own and direct channels are channels the company own (Osterwalder and Pigneur, 2010, p. 27). The idea that Donald had of using healthcare
centres to get patients interested in purchasing an instrument for measuring the pressure themselves, could be an idea that was used for all phases and is an indirect channel depending on the healthcare centre as a partner. Donna’s idea of personal meetings is also a channel that could be important for all phases and it is a channel that could be owned by the company. Her second idea of information through networks is focused on the first channel phase of attention and is also an indirect channel, since the company has to partner with the network or individual doctors. Donald and Diana has ideas that testing a product is important, they however do not explain how this could be delivered, testing could be an important part of the evaluation phase but since they do not explain what channel the company should use to manage the testing, this idea is more an idea of activities. Diana had no ideas regarding channels, Donna and Donald had two each.

7.3.4 Doctors’ ideas on customer relationships
Donal has several ideas both on how the company can initiate a relationship with a customer and how the company can sustain this relationship. Osterwalder and Pigneur (2010, p. 28) describe the dimension of customer relationship as an answer to what relationship the customer wants and how to make that possible. This consists of getting new customers, keeping customers and increasing sales (Osterwalder and Pigneur, 2010, p. 28-29). By attending lectures (about eye pressure), meeting customer together with representatives from the healthcare sector and offering customers to test the instrument, Donald believes the company can build a relationship with the customer. In order to sustain the relationship both Donald and Donna believes that the company could show interest for the customer and ask for feedback. Donald also believes that the company has to constantly develop the product and tell the customer about this in order to sustain the relationship. Diana has an opposing idea that having a great product that does not need to be improved is the most important relationship factor. The doctors had between four and one ideas about the customer relationship dimension.

7.3.5 Doctors’ ideas on revenue model
Donald explains that the usual is that the healthcare centre where he works buys product, but he has an idea that a subscription service could be good. That the healthcare centre would pay a monthly fee for having the instrument and that support, upgrades and service should be included. Osterwalder and Pigneur (2010, p. 31) include two different types of revenue streams, which are transaction revenues and fixed income and these different revenue types can have fixed or flexible pricing. The current method used for the healthcare centre where Donald works is transaction revenues where they pay money and receives a product, however, the subscription idea concerns fixed income and might be viable for the future. The other two doctors did not have any ideas regarding the revenue model. Donald had one idea about the revenue model and the other two doctors had zero ideas.

7.3.6 Doctors’ ideas on key resources
Donna explains that a resource the company should have is knowledge about potential errors that might occur during procedures. Intellectual, human, physical and economic are the four categorize of key resources that Osterwalder and Pigneur (2010, p. 34) and Frankenberger et al. (2013, p. 251-252) present. Donna’s idea falls in to the category of intellectual resources. Both Donna and Donald mention that offering customer to test instruments is a good way to get new customers and letting the customer evaluate the product. Donald and Donna does not come up with the idea that the company in order to offer this need products to offer for testing, but their idea implicates that there is need
for test instruments. This idea would fall in to the physical category of key resources. Besides this it was only Donna that had any idea regarding resources.

7.3.7 Doctors’ ideas on key activities
Both Donald and Donna explain that testing a new product is good and that this is something the company should offer, which is a type of key activity. Donald also mentions the production of user manuals as a key activity. Both Donna and Donald has described that the company could attend events for example. This would be a type of activity as well, but as they do not describe it as important it is hard to determine if it is an idea about a key activity. Examples of activities that the organization can perform are production, information management, R&D, supply chain management, networking etc. (Morris et al. 2005, p. 729-731). The activities described by Donna and Donald are connected to production (of manuals), networking (attend events) and sales (testing and attend events). Donald is the only one that has an outspoken idea about key activities and then both Donald and Donna have an idea of offering product testing.

7.3.8 Doctors’ ideas on key partners
Key partners can be anyone outside of the organization, and relationships within the partner network concerns the relationships that help and support innovations of product, processes, infrastructure, technologies and services (Mason & Spring, 2011, p. 1033-1035). Donald explains that if the company would like to develop a product that the patient themselves could manage, then patient organization becomes a potential partner. Diana has no ideas and Donna believes that healthcare facilities can be an important partner to get feedback, which supports innovation and infrastructure for the company. Osterwalder and Pigneur, (2010, p. 39) identifies different type of key partnerships and one of these are alliances with non-competitors. The ideas from Donald and Donna are both examples of key partnerships that could support innovation and be alliances with non-competitors. Donald and Donna had one idea each, and Diana had no ideas regarding key partners.
7.4 Manager

7.4.1 Manager’s ideas on customer
The manager we interviewed had three ideas regarding what customers that could be interested in being able to measure eye pressure. Maria mentioned that anyone who wants to measure eye pressure is a potential customer. This is an idea about who the customer could be but it is very unspecific, this makes it hard to translate the idea into something that could be an idea for innovating the business model. Maria elaborates on the customers in the end of the interview and describes that both the county and private companies could be potential customers. Who the customer is, what customer segment the organization should serve is all part of the customer dimension (Hedman & Kalling, 2003, p. 52-53, Osterwalder et al., 2005, p. 10, Osterwalder & Pigneur, 2010, p. 21, Shafer et al. 2005, p. 200-202, Frankenberger et al. 2013, p. 251-252), as well as what customer types they should serve and the geographical dispersion (Mason & Spring, 2011, p. 1033-1036). For Maria it is obvious that the customer is a business-to-business customer that operates within the private and/or the public sector. Furthermore, her idea includes the county, which in part is defined as a geographical construct. Morris et al. (2005, p. 730) describes that the not being able to define the market is a key factor related to the failures of ventures. With regard to this Maria’s ideas are not very well defined but rather wide general ideas.

7.4.2 Manager’s ideas on value proposition
Maria values the possibility to being able to measure eye pressure and describes in the interview that the product has to be safe (both for the user and patient), user friendly and cost-effective. The value proposition of is the overall bundle of the organizations product and service (Osterwalder et al., 2005, p. 10; Frankenberger et al. 2013, p. 251-252) and it is the core benefit that that customer receives when buying a product/service from the organization (Tsvetkova and Gustafsson, 2012, p. 249, Frankenberger et al. 2013, p. 251-252, Demil & Lecocq, 2010, p. 231-232). What Maria is talking about when describing the value is in part related to the actual product and the process in which the product is used. She also thinks that it is important to be cost effective, which in our opinion is connected to her situation as a manager. So when talking about creating value she thinks that this value should be created for the organization (cost-effective), the patient (measure eye pressure, patient safety) and the user (user safety, user friendly). Her ideas are in that sense quite compressive. Maria also describes that it should be impossible to make mistakes and it has to be simple to use. The need or benefit that the value proposition satisfies can be categorized in to qualitative values and/or quantitative values (Osterwalder & Pigneur 2010, p. 22-23). Only cost-effectiveness can be categorized as a quantitative value among those mentioned by Maria and all the others are qualitative values such as design and customer/user experience.

7.4.3 Manager’s ideas on channels
The ideas Maria has are centered around how to reach the right person/organization regarding purchasing decisions and where these persons/organizations look for information. These are relevant ideas regarding what channels to use in order to come in contact with potential customer. Both Osterwalder and Pigneur (2010, p. 26), as well as Frankenberger et al. (2013, p. 251-252) describes that channels are used to reach customers in order to deliver value. Maria describes two channels for reaching the
people making the purchasing decision. The first is the purchasing organization in the county and the second is directly towards the healthcare center (if the price is below 20 000 SEK). According to Osterwalder and Pigneur (2010, p. 27) there are different channel-types (direct/indirect sales and company owned or part of a partnership) and different channel-phases (attention, evaluation, purchase, delivery and post-purchase service). The channels that Maria talks about can be described as both direct (directly towards the healthcare centre) and indirect (purchasing organization in the county). Our definition of Shafer et al. (2005, p. 202) factor customer information and information flows do also fit well in with the ideas brought forward by Maria, since she talks about how the customer can be reached in a direct manner and how word-of-mouth can be used to influence the customer. Furthermore Maria also describes that the specialist clinics at the hospitals are sources for information when a healthcare center are planning a purchase. We believe this to be a channel of information in the attention and possibly the evaluation stage of channel-phases. Marias ideas are centered around how to reach the customer to initiate the first step towards delivering value, however she does not have any ideas on what channels to use later on for delivering value.

7.4.4 Manager´s ideas on customer relationship
The manager describes that contacting her by phone or email does not work and other than that she does not have any ideas. However Maria had some ideas regarding what channels to use in order to reach the right person/organization for the purchasing decision (see paragraph above). Osterwalder and Pigneur (2010, p.28) describes that customer relationship is the dimension which describes what relationship the organization can establish with the customer and this includes getting new customer, keeping customer and increasing sales. Marias ideas regarding channels are also ideas on how to initiate a customer relationship in order to get new customers. Her idea on how a company should not contact her is also an idea that provides insight on how to build a customer relationship, which could be relevant both for getting new customers, keeping customers and increasing sales.

7.4.5 Manager´s ideas on revenue model
The revenue model explains how the organization makes money (Osterwalder et al., 2005, p. 10; and Halme et al. 2007, p. 128). Maria explains that there is a value of being able to measure the eye pressure but how much this value is worth is something she has no ideas about. Neither does she have any ideas on how the customer wants to pay for this value.

