CHALMERS

Licensing as a Potential Strategy to Commercialize Patents
: A case study of an innovative, small-sized company

Bachelor Thesis in Industrial Engineering and Management

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Sammanfattning
Globalisering i dagens samhälle gör att företag arbetar under hård konkurrens. Som en konsekvens av detta har behovet av att skapa nya produkter och tjänster ökat. I sökandet av att finna nya strategier för innovation krävs det att företag kapitaliserar på immateriella tillgångar i en högre utsträckning. Licensiering kan fungera som en källa till innovation och stimulera ytterligare produktutveckling inom innovativa företag. Trots detta är det få företag med ambition att licensiera som genomför hela licensieringsprocessen. Anledningen till det är att det kräver goda kunskaper om licensingeringsstrategier samt beslutsfattande.

Företag X är ett mindre svenskt företag som utvecklar, marknadsför samt säljer en airbaghjälm för stadscykling. Företaget grundades 2006 och har fram tills idag spenderat majoriteten av sina resurser på forskning och utveckling. Företaget utforskar nu möjligheten att kommersialisera patenten som skyddar den utvecklade teknologin.

I samband med att licensiering blir allt viktigare är syftet med den här studien att utforska licensiering som en potentiell strategi för Företag X att kommersialisera sina existerande patent. Syftet väcker följande frågeställning; Hur kan Företag X framgångsrikt licensiera sina patent?

Litteraturstudien tillhandahåller den forskning och litteratur som krävs för att ge läsaren en förståelse för licensiering och hur det kan används som en potentiell strategi för Företag X att kommersialisera sina existerande patent. Kapitlet presenterar tidigare forskning gällande licensieringserbjudanden, interna effekter av licensiering, relationer mellan licensgivare och -tagare, identifiering av licenstagare samt risker med licensiering.

Den teoretiska studien har alternerats med insamling av empirisk data genom hela projektet. Olika metoder för empirisk datainsamling har använts i denna fallstudie; intervjuer samt enkäter. Intervjuer med Företag X har genomförts för att undersöka företagets situation och ambitioner. Med hjälp av enkäter har intresset för licensiering bland ledande företag i relevanta branscher undersökts. För att stärka analysen har intervjuer med två företag, av olika storlek och med licensiering som del av sin affärsmodell, genomförts. Tidigare forskning, intervjuer och enkäter har använts för att analysera förändringarna som krävs för att inkludera licensiering i Företag X affärsmodell. Analysen har strukturerats med inspiration från det etablerade ramverket Business Model Canvas.

Sammanfattningsvis visar den här studien att det är viktigt att Företag X tillsätter en licensieringsgrupp samt att de använder sitt existerande nätverk för att nå nya kunder. De bör inleda med att licensiera ut två av företagets patent tillsammans och upprätthålla en nära relation till sina licenstagare. En lämplig licenstagare för Företag X är ett företag som licensierat förut och har ett etablerat kundnätverk. Att använda en större klumpsumma i kombination med en mindre royalty skulle vara fördelaktigt för att nå så många kunder som möjligt, få en god spridning och ökad acceptans av teknologin, samt för att skapa långsiktig ekonomisk hållbarhet. När Företag X har utvecklat ett etablerat sätt att licensiera sina patent kan de utöka verksamheten, stegvis involvera fler licenstagare och integrera licensiering som del av kärnverksamheten.

Abstract

Due to today's globalization, companies operate under a greater pressure from competition. Consequently, the need for creating new products and services at a rapid rate has grown. In the search of new strategies for innovation, the importance of capitalizing on economic returns from research and development has increased. Licensing is a strategy used as a source of innovation. However, companies aiming to license their technology rarely complete the process of finding the right licensee and closing the deal. The reason for this is that it requires a great understanding of licensing strategy and decision-making.

Company X is a small Swedish firm, which develops, markets and sells an airbag helmet used for urban cycling. The company was founded in 2006 and has until today spent most of its resources on research and development. The company is now exploring commercialization of the patents protecting their technology.

In accordance with the growing importance of licensing to stay competitive, the purpose of this thesis is to explore licensing as a potential strategy for Company X to commercialize their existing patents. The purpose gives rise to the following research question; How could Company X successfully license their patents?

The literature review contains research and literature needed to give the reader an understanding of licensing and how it could be used as a potential strategy to commercialize Company X's existing patents. This includes previous research concerning licensing offers, internal effects of licensing, relationships between the licensor and the licensee, targeting the licensee and lastly the risks with licensing.

The theoretical studies have been alternated with empirical data collection throughout the project. Different methods for empirical research have been used in this case study; interviews and questionnaires. Interviews with Company X have been conducted to fully examine the current situation and ambitions of the company. To investigate the interest of licensing Company X's patents among leading firms in relevant industries, questionnaires have been used. To strengthen the analysis, interviews with two companies of different size, that have licensing incorporated in their business models, have been carried out. Prior research, interviews and the questionnaire have been used to analyze the changes needed to incorporate licensing in Company X's business model. The analysis has been structured with inspiration from the established framework Business Model Canvas.

In conclusion, this study has shown that creating a dedicated licensing team and using the company's existing network to reach customers is important. Starting by licensing two of the company's patents together and keeping close relationships with one or a few licensees are necessary. An appropriate licensee should have licensed before and has an established customer network. Using a larger fixed fee and a small royalty rate would be advantageous to maximize market reach and technology diffusion as well as long-term economic sustainability. When Company X has developed an established licensing strategy, they can increase the scale of their licensing business, gradually reach a larger number of licensees and incorporate licensing into their business model.

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1. Introduction

As a consequence of today's globalization, firms are being exposed to more and more competition. For a firm to be able to compete, it continuously needs to offer new products and services. Hence, innovation has become increasingly important as a mean of competition (Granstrand, 2010). Today, firms search for new strategies for innovation due to shorter innovation cycles and increasing costs in research and development, R&D (Gassman & Enkel, 2004). This calls for a greater need to fully capitalize on economic returns from development and usage of intellectual assets (Organization for Economic Co-operation and Development, 2006).

Traditionally, internal research and development invents products that are manufactured and distributed by the firm itself. This leads to a high risk of intellectual property, IP, being used neither internally nor externally (West & Gallagher, 2006). Downsides of this approach include a high risk of intellectual property being put aside, waiting for further development internally, for researchers to commercialize the innovation when leaving the company, or worse – for it to spillover to other firms.

Licensing of patents can be a source of innovation. Granstrand (2010) describes several benefits arising from patents such as creating motivation for inventing and giving better possibilities for licensing, which are both becoming more important. During the past two decades, rights to patent holders have been strengthened and therefore a greater number of patents have been filed (Arora, Fosfuri & Gambardella, 2001; Organization for Economic Co-operation and Development, 2006). In addition, licensing activity has increased, which has had positive effects on the diffusion of technology.

Despite the growing importance of licensing and the opportunity for firms to fully profit from their intellectual property, a large number of potential deals are not settled (Arora, Fosfuri & Roende, 2012). After identifying a potential licensee, firms only start negotiating in a third of those cases and in less than half of those cases, negotiations are completed. A reason for this can be disagreements among stakeholders. Therefore, markets for intellectual assets and new strategic options for firms, especially innovative firms, require significant understanding of licensing strategy and decision-making.

1.1 Company X

In accordance with the growing importance of licensing, this thesis examines the possibilities of licensing, particularly a company's, hereafter referred to as Company X, patents. Company X is a small, Swedish company with 22 employees, founded in 2006, which is specialized in sporting goods. The company develops, markets and sells an airbag helmet used for urban cycling. The helmet consists of a collar in which an airbag is activated if the user makes any abnormal movements, such as falling. The first version of the helmet was created and introduced in late 2011, after seven years of research and development. After another three years, the next version was created. Company X is currently looking to develop the third generation of their innovative helmet, version 3.0 (Company X, 2015a).

Today, Company X has approximately 25.000 users (Company X, 2016), and annual revenue of approximately 14 million SEK (Company X, 2015b). The product is sold in more than 550 stores in 15 different countries and through their website (Company X, 2016). Outside the Nordic countries, sales are handled by distributors with an established position on their main market. In 2015, Company X was listed on Nasdaq First North, which according to the CEO was a natural step for the company and a strategic maneuver with the aim to gain shares on current markets as well as to penetrate new markets.