7.4.6 Manager´s ideas on key resources
Osterwalder and Pigneur (2010, p. 34) and Frankenberger et al. (2013, p. 251-252) describes that key resources are resources needed for the business model to succeed, this can be physical, intellectual, human or economical resources. Maria describes that the company need to have technicians for testing and making sure that the product is safe and both patient and user friendly. Furthermore they need to have knowledge on how to develop the product. The idea to have technicians is mostly an idea regarding a type of human key resource, but also to some extent intellectual. Marias idea regarding knowledge on how to develop the product is an idea regarding an intellectual key resource. The idea regarding knowledge to develop could also implicate that the company need human key recourse as well as the idea regarding technicians could implicate that the company need an area where the technicians could work, but both these implications are more farfetched and rather necessary outcomes than ideas.
7.4.7 Manager’s ideas on key activities

Key activities are activities the company has to do in order to create value (Frankenberger et al. 2013, p.251-252) and succeed with the business model (Osterwalder & Pigneur, 2010, p. 36). Maria explains that she believes the company need to be able to develop, market and sell the instrument. All these ideas target activities that are important to most organizations but they are also very general. It is hard to imagine a company that would be surprised to learn that they have to market and sell their product. That Maria stress the importance of developing the product could maybe be more interesting for an organization to learn than that they have to market and sell their product. The key activities can be used by the organization in order to do things different than competitors (Shafer et al 2005, p. 202). Examples of factors that the firm can do better than its competitors are production, information management, R&D, supply chain management, networking etc. (Morris et al. 2005, p. 729-731). Even though advertise and sell products are rather general and abstract ideas it still gives the organization a hint of what is important and where to put its focus. However, it is hard to find a way to differentiate its key activities with just advertisement and sales as directives. According to Maria the focus should be on information management (advertisement and sales) and R&D (development).

7.4.8 Manager’s ideas on key partners

Key partners is an actor outside the organization that can help and support innovations of product, process, infrastructure, technologies or services (Mason & Spring, 2011, p. 1033-1036). Maria explains that she believes an organization need a partner for financial support and that the organization need to work closely with the authorities to get patents as well as working with technicians and researchers. The idea of working with the authorities in order to get patents is quite specific and could be a relationship to help support innovation or technologies. The idea of a partner for financial support could also support innovation and technologies, but also the organizations infrastructure. Osterwalder and Pigneur, (2010, p. 39) describes that key partners could help the organization getting hold of key resources and key partnership includes strategic alliances with non-competitors, strategic alliances with competitors, joint ventures and relationships between buyer and seller in order to ensure a continues flow of supplies. The idea about financial support can come from anywhere, from competitors to other alliances. Working with technicians, researchers and the authorities are most likely ideas about strategic alliances, however, it could also be strategic alliances with competitors.

<table>
<thead>
<tr>
<th>Managers</th>
<th>Customers</th>
<th>Value proposition</th>
<th>Channels</th>
<th>Customer relationships</th>
<th>Revenue model</th>
<th>Key Resources</th>
<th>Key Activities</th>
<th>Key Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maria</td>
<td>1 idea (counties, private companies)</td>
<td>5 ideas (patient safe, user safe, user friendly, cost-effective, simple)</td>
<td>2 ideas (country purchasing organization, healthcare centers)</td>
<td>1 idea (do not contact manager through email or phone)</td>
<td>2 ideas (technicians, knowledge on how to develop the product)</td>
<td>0 ideas</td>
<td>3 ideas (market, sell, develop)</td>
<td>5 ideas (financial partner, authorities, technicians researchers)</td>
</tr>
</tbody>
</table>

Table 7: Summary of manager’s ideas. Own

7.5 Company

7.5.1 Company ideas on customers

The company representatives all has ideas on multiple potential customers, examples of these are; eye clinics, veterinarians and opticians. Carl also describes that these
customer could be both in the “home” market and the “foreign market”. Furthermore he identifies that the direct customer is the healthcare system but that the patient (who benefit from the use of the instrument) is also the customer. Both Osterwalder and Pigneur (2010) and Tsvetkova and Gustafsson (2012) recognizes that the company could have different customers that need to be served in different ways. If the potential customer that the company has ideas regarding need to be served in different ways is not something we have researched but it is likely that different customers has different needs and should be served according to these needs. Two of the company representatives had six ideas regarding customers and one had five ideas.

7.5.2 Company ideas on value propositions

All of the company representatives had ideas about that the instrument and the examination need to be safe, of high quality and reliable. Furthermore two of the representatives have ideas regarding the education of the users of the instrument. Other examples of ideas are that the company could offer information to the patient and that a mobile instrument could be good. The value proposition is explained as the core benefit that the customer receives when buying the product or service from the organization (Tsvetkova and Gustafsson, 2012, p. 249, Frankenberg et al. 2013, p. 251-252, Demil & Lecocq, 2010, p- 231-232). It is hard to identify if all ideas are part of this core benefit or extensions and additional values to the core value. Two company representatives had seven ideas and one had nine ideas.

7.5.3 Company ideas on channels

The company representatives ideas regarding channels are mostly focused on what channels the company could use to deliver the value, examples of this is; distributors, agents and company website. However Carl also recognizes that the existing customers could be a channel to get new customers and both Carl and Christoffer have an idea that an educational movie could be a channel. Most of the ideas that the company representatives has does not refer to any specific channel phase and there is also a mix of indirect and direct channels as well as owned and partnership channels. Osterwalder and Pigneur (2010, p. 27) identifies that there is both direct and indirect sales channels, owned and part of partnership channels and that there is five channel phases. Charlie has two ideas regarding channels, Christoffer four and Carl five.

7.5.4 Company ideas on customer relationships

All the company representatives have ideas on how the company could build and maintain a relationship with the customer, examples of their ideas regarding building a relationship is; personal meeting and letting them test the product. Examples of the ideas on how the company could maintain the relationship is; asking the customers for feedback, inviting the customers to events and hosting training. Two of the company representatives had two and three ideas and one of the company representatives had eight ideas.

7.5.5 Company ideas on revenue model

There are mainly three different ideas regarding the revenue model. One is that the company sell the product and the customer pays by invoice or credit card. The second is that the customer leases the instrument and the third idea is that the customer pays a fixed amount for each usage of the instrument. Osterwalder and Pigneur (2010, p. 31) describes that there is different types of revenue models, fixed income or transaction revenue and fixed or flexible pricing. Based on this the company representatives have ideas that are both fixed income and transaction revenue. However, whetere their ideas
concerns a fixed or flexible pricing is hard to determine. None of the representative discussed that there should be different prices towards different customers or similar. Carl had two ideas regarding revenue model, Charlie had four ideas and Christoffer had two ideas.

7.5.6 Company ideas on key resources
Osterwalder and Pigneur (2010, p. 34) identifies four types of resources, physical, intellectual, human, and economical. The company representatives have ideas regarding all of these types except intellectual. Examples of these ideas are; staff (human), capital (economical), good website (physical). One company representatives had two, ideas regarding resources and two representatives had three ideas.

7.5.7 Company ideas on key activities
Key activates are activities that are necessary to do in order to succeed with the business model (Osterwalder and Pigneur, 2010, p. 36). Carl has three ideas regarding key activities and this is monitor the environment, attaining and evaluating feedback. Charlie and Christoffer both has an idea that the company should attend fairs, and Charlie also has an idea that the company should visits customers and work with support and service. The company representatives had between three and four ideas per person.

7.5.8 Company ideas on key partners
Osterwalder and Pigneur, (2010, p. 39) explains that key partnership includes strategic alliances with non-competitors, strategic alliances with competitors, joint ventures and relationships between buyer and seller in order to ensure a continues flow of supplies. Carl has the idea that suppliers, company for quality licensing, someone to help develop the website and partners in the healthcare system could be potential partners. Charlie partners to develop the product or new products and bigger companies to succeed internationally. Christoffer ideas on key partners are distributors and super-users. These ideas are both relationship between buyer and seller (suppliers, distributors, super-users) and alliances with non-competitors (company for quality licensing, web-development). The idea of partners in the healthcare system is hard to categorize, since it could be both a relationship between buyer and seller and an alliances with non-competitors. Charlie’s ideas are all hard to categorize since they could also be a number of different types of key partnerships. Two of the company representatives had two ideas and one had four ideas regarding key partners.
7.6 Summary discussion

7.6.1 Customers

Customers can be categorized in factors such as customer types (B2B, B2C), geographical dispersion, broad or niche market (Morris et al. 2005, p. 729-731). The ideas coming from all the respondents mainly revolve around business-to-business. However, the idea from one doctor and one patient about patients being able to measure their eye pressure on their own is a rather unique idea in the sense that it revolves around a business-to-consumer focus rather than a business-to-business focus. That along with the fact that eye clinics, occupational healthcare and opticians can be found anywhere and that the ideas cover the consumer, private and public sectors makes both the geographical dispersion and the market extremely broad. As mentioned by Tsvetkova and Gustafsson (2012, p. 249) and Osterwalder and Pigneur (2010, p. 21), a company can have different customers that need to be services in different ways. Since the ideas both revolves around business-to-business and business-to-consumer it is not hard to imagine that these customer types and groups might have different needs and might have to be served in different ways. We will discuss the different value proposition preferences in the section below.

When it comes to differences between ideas from the respondent groups it is hard to see any clear trends, since the differences are rather small and most ideas where similar between all respondent groups. It seems to be a greater difference between individuals than between the different groups, since for example Peter has five ideas about customers while Patrick only has one idea. Another example of that is Nina who has three ideas and Nova who does not have any ideas.
The company had almost the same kind of ideas as the manager and the main part of the ideas from the patients. The biggest differences were between the company and doctors/nurses who had ideas such as elderly care, occupational care and patients. However, patients as a possible customer were also mentioned by one of the patients. With this in mind it seems like the company is focused more on the business-to-business segment than the doctor and patient that mentioned patients as a customer group (B2C). The idea about elderly care is also something that the company did not mention and once again does it seem feasible to think that the needs of the customer might vary between the different customers. This is because an instrument used at an elderly care serves a more “niche market” (elderly people) than an instrument used at a healthcare centre that serves a broader market (general population).

Another thing that we find to be interesting is that one person from the company uses broader terms when describing the market, terms such as home market and foreign market. This is something that is not mentioned by anyone else of our respondents and it is linked to the geographical dispersion of the customer segment/s. Home market is geographically located in Sweden, while foreign market can be anywhere else in the world.

In order to relate our findings about the customer dimension to the research question it seems feasible to believe that the customers, especially doctors/nurses, can help the company with ideas for business model innovation. Furthermore, the ideas from the doctors and nurses were focused on specific customer groups/segments rather than new markets and new potential customer types (B2C). Overall the company had more ideas about potential customer for business model innovation and a lot of those ideas were also mentioned by the other respondents. This indicates that customers can act as a reassurance factor that ensures the company that it is on the right track with its business model innovation.

7.6.2 Value proposition

The value proposition is described by Osterwalder and Pigneur (2010, p. 22-23) as a combination of different elements that satisfy the customer’s needs. These needs can be satisfied through quantitative values (price and speed) or through qualitative values (design and customer experience) (Osterwalder & Pigneur 2010, p. 22-23). Throughout all of our respondent groups the focus have been on qualitative values such as design (user friendly, safe, mobile) and customer experience (no anaesthetics, information, more time per patient). The only two quantitative values expressed by our respondents are cost-effective (manager) and time-efficient (nurse).

The organizations offering could be divided in to different factors such as product/service, standardized/customized, direct/indirect distribution, bundled or unbundled (Morris et al. 2005, p. 729-731). The difference in focus of product or services are something that we believe can be found between nurses and doctors/manager, where nurses are more concerned about services such as training and easy accessible information, while doctors and the manager focus more on the product and its features. It is also interesting to note that even thou doctors and managers had a product focus when asked about the value proposition, their ideas differ in the amount of product specific details. The manager seems to have some pre-set conditions that all products should live up to and where the doctors see the product from an practical perspective. Another difference is that can be seen in the difference between
customization and standardization, where patients want customization to a larger degree than the other respondents.

A part from the trends that we have explained above all of our respondents has similar ideas, where the biggest differences are between individuals rather than groups. Furthermore, the value proposition seems to have been the dimension in which the respondents had the most ideas.

The ideas from the company representatives were also mainly focusing on qualitative values such as reliable results, high quality, mobile unit etc. However, just like nurses, the company mentions fast as a value that is delivered, which we see as a quantitative value. The other quantitative value that the manager mentions is cost efficiency, which revolves around the product and the overall lifespan of the product. The biggest differences between ideas about value proposition is between the company and the patients, where the patients mention ideas such as: it would be good if the instrument did not have to touch the eye, the company could access the patients journal and propose treatment based on the data in the journal and the patient should get more individual attention and treatment. These differences are both product specific (not touch the eye) and service specific (individual treatment and company could propose treatment). However, it seems like the patients are looking for more customized care, while the company is focusing more on standardization.

Information about the instrument and the actual procedure is something that the company highlights, which is focused on the interaction point between the patient and user (doctor/nurse). At the same time do the patients mostly want information about the things around the actual procedure, such as research, their possible diagnosis and other patients’ experiences. It seems like the patients are not only focusing on the interaction point where they come in contact with the company’s instrument. It seems like the company only see how they can influence the interaction point between user and patient, while the ideas from the patients indicates that the company could do more to influence the value delivered to the patients. The doctors and nurses consider both perspectives on information but the focus is on the actual procedure and not the diagnosis or the instrument.

The doctors and the company had mainly the same kind of ideas about the value proposition. So if the company were to ask doctors for ideas about value proposition would it serve more as possible advertisement and reassurance than a source for new ideas about value proposition.

The value proposition is something that the company could get a lot of ideas about. Depending on the purpose of why the company would involve customers and what type of information they want, different customer-types could be involved. The company could ask the patients and to some degree nurses in order to learn new things about additional value that the company can create for its customers. If the company were to ask doctors and managers the information would give confirmation about their own ideas.

7.6.3 Channels
Channels contain different channel-types (direct/indirect sales and company owned or part of a partnership) and different channel-phases (attention, evaluation, purchase,
delivery and post-purchase service) (Osterwalder and Pigneur, 2010, p. 27). Two patients do not talk much about the actual purchase situation when talking about channels; instead they refer to channels as different ways to get in contact with the company or to get information. The information that the patients want mainly concerns information related to post-purchase services (information about the diagnosis after the eye examination) or the attention stage (knowing what might be wrong with the eye). What is also interesting is that two patients do not have any ideas for channels and they are the only ones that do not see themselves as having any kind of relationship with the company. The ideas from doctors and nurses mainly revolve around the attention stage, where they get information about the product from different sources, both direct (phone, personal visits) and indirect (word-of-mouth from eye-specialists or their personal network). Another direct channel that the nurses mention is a post purchase service regarding check-ups to ensure that the instrument is used correctly. There are a clear difference between the purpose of the channels mentioned by doctors, nurses, managers and patients. The patients are more concerned about information while the other groups are more focused on the actual product and how to use that product (the core of the value proposition). There is also a clear difference between the manager and the other respondents, since the managers’ ideas are focused on the evaluation and purchasing phase while the other respondents focus on the post-purchase phase or attention phase.

The difference between the customer groups and the company is that the company did not have ideas about indirect channels such as word-of-mouth through personal networks and other health care centres that were mainly mentioned by doctors. However, the company were aware of the possible advantage of word-of-mouth, but thought it only concerned specialists at specialist clinics. The difference in focus between the patients and every one else do also concern the company, since their main focus has been on trying to distribute its product and additional services.

If the company were to involve customers in its business model innovation, channels could be used in order to gain new insights from doctors, patients and nurses and also to gain a broader perspective of their own business.

7.6.4 Customer relationships
This dimension should answer the question: what type of relationship do our customers want with us, and are we making that kind of relationship possible? (Osterwalder & Pigneur, 2010, p. 28). The ideas from the patients seems to be focusing on direct actions taken by the company in order to establish a relationship, and these actions are not done in person but through other means of spreading information. Information seems to be the largest factor when trying to build and maintain a customer relationship with the patients. This differs from the doctors and nurses who have more ideas that concern the product and education and the manager only has an idea about what not to do. There is also a difference in preference on how to interact with the company, while the patients want to get information through non-personal channels while the doctors/nurses want both non-personal and personal contact. Within the group of doctors there are two ideas that revolve around the product, which none of the other ideas do. It seems like the patients want a relationship based on a steady stream of information from the company, while the nurses and doctors want a relationship built on a great product, personal contact and contact over the phone. However, the manager mentioned that phone is not something that will build a customer relationship with her.
The ideas coming from the company covered all the ideas from the patients, even if the intended content of the information that is distributed might vary. The nurses and the company had some differences where the nurses think that the phone is a great way to establish and maintain a relationship as well as continue training. The doctors and company did have almost the same kind of ideas but the importance of having a great product and constantly develop the product was not something that the company thought of. One thing that is positive for the company is that they did not mention any of the things that the manager mentioned as something that will not work.

Interesting to note is that the difference between the respondents within the groups where rather big, where for example two patients had no ideas about customer relationships while one patient had six ideas. Even among the company representatives where the differences rather big, where one representative had two ideas and another had eight ideas.

It seems like most of the ideas from our customer respondents were ideas that the company had already thought of. This indicates that the company could try to use the customer more as a confirmation source or possibly to involve the customer in the process in order to gain acceptance for the value proposition.

7.6.5 Revenue model
Revenue model is the dimension in which the respondents have least ideas about. Across all the customer groups it is only one doctor who has an idea about using a subscription model when buying products. There are two different types of revenue streams, which are transaction revenues and fixed income and these different revenue types can have a fixed or flexible pricing (Osterwalder and Pigneur, 2010, p. 31). The only idea that the doctor had is a fixed income revenue type.