The company does not handle any production of their product, instead they rely upon a number of suppliers situated in Europe, Asia and Africa. Recently, the production was partly moved to their new external partner in Asia, which will also be involved in future development of the product (Company X, 2015b).

Company X has yet to show a positive result due to its heavy focus on research and development. However, Company X was recently awarded with € 1.37 million from a European R&D initiative, which will be used to stimulate research and development during a period of two years (Company X, 2016). Recent important events also include a planned new issue of shares, which will generate revenue of 41.8 million SEK. In addition to this, the previous, official financial ambition to reach net positive cash flow in 2017 was recently adjusted to allow for a more aggressive growth. To reach long-term financial success, it is important for Company X to fully take advantage of the patents they own the rights to, hence there are valuable considerations to be made by the company to accomplish continuous growth.

1.1.1 Company X's Patents

The patented product sold by Company X is unique, compared to other products on the market used with the same purpose of protection. The attractiveness of the innovation is proven by weekly external inquiries to incorporate the technology in other areas of application (Company X, 2015a). Licensing this technology aligns with today's growing awareness of safety within sports activities. With this great interest in developing similar technologies, the ability to protect the corporate intellectual property will be important for the company's future success.

Company X currently possesses three patent families, covering three vital parts of the product. Patents are approved in more than a dozen countries and all patent families have been applied for at the European Patent Office, EPO (Company X, 2015a). The first patent family, patent 1, was finalized in 2006 and regards a collar. This patent family has the widest geographical scope, compared to Company X's other patents. The fabric covers an airbag, which protects both neck and skull when sequentially unfolding. The approved patents constitute the vast majority of the patent family, while two are still pending.

In 2009, the second patent family, patent 2, was launched. Patent 2 protects an algorithm for management of inflation based on statistics and machine learning (Company X, 2015a). The third patent family, patent 3, was applied for in 2011 and covers the construction of two wrapped bags. The innermost has a five-finger structure and is gas proof, while the outer material is of durable fabric and shaped spherically. In addition to this, there is a fourth patent family in progress.

1.2 Purpose and Research Questions

Company X has, as of today, spent most of its efforts in research and development of their patented technology. The current focus involves commercialization of their product in order to achieve technology diffusion and reach economic sustainability. In order to maximize return on investments in R&D, licensing would be a suitable option. Licensing and allowing other companies to use Company X's technology could be ways to increase technology diffusion, create a positive cash flow and make more efficient use of existing resources within the company. Company X does not perform any licensing activities today, nor have they done in the past. With this as background, the purpose of this study is to explore licensing as a potential strategy for Company X to commercialize their existing patents. The purpose gives rise to the following research question.

1. How could Company X successfully license their patents?

Since no prior licensing activities have been undertaken, an explorative assessment of the new, value creation process is crucial. Because product commerce differs significantly from licensing, it will be interesting to examine how Company X could generate value to new customer segments through its patent portfolio. Furthermore, an examination of internal aspects, such as organizational structure and resources needed, will be interesting when examining factors for successful technology licensing. Thus, the research question is divided into two more specific sub-questions to aid in answering the main question and subsequently fulfill the purpose of the thesis. The sub-questions read as follows.

1.1 How could Company X create and capture value from licensing?

1.2 How could Company X organize for licensing?

1.3 Scope and Limitations

The time and resource constraints of this study have required a focus on the most relevant areas of licensing and a careful prioritization in order to answer the research questions. This report only considers possible licensees situated in Sweden, as Sweden is the primary market for Company X. Furthermore, Sweden has an established habit of wearing protective head gear, the main application of Company X's technology. Main focus has been to investigate licensing of technology to external actors and not vice versa, which aligns with Company X's ambition to increase their commercialization efforts.

Company X is a public company, which makes speculations and publicly sharing of ideas sensitive. Thus, there is a possibility that interviewees may not have disclosed all relevant information to fully explore how licensing could be executed successfully. In addition, Company X has had a hectic spring with several important public announcements, which is why some relevant interviewees have not been available for interviews. However, other employees were able to cover the majority of the field specific questions.

1.4 Disposition

The thesis is divided into seven chapters as illustrated in Figure 1. The introductory chapter introduces licensing of patents and its importance in today's economy. The main stakeholder of this particular thesis, Company X, and the relevance of licensing for the firm is described. The introduction culminates in a definition of purpose and research questions and ends with a discussion of research limitations.

Figure 1. Illustration of the disposition of the thesis. The thesis consists of seven chapters which are numbered according to the order pictured in the figure.

The second chapter, Literature Review, displays prior research and the theoretical foundation for the analysis. By reviewing evaluation of patent portfolios, critical factors in successful licensing business models, strategic considerations as well as licensing as an economic sustainable option, the reader is introduced to the theoretical background and earlier studies within the field.

With introduction to the field and literature, the reader is provided with a background to the research approach. The third chapter, Methodology, describes how the research questions were answered, how the literature study was conducted and why interviews with the company, interviews with two different licensors and questionnaires were appropriate choices for this particular study. In addition to this, the chapter includes a section with a discussion of the quality of the methods used.

The following chapter, Framework for Analysis, introduce the Business Model Canvas, an established model used for analysis. The Business Model Canvas has been used as a framework to map internal and external conditions before and after the introduction of a licensing business.

The fifth chapter, Research Findings, demonstrates the outcome of the empirical research. Results from interviews with Company X, interviews with Company A and B, companies currently conforming to a licensing strategy, evaluation of Company X's patents as well as a questionnaire are subjects of each section in the chapter. Combined, these sections will provide the reader with an understanding of the foundation for the analysis.

The sixth chapter, Analysis, is designed according to the framework presented in the fourth chapter. The chapter focuses on the external and internal perspectives of licensing, an analysis based on theoretical data, interviews and questionnaires. The final section of the chapter illustrates a comparison between the company's current and, potentially, future business model.

The final chapter, Conclusion, fulfills the purpose of the study by revisiting and answering the research questions. Interview and questionnaire templates are to be found in the appendices.

2. Literature Review

The following chapter presents relevant literature connected to the thesis' aim. Initially, literature regarding what value a patent can create for a licensee is presented. Further, how to target the licensees as well as the nature of relationships between the licensor and the licensee are explained. The internal effects of licensing and the risks with licensing are lastly presented.

2.1 Licensing Offer

In order to create a licensing offer, patents to be licensed need to be evaluated. The payment structure in a licensing agreement may differ depending on properties of the patent, the market conditions of the licensee as well as the needs of the licensor.

2.1.1 Patent Evaluation

The utilization of intellectual assets, such as patents, is becoming increasingly important for corporations today. Patenting is the process through which the inventor can be given society's grant of temporary monopoly when releasing the information of an invention (Macdonald, 2004). An increasingly important factor in this equation is the emergence of strategic thinking of patents. This changes how corporate actors interact, and also how they reap the benefits of their patents.

When evaluating patent portfolios, firms could look at a number of indicators. Patent counts is one of them, which historically has been one of the most common indicators of firms' innovative capabilities (Wang et al., 2010). Another indicator is family size, which relates to the value of the innovation since the procedure of applying for a patent is very costly. In evaluation, it is also common to compare patent age, backward citations, forward citations, patent scope and number of claims. According to Wang et al. (2015) these five indicators are also linked to the value of a patent.

For determining which patents to license, there are two phases to go through as a licensor. In the first phase, technology classification, potential markets for the technology should be evaluated (Santiago et al., 2015). The second phase, Technology assessment, should include an extensive analysis of potential to create value by licensing. Both steps should be performed by a group with representatives from R&D, marketing, knowledge management, and top management as well as an external patent expert.

The technology classification itself is divided into three steps. First, the breadth of potential markets for licensing should be analyzed (Santiago et al., 2015). Thereafter, limitations for licensing, strategic, legal and technical limitations are to be identified. The final step is to evaluate the potential of licensing out. Both technical and market aspects are to be considered to address the potential value. Technical aspects could be the technology's impact on the industry, as a mean to measure competition, or whether the technology is superior to possible substitutes on the market. Market aspects include both financial market potential and whether the technology is following market trends.