The company on the other hand have a lot of ideas (eight ideas in total) and they include different types of revenue streams, both transaction revenues (test and buy, direct sales, invoice) and fixed income (leasing/subscription). They also have some thought about flexible pricing for a fixed income solution, where the price depends on the number of times the instrument is used.

Revenue model is not something that the customers should be involved in when or if that part of the business model should be innovated. With such a low number of ideas, the company would do better to put their time and effort on something else and try to figure out the company’s revenue model by themselves.

7.6.6 Key Resources
Key resources are the resources needed in order to get the business model to succeed, and these resources can be physical, intellectual, human, and economical (Osterwalder and Pigneur, 2010, p. 34, Frankenberger et al. 2013, p. 251-252). Intellectual resource is something that all of the different groups mentions. However, there are differences in what this intellectual resource should contain, whereas the patient thinks it is necessary to have knowledge about customer and the patients. Furthermore, the patients and the manager believe it is important to have knowledge that could help the organization develop its products. The nurses on the other hand think the firm need knowledge that can support them in their daily work. One of the doctors believes it to be important to have knowledge about the eye examination. Even though there are differences between the
thought on the intellectual resources needed, it is clear that the respondents think this to be important.

Other resources that the respondents thought of are human resources. However, it was only mentioned by the nurses (three out of four) and the manager. The nurses were the only ones who mentioned a physical resource as well.

Human resources were something that was highlighted as important by all the company respondents in the form of staff. This view is coherent with the ideas from the nurses and the manager, but differs from the other respondents. Capital resources (one time) and physical resources (three times) were also mentioned by the company, but physical resources was only mentioned once by one nurse and capital was not mentioned. Another difference is intellectual resource, which all of our respondent groups mentioned but none of the company respondents.

Key resources is something that the customers can have ideas about that the company have not thought of previously. In our case all of the customer highlight intellectual resources as important, which might have been overlooked or seen as unimportant by the company.

7.6.7 Key activities

Key activities contain internal capability that can be a source of competitive advantage. Examples of factors that the organization can do better than its competitors are production, information management, R&D, supply chain management, networking etc. (Morris et al. 2005, p. 729-731) The ideas from the patients, nurses and the manager mainly concern information management (training customers, spread information at events, advertisement) and R&D (new products, product testing). Attending events could possibly be seen as a networking activity, which is also mentioned by one of the doctors. A part from that is the only difference the idea about producing manuals that was put forward by the doctors. Osterwalder and Pigneur (2010, p. 36) explain activities as what the organization need to do in order to succeed with the business model. This implicates that the activities could be both externally focused and internally focused. The only activities that are internally focused are R&D and production, which was mentioned by managers, doctors and patients. All other ideas about activities such as networking and information management are externally focused.

The company had ideas about information management (monitor environment, attain feedback), networking (attend fairs) and production (support and service). However, training customers does not seem to be one of the activities that the company consider to be a key activity, while it is highly thought of by both patients and nurses. Preforming some kind of R&D is also something that differs between the customer groups (manager/patients) and the company. Another difference is that all of the company’s key activities are externally focused, while managers, doctors and patients have a mix between internally and externally focused key activities.

Interesting to note is that the customers can have ideas about important internal activities as well as external activities. Even if the company is aware that they might need these internal activities the importance of those activities might be neglected by the company or the customers might highlight the most important ones.
7.6.8 Key partner

Key partnership includes strategic alliances with non-competitors, strategic alliances with competitors, joint ventures and relationships between buyer and seller in order to ensure a continues flow of supplies. The patient ideas concerning key partners revolve around the “users” that diagnose eye diseases and patient organizations. Their ideas are rather similar to the ones proposed by the doctors (healthcare facilities, patient interest groups). Both of these ideas concerns customers as a key partner and can be seen as a strategic alliance. Creating key partnerships can be done by linking customers and suppliers to the organization or by identifying complementors (Chesbrough, 2007, p. 13) that can help the organization to get a hold of key resources or to spread the risk (Osterwalder and Pigneur, 2010, p. 39, Halme et al. 2007, p. 128). The manager had ideas about a financial partner, authorities for patents, technicians and researchers. These possible partners are not potential customers, but instead enable the organization to get a hold of resources that they would not be able to attain otherwise. Another possible partner is a provider of anaesthetics, which could complement the company according to one nurse. All of these ideas concerns strategic alliances with non-competitors. The partners proposed by the doctors and patients are focused on attaining resources/information that might help the company create value externally, while the ideas from the manager focus on creating value internally.

This topic did not receive many ideas overall and the ideas that the customer did come up with were rather different (except for the ideas from the doctors and patients) and all of them were strategic alliances with non-competitors.

The company had many ideas regarding different key partners. However, one partner that was not mentioned by the company was the patient interest groups. Financial partners or partners that could help out with patents and such are not mentioned by the company. The ideas from the company do revolve around both internally focused partners and externally focused partners.

Within this dimension there seem to be only the manager that can come up with more then one idea that the company have not thought of. Even if the patients and the doctors have one idea that is new to the company, the few number of ideas might indicate that the company should use its resources elsewhere.

7.6.9 Summary

As we have shown all customer groups had ideas regarding a number of business model dimensions. There are only one business model dimensions that three customer groups had zero ideas about, which is the revenue model dimensions and all four customer groups had most ideas concerning the value proposition dimension. It is interesting to note that patients, nurses and doctors all had distinctively more ideas concerning value proposition than any other dimension. Furthermore patients, nurses and doctors had customers and customer relationship as two of the dimensions that they the most ideas regarding, after value proposition. In table 9 is a summary of what business model dimensions the different customers had ideas about on a scale from most ideas to no ideas. Important to note is that this summary is based on an average number of ideas per customer group.
Some of the ideas presented by the different customer groups were also mentioned by
the company representatives. The ideas that the customers had but were not mentioned
by the company are presented in table 10, important to note is that the table is for the
total number of ideas form each customer group and not average idea per customer
group.

Interesting to note is that value proposition only ranks top for patients and nurses, while
channels and key partners where the business model dimensions that differed the most
between doctors/managers and the company. Revenue model is the dimension in which
no ideas differed between customers and the company. There are also some ideas that
the company had that the customer groups did not have.
8 Conclusions

8.1 Conclusions
All companies have to develop in order to stay competitive. In order to stay competitive a company can innovate its product offering, its service offering or its business model. Business model is a new unit of analysis that has a growing interest both from a practical perspective and an academic perspective. Innovating a company’s business model is a source for competitive advantage where the focus is on new ways to create or capture value. Within the fields of marketing, product development and service development studies have examined how the customer can be a resource for development and/or innovation. However, customer involvement in the field of business models innovation has been sparsely researched. This is the background to our study, with our research question being:

In which business model dimensions can the customer be a resource for business model development and/or innovation for a medical instrument firm?

The purpose of this thesis is:

- To explore in which business model dimensions the customer can be a resource for innovation or development.
- Explore if there is any difference between the different customers roles and how they can be used as a resource for innovation or development in the business model dimensions.

The research in this thesis suggests that the customer can be used as a resource for business model innovation/development. Depending on the purpose of involving customers, different results can be achieved by using different customer groups. All of the respondents had a lot of ideas about value proposition. There is however an overlap between the ideas the customers have and the ideas the company representatives have. Therefore if the purpose is to generate ideas that the company has not already come up with themselves they will benefit from asking nurses and patients. If the purpose would be to test which ideas the company should focus on, they could ask all of the groups since all groups have a lot of ideas about value proposition.

Depending on the business model dimension that the company wants to get information about, different customer groups could be used for generating new ideas. Key activities had patient and nurses the most ideas about, while doctors have most ideas about channels. Managers on the other hand had most new ideas about key partners.

Just as the customers can have different ideas about some dimensions, there are other dimensions in which the customers have no or few new ideas about. Revenue model and customer relationships are the dimensions that generated the least amount of new ideas.

As we have previously shown the value proposition is the dimension that the customers had most ideas about, but looking at the ideas that differ between company and customers it is only the value proposition for patients and nurses that differs the most. This suggests that the company ideas about value proposition are more directed at doctors and managers than patients and nurses. Our research also suggests that the company is only looking at the current interaction points between the company and its customers while the patients have a broader perspective with ideas about new
interaction points. The difference between company ideas and patient ideas can also be seen in other dimensions where patient have ideas such as patient interest groups as a key partner or knowledge about patients as key resource. Overall the patients can be used in order to get new ideas for business model innovation, where most ideas are about value proposition, key activities and key resources. Interesting to note is that both key resources and key activities did not generate that many ideas overall from the patients, but the ideas that where generated where new to the company.

Key partners are another interesting factor that three of our respondent groups have just one “new” idea about, but the manager had most new ideas about that factor. What is interesting is not just the difference between the different customer groups, but also that most ideas that were mentioned by the customers were also new ideas to the company. Another interesting finding is that the channels dimension generated most new ideas from the doctors, while that dimension did not generate that many ideas overall.

The overlap between customer ideas and company ideas is quite large. Most of the ideas the customers had were ideas that the company also had. With regard to this the model presented by Pynnönen et al. (2012) (where representatives from the company identified different factors and then let the customer rank these) seems to be missing only a small amount of ideas. However there are a number of ideas that the company has not come up with that the customer has come up with.

One interesting observation is that ideas from different customer groups differ depending on their relationship with the business model. An example is the patients that have ideas regarding value proposition are leaning towards a focus on more customized care and the patients experience surrounding the eye examination and the diagnosis of high eye pressure. The ideas from the company on the other hand is more focused on standardization and does not recognize the possibility of value creation or capture related to the product in the same way. Similar to the company’s ideas concerning the value proposition is the view of the doctors and nurses. Their ideas are related to the examination or the instrument. They do not in the same way as the patient have ideas concerning the whole context of eye examination and the diagnosis. Based on this we argue that it seems like the relationship the customer has to the business model effects the nature of the ideas. Since this has not been our main research question further research of this issue is needed. However if this will show to be true this is valuable knowledge both for better understanding the relationship between stakeholders and the business model as well as for companies looking to use the customer as a resource for business model innovation.

Another observation we have done is that there are differences in the degree of which the ideas are developed. Some ideas the customers had have been very non-specific, for example, one patient describes that more information is always good. He does not specify what type of information or how this information should be delivered. On the other hand the same patient describes an idea he has that the company could be able to access his journal and give recommendations on treatment. The later idea in our view is much more developed than the first one. Based on this we argue that there seem to be differences in how well developed the ideas are. It would be interesting to understand if the level of detail in an idea affects the use of that idea for the company and also what determines how developed an idea is from a customer.
8.2 Theoretical contribution
This thesis contributes to theory in mainly three ways. First is the overview and comparison of different models of business model dimensions. This contributes with an overview of earlier research in the field and it is a starting point for future research. Based on the overview is also a model presented that originates from earlier research.

The second contribution is that this thesis presents a model that illustrates in which business model dimensions different customer groups have ideas and in which dimensions they can be a resource for business model innovation. The third contribution is that this thesis also compares the ideas from the different customer groups with the ideas from company representatives and based on this present an adjusted model of in which dimensions the customer can be a resource for business model innovation.

We argue that these contributions have the potential to help the field of business model research to continue to develop and especially the research concerning customer involvement in business model innovation. Additionally we also recognize that the ambition of this thesis to build on earlier theory rather than developing new definitions is an important step towards increasing the credibility of the field of business model research.

8.3 Societal contribution
In this thesis we have showed that customer has ideas in a number of business model innovation. As earlier research has shown business model innovation can be an important resource for developing a company and increasing the competitiveness. Based on our research we argue that there is reason to believe that the customer can be a resource for business model innovation, however future research has to determine what the outcome of the ideas generated from customer has. This implicates that customer involvement can be an important resource for developing a business model and also a company. As a company develops it has the possibility to employ more people and creates a positive effect on the economic growth in the region and country. Therefore we argue that our research as implications that could prove to be important for the growth of companies and hence the growth of the economy in a country or region.

Furthermore we also argue that by utilizing the customer as a resource this can have positive effects also for the customers that get acknowledged and their influence on the business model can increase. However we also recognize that the inclusion of the customer in development of the business model is not simple, the customer has to be treated with respect in order to not intrude on the private life of the customers. This is utterly important in industries such as the medical instrument industry where some customer groups e.g. patients has an exposed role.

8.4 Practical contribution
The practical contribution of our research is mainly two. The first is that we present a model indicating in which business model dimensions different customer groups have ideas. This can help companies to better utilize the customer for business model innovation and also work as an eye opener to what differences there is between different customer groups. Secondly we also show what differences and similarities there is between customer ideas and ideas from company representatives. We argue that this can help companies to better understand the differences in perception between the customer and the company as well as help the company understand why there are differences and similarities between the ideas from the company and the customers. Important to note is
that our research has not focused on the outcome of these ideas and this is something we recognize as an important area to look into in the future.

8.5 Recommendation to managers

First of all, the customer has ideas. This might not be a revolutionary statement but it is important to understand for managers that the customers are a pool for ideas. However the ideas that the customer has are to a large extent the same or similar to the ideas that the company representatives have. Depending on the purpose of why the customer is involved as a resource, different results could be achieved by asking different customer groups. In some areas, e.g. value proposition, new ideas can come from patients and nurses. If the purpose is to get a view of the customers’ ideas and see what similarities and differences there are between these and the company ideas, the company should ask all customer groups.

Different customer groups seem to have different focuses on the ideas they have. This might be related to the relationships or view of the business model that the customer has. It is important to remember this as different customer groups seems to have different ideas depending on their relationship to the business model. Therefore it is relevant to try to gain ideas from different customer groups and also evaluate the ideas with regard to the view that customer group has to the business model.

As our research has shown, there are quite large differences between individual customers in the amount of ideas they have. Therefore it could be a good strategy for companies to identify key customers with a large number of ideas and try to build and maintain a relationship with these idea-generating customers. One way of maintaining the relationship with these customers is to give feedback on their ideas, to show the customer what is happening with their idea and give them credit for the results from that idea. A potential strategy for a company to gain ideas regarding their business model is to identify a number of key customers (from different customer groups) that will generate new ideas and then test these ideas on a larger number of customers (e.g. through a survey).

8.6 Future research

First of all we would like to point out the need for more empirical research in the field of business model research. Especially studies of business model dimensions lack larger empirical studies. As a number of researchers have highlighted there is a need for more research to consolidate the field and create widely accepted definitions.

In our study we have focused on in which dimensions the customer can be a resource for business model innovation in the idea generation phase. Our findings suggest that there are a number of dimensions where the customer can be a resource for business model innovation. We recognize that there is need for further studies of this phenomenon in mainly six areas.

The first is related to the method. We have used interviews in order to identify ideas and understand the perception of the relationship with the business model from the customer perspective. In research there is always an effect on the results from the selected method. Therefore would studies of in what dimensions the customers could be a resource for business model innovation with different methods be useful to verify our results and identify the effect of the method. Using focus group could be an example of
alternative methods to identify in which business model dimensions the customer can be a resource.

The second area we see a great need for future research is a larger empirical study of the phenomena. Based on our research there is a possibility to generate hypothesis regarding in what dimensions different customers and customer groups would have ideas. It would be valuable to test this in a larger setting to see if our findings are representative for other customer groups and other industries.

Third, our study has focused on the idea generation phase of business model innovation. In order to deepen the knowledge of how customer can be a resource for business model innovation it would be interesting to study customer involvement in other stages of business model innovation. How can the customer be a resource in, for example, the evaluation phase of business model innovation?

Fourth, in our study the focus has not been to understand how the companies uses the idea from the customer to innovate their business model, but rather to understand what ideas the customer has that could be used for innovating the business model. A logical next step would be to study how the ideas are used in the company and what the outcomes of all these different ideas are and what determines what ideas the company uses and which they do not use. Another interesting area related to the outcomes of the ideas is to study what level of innovation different ideas lead to. Examples of issues that would be interesting to understand better is; do customer ideas lead to incremental, really new or radical innovation and are there differences between customer groups.

The fifth area is regarding the differences in the customer groups. It seems like some individuals have more ideas than others, this should be studied more in detail. If it is correct that some customers have significantly more ideas than others it would first be interesting to understand if the ideas this group has is different from other customers and secondly why this difference exists. If the tendency we have observed is correct it would be highly interesting for companies to learn how to identify these customers with a large amount of ideas.

The sixth area where future research is needed concerns the relationship between the customer and the business model. In our study we have seen a tendency that the types of ideas differ between the customer groups. We believe that this can be a result of the different relationship the customer groups have to the business model. There is a difference between the patient that benefit from the business model and the nurse that is a user. This relationship difference seems to affect the ideas. It would be valuable for companies and researchers to better understand this relationships effect in order to better understand the customer ideas and how different customer groups can be used and involved in business model innovation.

The focus of this study has been customer involvement in business model innovation. Since our focus has been on the idea generation phase we have gained insight on the ideas the customers has regarding the business model and therefore also the company. We have observed that there is a difference in the level of detail customer has when they describe different ideas. By better understanding what affects this level of detail there is a potential to better understand the process of idea generation among customers. Furthermore, future studies could focus on the implicit nature of some customer ideas where certain ideas implicate changes in other dimensions in order to be implemented. An example of this could be the customer idea about offering a product for home use.
and in order to implement this idea changes in a lot of other dimensions will be needed in order to deliver on this value. This could suggest that some ideas could have “greater value” than other ideas by creating the seed to innovate the entire business model.
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Appendix 1 Interview Guide Patient

English

Introduction

The purpose is to hear your experience on eye examination concerning high pressure and how it would be developed based on your perspective. There is no right or wrong, and our goal is to get multiple perspectives on how eye examinations concerning high pressure could be developed. Our goal is to interview patients (through patient organizations), doctors and / or nurses, purchasers who make purchasing decisions and representatives from companies that produce IOP devices. The result is encoded and used in a master's thesis in Business Administration. Name and organization name will be anonymous and coded.

Questions?

General information:

Name?

How many times have you measured your eye pressure?

What was the reason you measured you eye pressure the first time?

Where have you measured your eye pressure?

Are you currently under taking treatment for high eye pressure?

Get contact details.

Email:

Phone:

Theme 1

You are – patient – that has undertaken examinations regarding supposed high eye pressure.