Patents with potential to create value will be evaluated in the second phase. For patents with high potential, a quantitative valuation should be performed (Santiago et al., 2015). Intellectual property rights with low to moderate potential should be further

analyzed through a qualitative market-based evaluation. The evaluation is carried out on the basis of the value analysis done in the first phase and gives the evaluators the possibility to weigh the two dimensions, technology and market, to be able to prioritize between licensing options.

2.1.2 Compensation in Licensing Agreements

There are several economic aspects to consider when licensing patents. Generally, licensing implies an up-front fee and thus an immediate increase of the licensor's revenues (Arora, Fosfuri & Roende, 2012). The profits gained by the licensor are generally high, while growth of market share typically is low (Granstrand, 2010). The licensee, on the other hand, will in general experience decreased profits but in turn receive increased growth, competitive power and technological knowledge (Arora, Fosfuri & Roende, 2012). The competition from the licensee will dissipate the licensor's production profits in the long run, although each deal differs when it comes to both generated value for the licensee and the degree of negative impact the agreement may result in on the licensor's product market.

In total, there are three possible payment structures when licensing. The licensor has to choose whether to use a fixed fee alone, royalties alone or a combination of both (San Martín & Saracho, 2010). Regardless of payment structure, a two to three year start-up period is to be expected before substantial benefits can be realized from licensing (Lichtenthaler, 2011; Rockett, 1990). However, Rockett (1990) emphasizes that the start-up lag in technology transfer, on average, is shorter than the time for imitation.

Fixed fee licensing consists of an up-front payment when the deal has been made. This type of contract is suitable when sales are volatile and profits are large (San Martín & Saracho, 2010). However, Mukherjee and Mukherjee (2013) argue that fixed fee contracts are most likely to be used if the licensee easily can imitate or invent around, which heavily depends on the specific technology (Rockett, 1990), or if there is a lack of information about the licensee's output.

Royalties, on the other hand, generate recurring revenues. This type of contract is most suitable when sales are high (San Martín & Saracho, 2010). For setting an appropriate royalty rate, the market conditions and the licensee's technological maturity need to be analyzed. The patentee must consider start-up lags for the licensee to reach full-scale production on the market, and strategically lower the royalty rate when needed to give the licensee a head start on its competitors (Rockett, 1990). For the licensor, there is a trade-off between the benefits of strengthening the licensee and costs of reducing its own profits, thus lowering the royalty rate is a less attractive side of licensing. Instead of lowering the royalty rate, licensing early can be an option to increase the chosen licensee's head start over its competitors.

One way to set the royalty rate is to divide the process of determination into two steps. Firstly, the choice between whether to use a royalty as a percentage of operating profit or revenues, or as a fixed sum per unit sold, has to be made (Johnson, 2010). A fixed sum per unit sold is most often used when the licensed patent is a component in a larger product. Royalties as a percentage of operating profits make the most sense, according to Johnson (2010), meaning that a pre-determined percentage of the profits will be payed to the licensor. Royalties based on revenues are used in

cases where it is hard to find which part of the final product that includes the immaterial right.

Secondly, the licensor and the licensee should determine an appropriate royalty rate. There are three factors to bear in mind when doing so (Johnson, 2010). One is the uniqueness and the competitive advantage of the licensed product, in terms of patent scope and remaining time of protection. Another factor is the degree of complexity in sale and degree of customization. The last factor to consider is the market environment where the licensee will commercialize the product, such as market size, growth and competition.

The licensor may enjoy several benefits when licensing, not solely financial gains. In case the licensee is a well-known firm, the licensor may improve its credibility of the product (Johnson, 2010). In some cases, the licensee contributes with improvements of the product itself. Such factors should also be taken into account when setting royalty rates.

Apart from choosing payment structure, the terms for licensing are also important. Licensing can be done in several different ways characterized by the terms both the licensor and the licensee are restricted by (Granstrand, 2010). Some of the main different license types depend on if the license will be exclusive for one licensee or available for anyone suitable. Another type of licenses depend on the ability for the licensor to use any further innovations made by the licensee or if licenses are traded for other licenses. Furthermore, a license can include a package of patents and intellectual property rights, referred to as a package license.

When constructing an offer for a potential licensee with superior bargaining power, there are ways that might decrease the licensee's influence on the terms of the licensing agreement. According to Arora, Fosfuri and Gambardella (2001), larger firms have greater bargaining power than smaller firms. Rockett (1990) suggests that the incumbent firm price discriminate and offer exclusive licenses. By making a take-it-or-leave-it offer, the licensor may discard the bargaining ability of the licensee. In addition to this, entrants may be played off against each other to raise the royalty fee.

2.2 Finding a Proper Licensee

There is a significant difference between identifying customers in traditional markets and in markets for technology, where intellectual property may be traded. A licensing offer includes close co-operation, which is why evaluation and comparison between potential licensees are needed. In addition to this, business-to-customer marketing is often used on product markets, while business-to-business marketing is needed on markets for licenses.

2.2.1 Properties that Distinguish a Suitable Licensee

Licensing is not mutually exclusive with self-production, but rather complementary. According to Arora, Fosfuri and Gambardella (2001), the emerging markets for technology does not mean that companies should adhere to the risky strategy of becoming pure licensing organizations. By production in-house, a firm may assess the value of technology more accurately as well as identify bottlenecks in technology transfer. In addition to this, according to Organization for Economic Co-operation and Development (2006), investments in R&D and intellectual assets will affect investor

valuations and influence the ability to attract funding to a higher extent compared to investments in tangible assets.

Licensing functions as a mean to choose what competitors to face when a patent expires. By categorizing possible entrants into “weak” and “strong” competitors, a firm may identify which companies to preferably deter from market entry (Rockett, 1990). Rockett analyses company properties in terms of size and marginal costs and assumes that strong competitors would win the racing game and enter the market prior to the weak competitors, given that no licensing activities have been undertaken.

The patentee-monopolist may choose to license to one or several firms eager to enter the market, and the former is to prefer when choosing competition. Rockett (1990) explains how the order in the queue of entrants may be changed by the incumbent firm when encouraging a weaker firm to enter the market as a licensee. Thus, the entry of a stronger firm can be deterred.

A weaker entrant, an existing company, is preferred as licensee to remain in a superior market position as a licensor after the patent expiration. Companies prefer to split the market with a weaker entrant, rather than compete against a larger number of more aggressive firms (Rockett, 1990). This will lead to a prolonged dominant position for the incumbent firm after the patent expiration.

Although a weaker firm in terms of size is to prefer, a suitable licensee must be encouraged to generate the desired capacity increase. Svensson (2002) shows that 90% of all patents commercialized within Swedish firms are sold or licensed to existing firms, while solely 10% are commercialized in new start-ups. Arora, Fosfuri and Gambardella (2001) argue that well-capitalized, large companies with extensive investments in complementary assets experience greater incentives to license in, since returns on investments in fixed assets depend on the volume of output and require continuous R&D, or technology from a licensor, to be maximized.

According to Rockett (1990), the licensee must be strong enough to deter further entry. Increased capacity, such as increased market presence, through licensing must be more effective when it comes to preventing entry, when compared to building own capacity as incumbent firm. Furthermore, to ensure viability and future payments it is important to study potential licensees thoroughly (Neumayer, 2013). The licensee needs to have enough technological expertise, marketing abilities, and sales channels to make the deal mutually beneficial. The licensee also needs to be capable of carrying out the financial commitments included in any deal.

Markets for technology may lower entry barriers for new competitors. When actors become specialized technology suppliers, new competitors, without prior experience or expertise in the technology, are facilitated in entering the market (Arora, Fosfuri & Gambardella, 2001; West & Gallagher, 2006). Competition increase, and product life cycles are compressed, which diminishes the importance of technology as a competitive advantage. According to Arora, Fosfuri and Gambardella (2001), this compels incumbent firms to reconstruct their business models.

Choosing a licensee with prior experience in licensing will increase the probability of successful technology transfer. The “not invented here syndrome” is explained by

Arora, Fosfuri and Gambardella (2001), and West and Gallagher (2006), and addresses possible issues of pride in the achievements of internal researchers. An organization committed to manufacture and commercialize innovations from R&D creates incentives for internal researchers, but may also be costly due to the wide diffusion of R&D. Arora, Fosfuri and Gambardella (2001) argue that the risk of external ideas and innovations to be down prioritized, because of devotion to internal accomplishments, are lower when the licensee has proven to be willing to incorporate external innovations into its business.