What characterizes a good examination of this type?

Good words to use:

Can you give examples?

Can you explain?

Why do you do it this way?

Follow up on theme 1

**Follow up 1. How could this examination become even better?**

Have you tried this?

**Follow up 2. What are common problems?**

Have you tried to fix these?
Theme 2. More specific questions

As part of doing an eye examination regarding suspected high eye pressure, some type of instrument is needed to measure the pressure of the eye. Now we are going to ask more specific questions related to these instruments and the company’s manufacturing these instruments.

**Business model dimensions**

**Value proposition**

What value does a company that provides instruments for measuring high eye pressure create?

Do you have any idea on any additional value this company could create?

Do you have any more ideas?

Do you have any idea on any other value this company could create?

Do you have any more ideas?

**Channels**

Do you have any idea on what channels the company could use to deliver value? (e.g. new type of distribution channels)

Do you have any more ideas?

**Customer relations**

Do you have any idea on how the company can create a relationship with the customer?

Do you have any more ideas?

Do you have any idea on how the company can sustain its relationship with the customer?

Do you have any more ideas?

**Revenue streams**

Do you have any idea on how much the value that the company creates is worth for the customer in money?

Do you have any more ideas?

Do you have any idea on how the customer would want to pay for the value?

Do you have any more ideas?

**Key resources**

Do you have any idea on what resources the company needs to create the value for the customer?

Do you have any more ideas?

**Key activities**

Do you have any idea on what activities the company has to do to create value for the customer?

Do you have any more ideas?
Key partners

Do you have any idea of what partners the company has to have to create value for the customer? (if abstract ask them to be specific)

Do you have any more ideas?

Customer segment

Do you have any idea of other customers that could be interested in the value that the company creates? (if abstract ask them to be specific)

Do you have any more ideas?

Swedish

Inledning


Frågor?

Allmänt:

Namn?

Hur många gånger har du gjort en ögonundersökning där du mätt ögontryck?

Vad var anledningen till att du genomgått denna undersökning?

Var har du genomgått undersökningar för misstänkt högt ögontryck?

Är du under pågående behandling för högt ögon tryck?

Ta kontaktuppgifter epost och telefon.

Epost:

Telefon:

Tema 1

OBS SE EFTER OM PERSONEN ÄR PATIENT!

Du är - Patient - och har genomgått ögonundersökningar som gäller misstänkt högt tryck i ögat. Vad kännetecknar en bra sådan undersökning?

Bra ord att använda:

Kan du ge exempel?

Kan du beskriva?

Varför gör ni på detta sätt?
TEMA 2

Följdfråga 1. Hur skulle den här undersökningen kunna bli bättre?

Har ni provar detta?

Följdfråga 2. Vad är vanliga problem?

Har ni gjort något åt detta?

Del 2 – specifikt om affärsmodellen.

Som en del i att göra en ögonundersökning för att mäta misttänkt högt tryck i ögat - behövs någon typ av instrument för att mäta trycket i ögat. Nu kommer vi ställa frågor som är mer relaterade till dessa instrument och företagen som tillverkar dessa instrument.

Business modell dimensions

Värdeerbjudande

Vilket värde skapas av ett företag som tillhandhåller en produkt för ögontrycksmätning?

Har du någon idé om något ytterligare värde som detta företag skulle kunna skapa?

Har du någon fler?

Har du någon idé om något annat värde som skulle detta företag skulle kunna skapa?

Har du någon fler?

Kanaler

Har du någon idé om vilka kanaler företaget kan använda för att leverera värde för kunden? (olika distributions kanaler)

Har du någon fler?

Kundrelation

Har du någon idé om hur företaget kan skapa en relation med kunden?

Har du någon fler?

Har du någon idé om hur företaget kan bibehålla sin relation med kunden?

Har du någon fler?

Intäktsflöden

Har du någon idé om hur mycket värdet som företaget skapar för kunden är värt i pengar? (om flera, för de olika)

Har du någon fler?

Har du någon idé om hur kunden skulle vilja betala företaget för det här värdet?

Har du någon fler?

Nykkelresurser
Har du någon idé om vad företaget behöver för resurser för att skapa värde för kunden? (om dem svarar abstrakt be dem specificera)

Har du fler?

**Nyckelaktiviteter**

Har du någon idé om vad företaget behöver göra för aktiviteter för att skapa värde för kunden? (om dem svarar abstrakt be dem specificera)

Har du fler?

**Nyckelpartnerskap**

Har du någon idé om vad företaget behöver för partners för att skapa värde för kunden? (om dem svarar abstrakt be dem specificera)

Har du fler?

**Kundsegment**

Har du någon idé om andra kunder som skulle kunna vara intresserade av värdet som företaget skapar? (om dem svarar abstrakt be dem specificera)

Har du någon fler?
Appendix 2 Interview guide Doctor

English

Introduction

The purpose is to hear your experience on eye examination concerning high pressure and how it would be developed based on your perspective. There is no right or wrong, and our goal is to get multiple perspectives on how eye examinations concerning high pressure could be developed. Our goal is to interview patients (through patient organizations), doctors and / or nurses, purchasers who make purchasing decisions and representatives from companies that produce IOP devices. The result is encoded and used in a master's thesis in Business Administration. Name and organization name will be anonymous and coded.

Questions?

General information:

Name?

What work role do you have?

How long have you worked here?

Tell us about your work tasks?

Have you worked with similar tasks in any other organization?

If so, for how many years?

Get contact details.

Email:

Phone:

Theme 1

You are – doctor –that are does examinations regarding supposed high eye pressure. What characterizes a good examination of this type?

Good words to use:

Can you give examples?

Can you explain?

Why do you do it this way?

Follow up on theme 1

Follow up 1. How could this examination become even better?

Have you tried this?

Follow up 2. What are common problems?

Have you tried to fix these?
Theme 2. More specific questions

As part of doing an eye examination regarding suspected high eye pressure, some type of instrument is needed to measure the pressure of the eye. Now we are going to ask more specific questions related to these instruments and the company’s manufacturing these instruments.

**Business model dimensions**

**Value proposition**
What value does a company that provides instruments for measuring high eye pressure create?
Do you have any idea on any additional value this company could create?
Do you have any more ideas?
Do you have any idea on any other value this company could create?
Do you have any more ideas?

**Channels**
Do you have any idea on what channels the company could use to deliver value? (e.g. new type of distribution channels)
Do you have any more ideas?

**Customer relations**
Do you have any idea on how the company can create a relationship with the customer?
Do you have any more ideas?
Do you have any idea on how the company can sustain its relationship with the customer?
Do you have any more ideas?

**Revenue streams**
Do you have any idea on how much the value that the company creates is worth for the customer in money?
Do you have any more ideas?
Do you have any idea on how the customer would want to pay for the value?
Do you have any more ideas?

**Key resources**
Do you have any idea on what resources the company needs to create the value for the customer?
Do you have any more ideas?

**Key activities**
Do you have any idea on what activities the company has to do to create value for the customer?
Do you have any more ideas?
Key partners

Do you have any idea of what partners the company has to have to create value for the customer? (if abstract ask them to be specific)

Do you have any more ideas?

Customer segment

Do you have any idea of other customers that could be interested in the value that the company creates? (if abstract ask them to be specific)

Do you have any more ideas?

Swedish

Inledning


Frågor?

Allmänt:

Namn?

Vilken befattning har du?

Hur länge har du arbetat här?

Berätta kort om dina arbetsuppgifter?

Har du arbetat med samma eller liknande arbetsuppgifter i någon annan organisation tidigare?

Om ja, hur många år?

Ta kontaktuppgifter epost och telefon.

Epost:

Telefon:

Tema 1

Du är - läkare - och gör ögonundersökningar som gäller misstänkt högt tryck i ögat. Vad kännetecknar en bra sådan undersökning?

Bra ord att använda:

Kan du ge exempel?

Kan du beskriva?

Varför gör ni på detta sätt?
TEMA 2

Följfråga 1. Hur skulle den här undersökningen kunna bli bättre?

Har ni provat detta?

Följfråga 2. Vad är vanliga problem?

Har ni gjort något åt detta?

Del 2 – specifikt om affärsmodellen.

Som en del i att göra en ögonundersökning för att mäta misttänkt högt tryck i ögat - behövs någon typ av instrument för att mäta trycket i ögat. Nu kommer vi ställa frågor som är mer relaterade till dessa instrument och företagen som tillverkar dessa instrument.

Business modell dimensions

Värdeerbjudande

Vilket värde skapas av ett företag som tillhandahåller en produkt för ögontrycksmätning?

Har du någon idé om något ytterligare värde som detta företag skulle kunna skapa?

Har du någon fler?

Har du någon idé om något annat värde som skulle detta företag skulle kunna skapa?

Har du någon fler?

Kanaler

Har du någon idé om vilka kanaler företaget kan använda för att leverera värde för kunden? (olika distributions kanaler)

Har du någon fler?

Kundrelation

Har du någon idé om hur företaget kan skapa en relation med kunden?

Har du någon fler?

Har du någon idé om hur företaget kan bibehålla sin relation med kunden?

Har du någon fler?