Small firms, unable to produce and efficiently commercialize, should consider licensing technology to local firms with geographic market knowledge as source of competitive advantage. Companies with expertise in local geographic markets may focus on developing markets for products, and translation of customer needs, by investing in close customer relationships (Arora, Fosfuri & Gambardella, 2001). Customer needs are often difficult to articulate and transfer to producing firms, but may in this way be met in a more efficient manner.

2.2.2 Targeting the Licensee

To succeed in maximizing value through licensing a company needs to actively search for licensing opportunities (Neumayer, 2013; Lachman & Samet, 2005). However, it is hard to identify every possible licensing opportunity, and therefore it is important to get the word going and create a buzz about the benefits available through licensing of this new technology (Neumayer, 2013). This can be done in many ways, for example by press releases or by referencing earlier licensees.

Licensing deals differ from more common types of business-to-business deals in many ways since intangible assets, rights and knowledge are being traded. With patents and new technology, the possibilities and applicable areas might not be directly visible. When finding a potential licensee, the licensor therefore needs to clarify the licensee's possible benefits of licensing in, to attract customers. One of the key aspects in being a successful licensor lies in the ability to identify and attract the right customer (Neumayer, 2013; Lachman & Samet, 2005). To maximize the value of a company's intellectual property, Lachman and Samet (2005) mean that firms either need to fully engage itself to construct a well-organized licensing process or need to hire external partners to handle the licensing process.

Customizing the offer and clarifying possible benefits gives the licensee incentives to invest in the partnership and will ensure future need of resources and viability. According to Lachman and Samet (2005) critical components that should be presented is the IP portfolio, terms and rules of what is permitted, things that are easily misinterpreted, a short analysis of commercial possibilities for the licensee, as well as any other information that might motivate the licensee to further discuss a possible deal.

Examining possible synergies and benefits for both parties on beforehand can help speed up the sales cycle and increase the possibility of successful licensing (Neumayer, 2013; Lachman & Samet, 2005). Researching a partner before the initial contact would enable customization of the offer and a suitable demonstration of early benefits of licensing. This will ensure that the company partners up with the best candidate and that optimal benefits are created for both parties. Demonstrating

possible benefits early, will also help the company to get past initial screenings. Neumayer explains (2013) how identifying a potential licensee and convincing them to license will require detailed knowledge of the licensee's products and technology as well as the industry, markets and the business environment it operates in.

Managing licensing deals is a complex process, partly because of the often complex technology and know-how being transferred (Lachman & Samet, 2005). This requires real time access and firms therefore need to incorporate a well-structured communication system, both internally and with the licensees. Maintaining contact with the licensee, checking up on milestones, if royalty payments are being properly made, or if the licensee is in need of any additional assistance, can make it possible to identify other opportunities and possibilities of increased, mutual benefits (Neumayer, 2013). It is also important to understand that licensing deals are made between people. Lachman and Samet (2005) therefore mean that firms should target key decision makers in the partner company for a faster sale cycle and to increase the possibility of a deal.

2.3 Relationship with the Licensee

When entering a licensing agreement there is always a possibility of engaging in a relationship with the licensee in a way that goes beyond the single act of transferring technology from one company to the other. This type of partnership can incorporate sharing of resources or assets related to any part of the value chain, for example supply, manufacturing and marketing (Hagedoorn, Lorenz-Orlean & van Kranenburg, 2008). There is evidence that partnerships are more widespread in high tech industries, as a result of how these relationships can enable companies to learn with and from their partners in a more flexible setting.

The higher the level of technological sophistication of industries, in terms of R&D intensity, the more companies operating in these industries prefer partnership-embedded licensing agreement (Hagedoorn, Lorenz-Orlean & van Kranenburg, 2008). However, Arora and Fosfuri (2003) concludes that, in markets with little product differentiation, companies have a higher preference for licensing and that in markets where product differentiation is vital for competition the preference for licensing is significantly less. This concludes that a company with technologically advanced products might prefer a partnership-embedded licensing agreement, but this alone does not mean that the initial option of licensing has or should be made.

Partnerships enable companies to monitor and control the transfer of their technology in a licensing collaboration. In addition to this, partnerships also allow partners to build up a trusted relationship where confidentiality among partners favors the transfer of technology (Hagedoorn, Lorenz-Orlean & van Kranenburg, 2008). More companies that operate in an industry environment, where secrecy is an important aspect of the protection of their innovations and technology, the more they prefer to enclose their technology transfer in a partnership rather than arrange a standard licensing contract .Thus, companies can be proved to engage in partnership when wanting to communicate additional tacit knowledge in a broader established licensing agreement.

In the context of a licensing agreement, the asymmetry in size between companies generate higher risks to the smaller firm due to the dominance larger firms assert in

the bargaining leading up to a licensing agreement (Hagedoorn, Lorenz-Orlean & van Kranenburg, 2008). The larger the size differentials between partners, when licensors are smaller than their licensees, the higher the preference is to engage in a wider partnership that exceed the transfer of technology.

Trademark licensing has emerged to an acceptable type of licensing in where the owner of the trademark (licensor) remains in control of the essence and quality of the product or services sold under the trademark (WIPO, 2007). Trademark licensing is defined as the situation in where licensor grants permission to an external actor, the licensee, to use that trademark on beforehand-agreed terms and conditions. Thus, trademark licensing can generate similar benefits that licensing in general do, like exploring new markets and benefiting from another company's distribution and sales resources. Although in this situation the focus is to extend the trademark and therefore not on reaping the rewards of entering new markets with a new patented technology.

In relationships with potential licensees there is always the question of how much innovation that should be shared. On organizational level, shared innovation will not be less beneficial for the innovator by sharing it. On the contrary, as a customer you may enjoy benefits from sharing innovations with a vendor, in terms of improved products corresponding to your particular needs (West & Gallagher, 2006; Mariani & Romanelli, 2007; Schettino et al., 2013). If an innovation is assumed to grow the market, spillovers to direct competitors, “co-opetition”, will be beneficial, provided that the predicted increase in market share is sufficiently attractive to the innovator.

2.3.1 Open Innovation

Open strategies of innovation optimize the innovation capabilities of the firm. Through open innovation, firms may systematically motivate and profit from a wide range of internal and external knowledge sources (West & Gallagher, 2006). Capabilities of the firm may be used in new and more creative ways by integrating explored innovations, from customers, rivals, academia or other industries, with company specific resources.

Small enterprises may benefit from open innovation to a greater extent than large firms. A business that comprises only a few partners or where the workforce lacks diversity misses out on creativity and innovation (Fallis, 2013). In business or projects like these, an open innovation approach is a great option, where external input enhances the effectiveness of the organization and its projects.

An option for collaborative innovation is through co-patenting, a strategy for firms developing technology together to share the outcome. A co-patent is a patent owned by more than one assignee (Belderbos et al., 2014). Thus, all owners have equal right to exploit the invention. Briggs and Wade (2014) argue that a shared ownership lowers the value by making the rights less exclusive, while other research shows that teamwork contribute to higher quality patents, which could increase their value (Mariani & Romanelli, 2007; Schettino et al., 2013). Through greater equity between partners, in a co-ownership contract and R&D alliance, the likelihood of successful innovations, as an outcome, is positively affected (Xu et al., 2014). This is achieved by the lowering of incentives to compete with the partner firm, since the situation encourages efficient collaboration.

There are three main challenges experienced in management of open innovation; maximization, incorporation and motivation of intellectual property. According to West and Gallagher (2006), maximization of return on investments in intellectual property is achieved through licensing of patent portfolios, patent pooling or making the technology available, without monetary exchange, to increase the demand for other products on the market.

Combining maximization tactics results in a successful use of intellectual property. Examples of strategies are illustrated by West & Gallagher (2006) and include GSM, which manages competition through its European patent pool. By adding to the patent pool, firms may access intellectual property rights of GSM, which gives the contributors a competitive advantage compared to firms in other geographic areas.

In employing a strategy of open innovation, incorporation of innovations into the existing organization is required. First, there is a need to identify suitable sources of innovation, which requires scanning of the market (West & Gallagher, 2006). Thereafter, the innovative capabilities need to be properly assessed, incorporated into and accepted in the internal environment of the firm. This requires an absorptive capacity, which can be gained through networks and alliances, and a political willingness to accept external ideas.

Motivating external contributors and securing the supply of innovative processes is a complex challenge in management of open innovation. There is a paradox of stimulating external innovation since novel intellectual property will be available for everyone, even competitors (West & Gallagher, 2006). Despite this fact, there has yet never been a shortage of external innovation. West and Gallagher (2006) question what would happen if everyone relied upon external sources of innovation. Government and research sponsors would probably not have incentives to assist specific firms in financing their research and development processes if the result may benefit all parties on the market.

2.4 Internal Effects of Licensing

Licensing can contribute to a company's economic sustainability by feeding R&D and decrease the need for external capital. Moreover, internal effects from licensing regard the organizational structure of the licensor needed to deliver the value of a licensing offer.

2.4.1 How Licensing Contribute to Economic Sustainability

Today, firms in general view their intellectual property rights or patents mainly as means of protection and additional revenue generation due to temporary monopoly (Leone & Oriani, 2009; Macdonald, 2004). Although this competitive advantage generates monetary value, the full potential of the patents is not necessarily exploited. The use of various strategies to fully employ existing assets and resources is described by the World Conservation Union (2006) as economic sustainability.

When licensing, a firm may receive a large amount of funding which may solve liquidity issues and align with a short-term strategy. Leone and Oriani (2009) describe that smaller firms and start-ups generally prefer an upfront payment rather than royalty rate as this meets their need of initial capital. Licensing may, according to Clausen et al. (2011), on the contrary be an economically sustainable option since

firms who have innovated once have a higher probability of innovating again. Thus, continuous innovation and licensing of patents are viable in the long-term and complementary strategies to fully exploit the value of intellectual assets.

Seeking external funding may be costly, extend the payback time for the investment and is not feasible in the long run. Issues in funding involve information asymmetry, where the financiers generally lack information about the technology and its potential (Leone & Oriani, 2009). In addition to this, many firms experience difficulties in translating their complex technology to investors. These factors contribute to high transaction costs in agreements with financiers. According to Leone and Oriani (2009), financially constrained companies often experience great difficulties in attracting external financial resources. For small, high-tech companies, this problem is significant, when compared to larger firms. The majority of firms is therefore forced to find funding for their internal R&D development within their own business.

Incorporating licensing as part of the core business ensures future viability. Patents provide public disclosure of new technology, which improves market efficiency (Organization for Economic Co-operation and Development, 2006). This increases chances of attracting both investors and licensees, as well as reduces cost of capital. More importantly, patents and licensing allow for companies to realize the value from their intellectual properties while allowing for diffusion of technology, which result in a more efficient allocation of resources throughout the economic system.

2.4.2 Organizational Structure

Resources and activities need to be organized effectively to handle licensing. There are three organizational approaches that contribute to successful licensing, namely structural organizing, project organizing, and participatory organizing (Lichtenthaler, Holger & Conley, 2011). Firms receiving the most revenue and non-monetary benefits from licensing rely on a combination of these three organizational approaches, often with an emphasis on project organizing. Structural organizations set up a central unit of dedicated licensing employees to coordinate licensing activities. These employees often serve as a contact for all issues related to licensing and may use external network contacts to identify licensing opportunities.

Project organizations have a project team working with identifying and managing licensing deals (Lichtenthaler, Holger & Conley, 2011). The project teams are often set up to handle and coordinate activities related to separate deals. A licensing team is needed to drive the licensing process and to coordinate the work (Neumayer, 2013). Even in smaller companies with a one-person team, that one person can make sure the work is handled correctly and communicates the importance of licensing within the company.

Participatory organizations have a widespread support for licensing and get knowledge and input throughout the organization (Lichtenthaler, Holger & Conley, 2011). To establish sufficient support within the firm, participatory organizations often have executive champions that promote licensing. This is needed to overcome any reluctance towards licensing among employees, ensure proper budgeting and widespread contributions.

To maximize both monetary and non-monetary benefits from licensing, a company can rely on all three organizational approaches, and need to go through several implementation steps (Lichtenthaler, Holger & Conley, 2011). Initially companies need to formulate and communicate the licensing strategy. This will lay the foundation for subsequent implementation. Generally, most managers have a well-formulated strategy for implementing an active licensing program. However, data shows that, although the strategy provides a good basis, the strategy on its own do not ensure successful execution.

Furthermore, to indicate the emphasis of licensing, ensuring it is taken seriously and actually being implemented, companies need to ensure executive support (Lichtenthaler, 2011; Neumeyer, 2005). This prevents the licensing activities from becoming isolated, not taken seriously and getting down prioritized. Moreover, assigning dedicated employees to licensing will help coordinate and manage licensing deals as well as signal the strategic importance.

Additionally, by initiating identification projects profitable opportunities that may otherwise be missed can be identified to ensure new business. Companies need to establish implementation projects to handle negotiation and technology transfer in an orderly manner to ensure a favorable deal and successful technology transfer. Lastly companies need to transform the corporate culture so that licensing gets a widespread support throughout the organization using all know-how and critical information available.

Licensing include many managerial challenges (Lichtenthaler, Holger & Conley, 2011; Organization for Economic Co-operation and Development, 2006). Therefore, managers need to put sufficient emphasis on implementation and not skip even one of the six steps. Skipping one step easily leads to failure, however achieving all leads to maximized benefits. The firms achieving all six steps are characterized by a high return on licensing, both monetary and non-monetary.

2.5 Risks with Licensing

Small firms tend to commercialize their patent portfolio to a higher extent than large corporations. Svensson (2002) followed individual, Swedish patents' commercialization process and shows that the commercialization rate is higher than 25% in smaller firms. These actors tend to regard patents as an opportunity to create a new product, and open up a new market, instead of a defense in terms of "shadow patents", which commonly is the case among larger companies.

The optimistic mindset among small firms and entrepreneurs may explain the favorable estimation of licensing potential, and thus the higher commercial rate compared to large and medium-sized firms. The success rate is lower for smaller actors compares to large and medium-sized companies (Svensson, 2002). This results in a higher probability of commercialization among smaller actors but it does not necessarily mean greater chances of a viable prospect for licensing deals.

Being a smaller actor may be unfavorable in licensing agreements. Not only due to the less powerful bargaining position when settling the licensing agreement (Arora, Fosfuri & Gambardella, 2001), but also because of a smaller chance of being discovered in the licensee's efforts to scan the market of potential licensors (West & Gallagher, 2006).

Excluding manufacturing from the licensing agreement results in a less innovative internal environment for the licensor. Investing in complementary assets, to manufacture and market products developed through in-house R&D, will increase the size of the firm (Arora, Fosfuri & Gambardella, 2001). In turn, this will change the speed of information flows within the organization, which reduces the innovative potential of the company.

Despite Sweden's top ranking when it comes to number of granted patents per capita, commercialization of patents does not work efficiently in the country. According to Svensson (2002), firms must almost always finance the commercialization themselves and the majority of licensors are obliged to manufacturing of the licensed product. Svensson (2002) also identifies issues such as prioritization of other inventions, patents not ready for market yet, high taxes, bureaucracy and rigid rules. In addition to this, Rockett (1990) shows that there may be issues of the incumbent firm not valuing long-term profits high enough to justify the short-run sacrifices caused by licensing.

3. Methodology

The following chapter will explain how the study was performed and why different methods were chosen. Initially, an overview and a more complete picture of the study will be discussed, followed by each part of the study. Finally, the quality of the study will be assessed by discussing the reliability and validity of the study.

3.1 Research Approach

The study was initiated with a wide scope in an explorative manner, in order to gain as much knowledge as possible within the field of licensing relevant to Company X's situation. The first step in qualitative research is, according to Bryman and Bell (2007), to formulate general research questions. Therefore, the study was initiated by a discussion within the group and with the cooperating company to make sure the area being studied was relevant and rewarding for both parties. After the first interviews with Company X, the purpose and the research questions were revisited and adjusted according to the findings and interpretations. This aligns with the process described by Bryman and Bell (2007), where a tighter specification of the research questions are made after the initial step of data collection. This enabled a sharpening of focus on areas relevant for both parties.