Intäktsflöden

Har du någon idé om hur mycket värdet som företaget skapar för kunden är värt i pengar? (om flera, för de olika)

Har du någon fler?

Har du någon idé om hur kunden skulle vilja betala företaget för det här värdet?

Har du någon fler?

Nyckelresurser
Har du någon idé om vad företaget behöver för resurser för att skapa värde för kunden? (om dem svarar abstrakt be dem specificera)

Har du fler?

**Nyckelaktiviteter**

Har du någon idé om vad företaget behöver göra för aktiviteter för att skapa värde för kunden? (om dem svarar abstrakt be dem specificera)

Har du fler?

**Nyckelpartnerskap**

Har du någon idé om vad företaget behöver för partners för att skapa värde för kunden? (om dem svarar abstrakt be dem specificera)

Har du fler?

**Kundsegment**

Har du någon idé om andra kunder som skulle kunna vara intresserade av värdet som företaget skapar? (om dem svarar abstrakt be dem specificera)

Har du någon fler?
Appendix 3 Interview guide Nurse

English

Introduction

The purpose is to hear your experience on eye examination concerning high pressure and how it would be developed based on your perspective. There is no right or wrong, and our goal is to get multiple perspectives on how eye examinations concerning high pressure could be developed. Our goal is to interview patients (through patient organizations), doctors and / or nurses, purchasers who make purchasing decisions and representatives from companies that produce IOP devices. The result is encoded and used in a master's thesis in Business Administration. Name and organization name will be anonymous and coded.

Questions?

General information:

Name?

What work role do you have?

How long have you worked here?

Tell us about your work tasks?

Have you worked with similar tasks in any other organization?

If so, for how many years?

Get contact details.

Email:

Phone:

Theme 1

You are – nurse – that are does examinations regarding supposed high eye pressure. What characterizes a good examination of this type?

Good words to use:

Can you give examples?

Can you explain?

Why do you do it this way?

Follow up on theme 1

Follow up 1. How could this examination become even better?

Have you tried this?

Follow up 2. What are common problems?

Have you tried to fix these?
Theme 2. More specific questions

As part of doing an eye examination regarding suspected high eye pressure, some type of instrument is needed to measure the pressure of the eye. Now we are going to ask more specific questions related to these instruments and the company’s manufacturing these instruments.

**Business model dimensions**

**Value proposition**

What value does a company that provides instruments for measuring high eye pressure create?

Do you have any idea on any additional value this company could create?

Do you have any more ideas?

Do you have any idea on any other value this company could create?

Do you have any more ideas?

**Channels**

Do you have any idea on what channels the company could use to deliver value? (e.g. new type of distribution channels)

Do you have any more ideas?

**Customer relations**

Do you have any idea on how the company can create a relationship with the customer?

Do you have any more ideas?

Do you have any idea on how the company can sustain its relationship with the customer?

Do you have any more ideas?

**Revenue streams**

Do you have any idea on how much the value that the company creates is worth for the customer in money?

Do you have any more ideas?

Do you have any idea on how the customer would want to pay for the value?

Do you have any more ideas?

**Key resources**

Do you have any idea on what resources the company needs to create the value for the customer?

Do you have any more ideas?

**Key activities**

Do you have any idea on what activities the company has to do to create value for the customer?

Do you have any more ideas?
**Key partners**

Do you have any idea of what partners the company has to have to create value for the customer? (if abstract ask them to be specific)

Do you have any more ideas?

**Customer segment**

Do you have any idea of other customers that could be interested in the value that the company creates? (if abstract ask them to be specific)

Do you have any more ideas?

**Swedish**

Inledning


Frågor?

Allmänt:

Namn?

Vilken befattning har du?

Hur länge har du arbetat här?

Berätta kort om dina arbetsuppgifter?

Har du arbetat med samma eller liknande arbetsuppgifter i någon annan organisation tidigare?

Om ja, hur många år?

Ta kontaktuppgifter epost och telefon.

Epost:

Telefon:

**Tema 1**

Du är - sjuksköterska - och gör ögonundersökningar som gäller misstänkt högt tryck i ögat. Vad kännetecknar en bra sådan undersökning?

*Bra ord att använda:*

*Kan du ge exempel?*

*Kan du beskriva?*

*Varför gör ni på detta sätt?*
TEMA 2

Följdfråga 1. Hur skulle den här undersökningen kunna bli bättre?

Har ni provat detta?

Följdfråga 2. Vad är vanliga problem?

Har ni gjort något åt detta?

Del 2 – specifikt om affärsmodellen.

Som en del i att göra en ögonundersökning för att mäta misttänkt högt tryck i ögat - behövs någon typ av instrument för att mäta trycket i ögat. Nu kommer vi ställa frågor som är mer relaterade till dessa instrument och företagen som tillverkar dessa instrument.

Business model dimensions

Värdeerbjudande

Vilket värde skapas av ett företag som tillhandhåller en produkt för ögontrycksmätning?

Har du någon idé om något ytterligare värde som detta företag skulle kunna skapa?

Har du någon fler?

Har du någon idé om något annat värde som skulle detta företag skulle kunna skapa?

Har du någon fler?

Kanaler

Har du någon idé om vilka kanaler företaget kan använda för att leverera värde för kunden?

(olika distributions kanaler)

Har du någon fler?

Kundrelation

Har du någon idé om hur företaget kan skapa en relation med kunden?

Har du någon fler?

Har du någon idé om hur företaget kan bibehålla sin relation med kunden?

Har du någon fler?

Intäktsflöden

Har du någon idé om hur mycket värde som företaget skapar för kunden är värt i pengar? (om flera, för de olika)

Har du någon fler?

Har du någon idé om hur kunden skulle vilja betala företaget för det här värdet?

Har du någon fler?

Nykkelresurser
Har du någon idé om vad företaget behöver för resurser för att skapa värde för kunden? (om dem svarar abstrakt be dem specificera)

Har du fler?

**Nyckelaktiviteter**

Har du någon idé om vad företaget behöver göra för aktiviteter för att skapa värde för kunden? (om dem svarar abstrakt be dem specificera)

Har du fler?

**Nyckelpartnerskap**

Har du någon idé om vad företaget behöver för partners för att skapa värde för kunden? (om dem svarar abstrakt be dem specificera)

Har du fler?

**Kundsegment**

Har du någon idé om andra kunder som skulle kunna vara intresserade av värdenet som företaget skapar? (om dem svarar abstrakt be dem specificera)

Har du någon fler?
Appendix 4 Interview guide Manager

English

Introduction

The purpose is to hear your experience on eye examination concerning high pressure and how it would be developed based on your perspective. There is no right or wrong, and our goal is to get multiple perspectives on how eye examinations concerning high pressure could be developed. Our goal is to interview patients (through patient organizations), doctors and / or nurses, purchasers who make purchasing decisions and representatives from companies that produce IOP devices. The result is encoded and used in a master's thesis in Business Administration. Name and organization name will be anonymous and coded.

Questions?

General information:

Name?

What work role do you have?

How long have you worked here?

Tell us about your work tasks?

Have you worked with similar tasks in any other organization?

If so, for how many years?

Get contact details.

Email:

Phone:

Theme 1

You are – a manager – that is purchasing instruments for examinations regarding supposed high eye pressure. What characterizes a good examination of this type?

Good words to use:

Can you give examples?

Can you explain?

Why do you do it this way?

Follow up on theme 1

Follow up 1. How could this examination become even better?

Have you tried this?

Follow up 2. What are common problems?

Have you tried to fix these?
Theme 2. More specific questions

As part of doing an eye examination regarding suspected high eye pressure, some type of instrument is needed to measure the pressure of the eye. Now we are going to ask more specific questions related to these instruments and the company’s manufacturing these instruments.

Business model dimensions

Value proposition

What value does a company that provides instruments for measuring high eye pressure create?

Do you have any idea on any additional value this company could create?

Do you have any more ideas?

Do you have any idea on any other value this company could create?

Do you have any more ideas?

Channels

Do you have any idea on what channels the company could use to deliver value? (e.g. new type of distribution channels)

Do you have any more ideas?

Customer relations

Do you have any idea on how the company can create a relationship with the customer?

Do you have any more ideas?

Do you have any idea on how the company can sustain its relationship with the customer?

Do you have any more ideas?

Revenue streams

Do you have any idea on how much the value that the company creates is worth for the customer in money?

Do you have any more ideas?

Do you have any idea on how the customer would want to pay for the value?

Do you have any more ideas?

Key resources

Do you have any idea on what resources the company needs to create the value for the customer?

Do you have any more ideas?

Key activities

Do you have any idea on what activities the company has to do to create value for the customer?

Do you have any more ideas?
**Key partners**

Do you have any idea of what partners the company has to have to create value for the customer? (if abstract ask them to be specific)

Do you have any more ideas?

**Customer segment**

Do you have any idea of other customers that could be interested in the value that the company creates? (if abstract ask them to be specific)

Do you have any more ideas?

**Swedish**

**Inledning**


Frågor?

Allmänt:

Namn?

Vilken befattning har du?

Hur länge har du arbetat här?

Berätta kort om dina arbetsuppgifter?