In parallel with the interview process, a literature study was conducted on prior studies and scientific theory. This contributed to a wider understanding and gradually framed a deeper comprehension in relevant fields. Likewise, background data and internal corporate documents were studied to gain further understanding and ensuring reliability through triangulation. Triangulation is an approach where results from several sources of data are used to strengthen the confidence in findings (Bryman & Bell, 2007). The data collection also included a questionnaire and interview with licensors, which were performed in order to fill possible information gaps and seek confirmation on application of prior research. This corresponds to Ejvegård's (2003) approach that when studying something with little, direct evidence for an analysis or a conclusion, different methods should be used.

For studying Company X's current situation with an exploratory approach, a case study research design was suitable. Case studies are empirical research used when investigating contemporary phenomenon (Yin, 2003). An advantage of using a case study design is the effect of spurring ideas, which case studies often have, thereby aiding the ability to explore further. As the study include questions influenced by uncertainty and ambiguity, the use of multiple sources and triangulation was needed to improve analysis and reliability of conclusions. This connects with Yin (2003) statement, that one of the strengths of case study data collection is the ability to combine multiple sources. A combination of sources could therefore be used, providing a mix of qualitative and quantitative data. Furthermore, qualitative data is necessary when studying something indistinct or with no single truth (Wallén, 1996). Thus, a mix of qualitative and quantitative sources created a more comprehensive understanding of the actions, and reasons for those actions, Company X need to take in order to successfully license technology. Following sections of this chapter will explain each part of the study more comprehensively, ending with a discussion of its strengths and weaknesses.

3.2 Literature Study

The process of searching for previous research of licensing was conducted as an iterative process. Initially, the aim was to create an overview of licensing and a broader understanding of the subject. Later on, the literature study was aimed at more specific fields of licensing. Mainly scientific articles, received through searches via Chalmers Library's search tool, Summon, Google Scholar or via researchers at the division Entrepreneurship and Strategy, were used in the literature review. Keywords used in the searches were related to licensing in general. Moreover, a commonly used framework for evaluating business models was studied to create a framework for analysis.

In addition to literature exploration via databases, the use of references from prior research is important in a literature study (Ejvegård, 2003). This approach was used during the thesis process and enabled the authors to find contributions central to the field. All literature was chosen with regard to its credibility. When an interesting article was found, its suitability was judged by first reading the abstract and conclusion. To be able to only incorporate significant facts to the literature review, all chosen articles were summarized and discussed during literature seminars before being included in the literature review. Furthermore, supervisors and field experts have looked over the references used throughout the literature study. Several drafts have been sent back and forth to discuss the suitability and interpretations of the research references chosen.

3.3 Data Collection

In order to fulfill the explorative purpose of the study and align the data collection to the research questions, three different methods for empirical research have been used; internal interviews, with Company X, external interviews, with Company A and Company B, as well as questionnaires. These methods are all sources of primary data and contribute to the qualitative research of the thesis (Christensen et al., 2010). By using primary data, the information is ensured to be actual and the data collection may be designed to correspond to the specific research questions. The linkages between the research questions and the sources of information are illustrated in Table 1.

Table 1. Illustration of how different data collection methods are linked to the research questions of the thesis. The majority of the interviews with Company X were conducted face-to-face, at their office during a full-day visit. Due to the geographical distance to the other interviewees, as well as the recipients of the questionnaire, video conversation, telephone interviews or email were used.

ID	Date	Communication channel	Position	How should Company X successfully license their patents?	How could Company X create and capture value from licensing?	How could Company X organize for licensing?
Interviews with Company X and its partner						
1	2016-01-27	Google Hangouts	CEO	x		
2	2016-02-16	In person	CEO	x	x	
3	2016-02-16	In person	Marketing Manager	x		x
4	2016-02-16	In person	Patent Lawyer, Company C		x	
5	2016-02-16	In person	Director Product Safety and Regulatory	x		
6	2016-04-21	Google Hangouts	CEO	x		x
7	2016-04-27	Telephone	Marketing Manager			x
Interviews with licensors						
8	2016-04-26	Telephone	CEO, Company A	x		x
9	2016-04-26	Telephone	Director of Patent Unit, Company B	x		x
Questionnaire						
10	2016-04-21	Email	All respondents		x	
11	2016-04-29	Telephone	Respondent in Automotive		x	

Combining deep interviews with Company X and interviews with a small and a large licensor was a procedure chosen to ensure triangulation. In using different sources of data, the results could be compared and strengthened. During the interviews, critical organizational aspects were discovered to be similar between Company A and

Company B, albeit they are very different in terms of size. Additionally, the specific organizational setting was also found in prior research as a success factor in licensing. By using triangulation in this manner, the analysis and the conclusions of this thesis could be strengthened.

The internal perspective, gained from interviews, was complemented with an external perspective, from questionnaires. In this manner, creation and capturing of value as well as organizational aspects of licensing were identified.

3.3.1 Interviews with Company X

Seven semi-structured interviews with Company X were conducted within the scope of this thesis. Bryman and Bell (2007) emphasizes the suitability of reflecting the interviewee's perspective in qualitative research, why semi-structured interviews where the interviewer followed a flexible interview guide instead of a fixed interview template were used. A semi-structured format was used since it allows for follow-up questions if needed, as the intention was to fully understand the perspective of the interviewee. The majority of the interviews lasted for an hour, but the length varied between 30-75 minutes. The sample was selected through inquiry (Christensen et al., 2010), the CEO of Company X was the contact person deciding what employees and partners to interview. In this manner, three employees of Company X were interviewed and one employee from a partner consulting firm in intellectual property. The interviews were carried out starting with a wider scope with room for more descriptive answers that later on was narrowed to more precise interview questions.

The interview templates (see Appendix I) were formed with regard to the formal position of the interviewee and the research process, but mainly with regard to the research questions to be answered. According to Bryman and Bell (2007), formulating questions related to the research questions and using a comprehensible language are key elements in designing an interview template. All interviewees received the questionnaire template in advance, to increase the quality of the interview, and questions or terms were clarified or further described if needed. Questions may be standardized or non-standardized, meaning that they may or may not be included in all interviews performed (Ejvegård, 2003). The first interview with the CEO, characterized by ID 1 in Table 1, was carried out with questions applying to many aspects of the current business model and the ambitions of technology diffusion through licensing. The intention was to in an early stage deepen the knowledge of the firm's current situation and ambitions.

According to Bryman and Bell (2007), there are nine types of interview questions; introducing questions, follow-up questions, probing questions, specifying questions, direct questions, indirect questions, structuring questions, silence and interpreting questions. During the interviews conducted within the frame of this case study, introducing questions were used in all cases. They allow for the interviewee to describe a scenario or an experience, which was appropriate for the explorative purpose of the study. Follow-up questions were used to encourage the interviewee to further portray her point of view, which was helpful in understanding the complex technology or possible risks of licensing for instance. Indirect questions were applied to get an understanding of the individual's perception by asking questions related to the company and its employees in general.

Questions may be open-ended or closed-ended, which means that they may either let the interviewee speak freely, or limit her answer to a number of alternatives (Ejvegård, 2003). In order to get a descriptive picture of licensing of Company X's patents, open-ended questions were used throughout the interview process, why interview questions such as direct questions and interpreting questions were avoided (Bryman & Bell, 2007).

The framework Business Model Canvas (Osterwalder & Pigneur, 2009) has been used throughout the study in order to map the current business model, how value is created and captured and how the company organizes accordingly, and a future business model for licensing. The Business Model Canvas, further explained in Chapter 4, has been used when designing the interview templates. In this manner, the data collection was guaranteed to comprise the entire business model of Company X. Each interview did not address all elements in the Business Model Canvas, however, the entire business model was covered by summarizing all interviews.

In addition to questions regarding elements in the theoretical framework, the interviews aimed to find suggestions for markets best suited for licensing of Company X's patents and potential licensees. The response created a foundation for the classifications and selections made in the interviews with licensors, Company A and Company B, as well as in the questionnaire.