Har du arbetat med samma eller liknande arbetsuppgifter i någon annan organisation tidigare?

   Om ja, hur många år?

Ta kontaktuppgifter epost och telefon.

Epost:

Telefon:

Tema 1

Du är - verksamhetschef - och köper in instrument som används för att mäta misstänkt högt tryck i ögat. Vad kännetecknar en bra sådan undersökning utifrån ditt perspektiv?

   Bra ord att använda:

   Kan du ge exempel?

   Kan du beskriva?

   Varför gör ni på detta sätt?
TEMAT 2

Följfråga 1. Hur skulle den här undersökningen kunna bli bättre utifrån ditt perspektiv?

Har ni provat detta?

Följfråga 2. Vad är vanliga problem utifrån ditt perspektiv?

Har ni gjort något åt detta?

Del 2 – specifikt om affärsmodellen.

Som en del i att göra en ögonundersökning för att mäta misstänkt högt tryck i ögat - behövs någon typ av instrument för att mäta trycket i ögat. Nu kommer vi ställa frågor som är mer relaterade till dessa instrument och företagen som tillverkar dessa instrument.

Business modell dimensions

Värdeerbjudande

Vilket värde skapas av ett företag som tillhandhåller en produkt för ögontrycks mätning?

Har du någon idé om något ytterligare värde som detta företag skulle kunna skapa?

Har du någon fler?

Har du någon idé om något annat värde som detta företag skulle kunna skapa?

Har du någon fler?

Kanaler

Har du någon idé om vilka kanaler företaget kan använda för att leverera värde? (olika distributions kanaler)

Har du någon fler?

Kundrelation

Har du någon idé om hur företaget kan skapa en relation med kunder?

Har du någon fler?

Har du någon idé om hur företaget kan bibehålla sin relation med kunder?

Har du någon fler?

Intäktsflöden

Har du någon idé om hur mycket värde som företaget skapar för kunden är värt i pengar? (om flera, för de olika)

Har du någon fler?

Har du någon idé om hur kunden skulle vilja betala företaget för det här värdet?

Har du någon fler?

Nyttelresurser
Har du någon idé om vad företaget behöver för resurser för att skapa värde för kunden? (om dem svarar abstrakt be dem specificera)

Har du fler?

**Nyckelaktiviteter**

Har du någon idé om vad företaget behöver göra för aktiviteter för att skapa värde för kunden? (om dem svarar abstrakt be dem specificera)

Har du fler?

**Nyckelpartnerskap**

Har du någon idé om vad företaget behöver för partners för att skapa värde för kunden? (om dem svarar abstrakt be dem specificera)

Har du fler?

**Kundsegment**

Har du någon idé om andra kunder som skulle kunna vara intresserade av värdet som företaget skapar? (om dem svarar abstrakt be dem specificera)

Har du någon fler?
Appendix 5 Interview guide Company

English
Introduction

The purpose is to hear your experience on eye examination concerning high pressure and how it would be developed based on your perspective. There is no right or wrong, and our goal is to get multiple perspectives on how eye examinations concerning high pressure could be developed. Our goal is to interview patients (through patient organizations), doctors and / or nurses, purchasers who make purchasing decisions and representatives from companies that produce IOP devices. The result is encoded and used in a master's thesis in Business Administration. Name and organization name will be anonymous and coded.

Questions?

General information:

Name?

What role do you have in the company?

How long have you worked in the company?

Tell us about your work tasks?

Have you worked with similar tasks in any other organization?

If so, for how many years?

Get contact details.

Email:

Phone:

Theme 1

You are –working with or for– a company that sells instruments that are used during examinations regarding supposed high eye pressure. What characterizes a good examination of this type?

Good words to use:

Can you give examples?

Can you explain?

Why do you do it this way?

Follow up on theme 1

Follow up 1. How could this examination become even better?

Have you tried this?

Follow up 2. What are common problems?

Have you tried to fix these?
Theme 2. More specific questions

As part of doing an eye examination regarding suspected high eye pressure, some type of instrument is needed to measure the pressure of the eye. Now we are going to ask more specific questions related to these instruments and the company’s manufacturing these instruments.

**Business model dimensions**

**Value proposition**

What value does the company create for the customer today?

Do you have any idea of any additional value the company could create for the customers?

Do you have any more ideas?

Do you have any idea on any new value the company could create?

Do you have any more ideas?

**Channels**

What channels does the company use today to deliver value?

Do you have any ideas on new channels the company could use to deliver value? (e.g. new type of distribution channels)

Do you have any more?

**Customer relations**

How does the company create relationship with the customer?

Do you have any idea on other ways that the company could create relationships with the customer?

Do you have any more ideas?

How does the company sustain their relationship with the customer?

Do you have any idea on other ways that the company could sustain its relationship with customers?

Do you have any more ideas?

**Revenue streams**

What does the customer pay for the value created by the company?

Do you have any idea on how much the value that the company creates is worth to the customer in money?

Do you have any more ideas?

How does the customer pay for the value created by the company?

Do you have any idea on how the customer would want to pay for the value created by the company?
Do you have any more ideas?

**Key resources**

What resources does the company need to create value for the customer?

Do you have any idea on other resources that the company need to create value for the customer? (if abstract ask them to be specific)

Do you have any more ideas?

**Key activates**

What activities does the company undertake to create value for the customer?

Do you have any idea on other activities that the company could do to create value for the customer? (if abstract ask them to be specific)

Do you have any more ideas?

**Key partners**

What partners does the company have in order to create value for the customer?

Do you have any idea on other partners the company could need in order to create value for the customer?

Do you have any more ideas?

**Customer segment**

What customers does the company create value for?

What customers does the company want to create value for?

Do you have any idea on other customers that the company could create value for? (if abstract ask them to be specific)

Do you have any more ideas?

**Swedish**

**Inledning**


Frågor?

Allmänt:

Namn?

Vilken roll har du i företaget?

Hur länge har du arbetat här?
Berätta kort om dina arbetsuppgifter?
Har du arbetat med samma eller liknande arbetsuppgifter i någon annan organisation tidigare?
Om ja, hur många år?
Ta kontaktuppgifter epost och telefon.
Epost:
Telefon:

Tema 1

Du – arbetar– för ett företag som säljer instrument som används vid undersökningar rörande misstänkt högt tryck i ögat. Vad kännetecknar en bra sådan undersökning?

Bra ord att använda:
Kan du ge exempel?
Kan du beskriva?
Varför gör ni på detta sätt?

TEMA 2

Följdfråga 1. Hur skulle den här undersökningen kunna bli bättre?
Har ni provat detta?
Följdfråga 2. Vad är vanliga problem?
Har ni gjort något åt detta?

Del 2 – specifikt om affärsmodellen.

Som en del i att göra en ögonundersökning för att mäta misstänkt högt tryck i ögat - behövs någon typ av instrument för att mäta trycket i ögat. Nu kommer vi ställa frågor som är mer relaterade till dessa instrument och företagen som tillverkar dessa instrument.

Business modell dimensions

Värdeerbjudande

Vilket värde skapar företaget för kunderna i dag?
Har du någon idé om något ytterligare värde som företaget skulle kunna skapa för kunderna?
Har du någon fler?
Har du någon idé om något annat värde som företaget skulle kunna skapa?
Har du någon fler?

Kanaler
Vilka kanaler använder företaget idag för att leverera värde?

Har du någon idé om andra kanaler företaget kan använda för att leverera värde? (olika distributions kanaler)

   Har du någon fler?

Kundrelation

Hur gör företaget för att skapa relationer med kunder?

Har du någon idé om andra sätt som företaget kan skapa relationer med kunder?

Har du någon fler?

Hur gör företaget för att bibehålla relationen med kunder?

Har du någon idé om andra sätt som företaget kan bibehålla sin relation med kunder?

Har du någon fler?

Intäktsflöden

Vad betalar kunden för värdet företaget skapar??

Har du någon idé om hur mycket värdet som företaget skapar för kunden är värt i pengar? (för kunden)

Har du någon fler?

   Hur betalar kunderna för det värde som företaget skapar?

Har du någon idé om hur kunden skulle vilja betala företaget för det här värdet?

   Har du någon fler?

Nyckelresurser

Vilka resurser behöver företaget för att skapa värde för kunderna?

Har du någon idé om andra resurser företaget behöver för att skapa värde för kunderna? (om dem svarar abstrakt be dem specificera)

   Har du fler?

Nyckelaktiviteter

Vilka aktiviteter utför företaget för att skapa värde för kunderna?

Har du någon idé om andra aktiviteter företaget behöver göra för att skapa värde för kunderna? (om dem svarar abstrakt be dem specificera)

   Har du fler?

Nyckelpartnerskap

Vilka partners har företaget för att kunna skapa värde för kunderna?

Har du någon idé om andra partners som föreaget behöver för att skapa värde för kunderna? (om dem svarar abstrakt be dem specificera)
Har du fler?

Kundsegment

Vilka kunder skapar företaget värde för?

Vilka kunder vill företaget skapa värde för?

Har du någon idé om andra kunder som skulle kunna vara intresserade av värdet som företaget skapar? (om dem svarar abstrakt be dem specificera)

Har du någon fler?