3.3.1.1 Standardized Interviews

The following four interviews, ID 2-5, with three employees and the patent lawyer, did include a number of standardized, introductory questions to fully grasp the opportunities and issues licensing would cause from the perspective of different departments of the company. Interviews with standardized questions mean that all interviewees where asked the same questions, in terms of content and order, which were later on compared to analyze the differences (Ejvegård, 2003). The interviews were all structured according to five sections; introduction to the thesis and field to be studied, characteristics of Company X, patent portfolio, licensing and closing questions. Each category was designed to entail broad questions in the beginning and sequentially narrow the questions.

The first section introduced the focus and scope of the study. It also included a possibility for the interviewee to be anonymous. The second section was targeting the vision, business strategy and competitive edge of Company X. Patent portfolio and opinions regarding the patent system were discussed in the third section. By not mentioning patents or licensing until later on in the interview, the answers of the first two sections were not influenced by these subjects. The fourth section regarded licensing, its possibilities, threats and its impact on Company X's current business model. In the final section, the interviewer asked for a possibility to contact the interviewee during the research process if further questions would arise.

3.3.1.2 Non-standardized Interviews

Remaining interviews, ID 6-7, were completely non-standardized, which means that they were specific to the professional field of the interviewee and designed to complement prior data collection. According to Ejvegård (2003), non-standardized interview templates do align with an explorative purpose, why this format was to prefer.

The questions were adapted to each individual, and to a certain extent also to the dynamics of the interview. Since the interview process was executed iteratively, gaps in the business model could be identified and upcoming interviews could be adjusted to fully cover the situation of Company X. Questions regarding economic sustainability were asked in relation to the expressed ambition to achieve positive net cash flow in 2017, although this goal was officially changed during the time period for this study, and internal distribution of revenue streams.

3.3.1.3 Interview Setting and Analysis

The interview setting was designed to allow for an objective interpretation of the data. Background and political preferences are examples of personal properties of the interviewer that may influence the interview and its analysis (Christensen et al., 2010). During the majority of the interviews, especially the first five interviews that aimed to contribute to thorough knowledge, all authors were present. In this manner, different perceptions of the outcome could be discussed immediately and a balanced interpretation of the interviewee's answers could be accomplished. Roles and guidelines for follow-up questions were made clear within the group prior to the interview and also explained to the interviewee. The interviews took place in person, via online video communication or as a phone call.

To fully explore the firm's sensitive resource of intellectual properties, a trustworthy context was created during the interview sessions. In order to allow the interviewee to open up and speak without restriction, confidentiality may be offered (Ejvegård, 2003). Since the thesis is realized in conjunction with the anonymous Company X, all interviews were carried out with confidentiality upon request. Discussions regarding intellectual property in general, and potential licensing deals in particular, are sensitive subjects to most firms, why this choice of setting facilitated data collection.

The approach for the analysis of the interviews was chosen with respect to the explorative purpose of the study. When aiming to gain knowledge regarding the full picture, interviews should be qualitatively analyzed and summarized (Eriksson & Wiedersheim-Paul, 2008). The outcome from the data collection was discussed and similarities between interview results were in this way identified.

Since the framework for analysis aim to encompass the entire business model and corporate-wide changes needed to create a new offering, a joint summarization of interviews and framework mapping methods were chosen. By revisiting the notes from the interviews right after each interview, fresh ideas and thoughts were shared immediately and not forgotten (Ejvegård, 2003). In addition to this, the results from the interviews were summarized and mapped according to the elements of two Business Model Canvases; both the one corresponding to the current business model and one representing a potential future business model. By using this framework, it was, during the iterative interview process, obvious which parts of the business models that were lacking information and what elements that needed focus during the following interviews.

After the results from all interviews were mapped, according to the elements of the Business Model Canvases, a written draft was created. In summarizing the interviews further, this time in running text instead of in bullet points, it was made even clearer

what parts that were not fully understood or that needed to be complemented. The interviewees were contacted when needed to further clarify their answers from previous interviews and the draft evolved continuously to fully describe the perceptions of Company X.

Using the canvases, created during the process of summarizing the interviews, facilitated the analysis. Each element of the canvases could be compared and analyzed with prior research, presented in Chapter 2, and with information gathered through interviews with licensors, Company A and Company B, as well as with the results from a questionnaire.

3.3.2 Interviews with Licensors

The interviews with licensors were conducted in a descriptive manner with open-ended questions. It became an important step in exemplifying how other companies have licensed their patents. Since the approach of the study was explorative, the purpose of these interviews was to complement the information the literature provided in this thesis. This was accomplished by exploring what different experiences other companies have gathered during their own licensing processes. The interviews were semi-structured, which supported the explorative approach of the study by giving room for suitable follow-up questions (Bryman & Bell, 2007).

The interviews with licensors helped depict and exemplify what processes that can be essential within the boundaries of Company X. Since Company X has not licensed before, this helped to better visualize what could happen within an organization when licensing. With the thesis approach being qualitative, and bearing the limited time frame in mind, two companies were chosen to participate.

The two companies chosen were Company A and Company B. Company A is a small company that can help visualize the situation in a small and innovative company, which are similar properties to those of Company X. Company B is a large and international company with a long history of both successful and unsuccessful licensing, which could contribute to a more thorough analysis of successful licensing. The combination of these companies and their different characteristics, for instance in terms of size, was something that contributed to a diverse view of licensing in different companies, despite the small sample. Triangulating the different answers attained in the interviews helped develop an understanding of the complex social reality that can be in corporations (Bryman & Bell, 2007).

3.3.3 Questionnaire

While other parts of the study provided insight about the internal parts of licensing, mainly from the licensor's perspective, an additional source was needed to add information from the external perspective. To examine licensee interest, and to gain a thorough understanding of the external aspects of licensing, a questionnaire was conducted and sent to possible future licensees. As this part of the study was aimed to provide more specific information, a questionnaire with narrower questions than in the interviews was appropriate. As all participants of the questionnaire were asked the same, close-ended, questions, a comparison between potential licensees was possible. Because of the speculative nature of many questions in the questionnaire, the possibility to affect the respondent wanted to be minimized. As a questionnaire

counteracts the ability to affect the respondent's answers, it was regarded well suited (Christensen et al., 2010).

The questionnaire was sent to firms within industries where the technology can be applied. Industries were picked using information and ideas provided by employees of Company X as well as from industries identified through similar needs of protection. Furthermore, industries were categorized by the amount of reengineering needed before being applicable. The categories were specified as directly applicable, minor reengineering, and major reengineering. As all possible applications imaginable are hard to assess, it is possible that some potentially relevant industries where left out. However, as the purpose of this thesis was explorative and not to recommend a specific licensee, the industries chosen are considered satisfactory.

The industries selected were technology of winter sport protection, outdoor sportswear, riding gear, automotive and medicine. The winter sport protection industry is defined by the actors providing protective gear used for downhill skiing. The market for outdoor sportswear is defined by a marketplace for clothes, and especially jackets, used for outdoor activities. Protective gear used when riding defines the riding gear industry. The automotive industry is defined as technology or parts for vehicles. The medicine technology industry is defined as the market for equipment and technology for health care.

The firms within each industry were selected on size and market position. The largest firms are considered to dictate the competitive conditions within their markets. To increase the reliability, the person contacted in each firm was selected based on their perceived ability to answer the questionnaire (Eriksson & Wiedersheim-Paul, 2008). Hence, in smaller firms, the questionnaire was sent to the CEO, and in larger firms to an employee with more focus on product development, like a head of R&D.

To create incentives to fill out the questionnaire, it was sent with an email introducing its purpose and a motivation for why the respondent was selected (Christensen et al., 2010). Furthermore, the respondent received a hyperlink leading them directly to the questionnaire to make it easily accessible. The questionnaire was sent to two dominant firms within each industry. As these firms were considered controlling their industry and determining the business settings, a smaller sample gave sufficient information about said industry. Due to the explorative nature of this thesis, a high response rate was not prioritized. The goal was solely to gather information regarding the market interest, which was reached.

3.4 Patent Evaluation

To determine which patents Company X should license to potential licensees within the fields identified, all patents were evaluated with a framework influenced by Santiago et al. (2015) and prior research regarding patent portfolio analysis. The first phase in the framework by Santiago et al. (2015), called technology classification, was performed. The second phase includes an extensive, quantitative assessment, which was assessed not to fit the scope of this thesis.

First, the market breadth was analyzed by assessing potential markets. Second, the limitations were investigated by dividing them into the sub categories of strategic, legal and technical limitations. The strategic dimension was analyzed based on what

might happen when the patent expires. The legal limitations were ranked by comparing both patent age, patent approval, number of backward citations and geographical coverage. Regarding technical limitations, only patent scope was scrutinized by measuring the number of claims and the number of International Patent Classifications.

Third, to examine the potential to create value, a number of factors were considered. The impact on the industry, whether the technology is superior to its substitutes, and the technology's complementary features were examined more qualitatively based on an examination of possible substitutes as well as the authors' view of the technology.

In each category the patents were evaluated individually, and thereafter ranked on a falling scale from one to three. The ranking followed a common ranking method, called Standard Competition Ranking, which means that gaps are left out in the ranking if two items are ranked the same (Vojnovic, 2015). Thus, if patent 1 was ranked ahead of patent 2, and patent 3 received the same ranking as patent 2, they were ranked 1, 2 and 2 respectively. If patent 1 and patent 2 on the other hand were ranked equally, and higher than patent 3, the ranking would be 1 1 3.

3.5 Quality Assurance

Through the work of the thesis, validity and reliability has been key elements in the process. Validity and reliability are basis for assessing the quality of business research. By combining background data and internal corporate documents, for example, reliability was ensured through triangulation.

3.5.1 Validity

Validity concerns the adequacy of measures. Validity can be described in terms of both internal validity and external validity (Bryman & Bell, 2007). Internal validity involves causality and whether a conclusion that contains a causal relationship between two or more variables can hold. External validity, on other hand, concerns the issue of whether the results of the study can be generalized.

Triangulation was used in interviews and literature study, meaning that more than one source has been used to strengthen a research result. Using triangulation ensured internal validity (Bryman & Bell, 2007). When interviewing employees at Company X, different individuals with various professions were interviewed to form a nuanced view of the company. Several sources have been used by combining interviews with employees at Company X and corporate documents, for instance in analyzing the patent portfolio. By interviewing licensors triangulation was used even further to understand how an organization that licenses could be facilitated. In addition to this, triangulation was used in the literature study to validate statements and not only rely on one source of information.

The geographical distance between the authors and the companies participating in interviews during the study might have obstructed the communication. With Company X, more face-to-face meetings would have facilitated the information exchange. In interviews with Company A and B, phone conversations might have affected and limited the communication when the persons involved could not see each other (Bryman & Bell, 2007). This in turn creates a more inconvenient situation where the interviewers cannot see the environment where the interviewee is in and

how it affects her. However, the suitability of these companies they were prioritized above face-to-face meetings.

The focus on the situation of Company X has affected the direction of the thesis and the aspects analyzed, but the result may still be externally valid and applicable to similar firms in the same situation as Company X, possessing valuable, intellectual property not fully utilized. The interest in Company X's patents, showed in the questionnaire, may not be generalizable for the market interest as a whole. However, to ensure external validity when mapping the industry interest the larger players with dominant business models within each sector were chosen.

The external validity could have been improved by incorporating more licensors to interview, by using advisors such as researchers to a further extent in the choice of participants, or by further analyzing the properties of each category for the interviews, to determine whether the chosen firms where appropriate samples. Although, these were all conscious decisions made to complement the interviews and earlier data collection, and were seen as appropriate since the purpose of the study was not to create an entire picture of the market as a whole.

3.5.2 Reliability

The essence of reliability is consistency. For a study to be reliable it must be repeatable (Bryman & Bell, 2007). A prominent aspect involved when considering whether the result of a study is reliable is inter-observer consistency. Inter-observer consistency involves the possibility that there is a lack of consistency when different observers are involved in interpretation of the same phenomenon.

3.5.2.1 Interviews

To strengthen the inter-observer consistency, and thus, make the interviews reliable and free from the interpretation of only one person, the authors have conducted the interviews with a minimum of two people present. The questions asked during interviews were well thought through and intended not to lead the interviewee into any specific direction. The interviews with Company X consisted of some standardized questions, which were asked in the same way to all interviewees in order to get comparable results (Ejvegård, 2003). Although, the interview questions and angle depended on the background and interests of the interviewer, which may have affected the interviewee in some way.

The initial interviews with Company X were conducted early on, which is a reason to why the thesis direction became influenced by this meeting. The purpose has since been clarified and gradually narrowed. The interviews with Company X were conducted directly with the responsible persons. The CEO booked the meetings with professionals at the company, and was present during the first couple of minutes of each interview and restricted what the employees were allowed to say. This affected the interviewees and may have limited what information that was shared. During this first occasion of interviews, the questions had been written down in English. Since all interviewees were fluent in Swedish, the questions were asked in the same language and therefore translated from the English interview template. This means that the interviewees may not have been as prepared as they could have been, due to possible interpretations or misunderstandings from the English questions sent prior to the

interview session. Although, this risk is considered low due to the employees' regular contact with international partners and customers.

While conducting the interviews at Company X, questions regarding for instance the suitability of Company X to license were asked to their hired consultant. Even though he did not have the same insight into Company X, he contributed with valuable information about their IP. Several other employees were asked the same questions, thus triangulation was used.

After the interviews, the interviewers went through what had been said and the notes taken. This was made in order to avoid misinterpretations and ensure an objective assessment (Bailey, 2008). The interviews with Company X were mainly conducted in their offices. This helped make the interviewees feel comfortable. In addition to this no recording was used, making sure the interview was not inhibited (Ejvegård, 2003). The interviewees have approved information from the interviews used in this thesis. This gave the interviewee a chance to correct misinterpretations.

During the research for this thesis, information regarding Company X and the firm's circumstances has changed, for example the target of reaching a positive cash flow in 2017. The information available at each time of the interviews has affected how the interviews were conducted and the analyses made from the interviews.

3.5.2.2 Questionnaire

While working with Company X, the understanding of their technology has been well established. The analysis of applications for the technology lead to the sample of companies that were contacted. Although, a more thorough analysis of potential markets could have been executed with the help from researchers and technical experts. However, this did not fit within the scope of this thesis, which aimed to explore the interest in selected industries.

The questionnaire was not answered by everyone it was sent to, however the response rate was considered satisfactory given the circumstances. The option was made possible for the potential licensees to be anonymous, which might also have been a problem, since the result did not indicate which companies that had answered the questionnaire. This made it hard to reconnect with the companies who had answered, on the other hand this reduced the risk of companies leaving out secret but significant information. It is also possible that the right person was not reached with the questionnaire, since the responsible person for the decisions of licensing, and its official title, at each company may vary. In addition to this, one of the questionnaires had to be answered over the phone, due to late response in this industry, which inevitable made room for misinterpretations.

4. Framework for Analysis

To structure the analysis the well-known framework Business Model Canvas was used. The framework is suitable since licensing would lead to a new business model for Company X. In addition to this, the framework takes the value creation, capturing and delivering process into account, corresponding to the internal and the external perspectives of a business. By mapping both the potential business model for licensing, and Company X's current business model, a comparison was made to illustrate the changes arising from licensing Company X's patents. However, the framework was only providing an overall structure for the analysis. Hence, the analysis was not limited by the canvas' original design.

4.1 The Business Model Canvas

The Business Model Canvas, created by Osterwalder and Pigneur (2009), is a tool for illustrating, analyzing and creating business models. Its main purpose is to ease the communication by designing a simple and intuitive framework. The canvas consists of the following nine building blocks.

Customer Segments comprise all of the company's customers for which the firm is creating value. A company's customers constitute the core in every firm, since they are the ones creating revenues for the company. Considering that different customers might have a need for different channels, relationships and value propositions, it is important to choose which customers to serve and which to ignore.

The Value Proposition describes the value created from the company to each customer segment. The proposition can consist of many different parts, for example a special brand, a better design or a customized product offering.

The Channels represent the ways the company communicates with its customer segments to deliver the value proposition. This includes everything from creating awareness of the products to delivery and after sales. Osterwalder and Pigneuer (2009) distinguish between own channels and partner channels, such as through a wholesaler, web sales or own stores. However, for communicating and reaching each segment, one, or a combination of channels, can be used.

Customer Relationships refer to the forms of relationships the company involves in with every customer segment. The company can decide to establish a close relationship, as in a partnership with collaborative development and co-creation, or standardized relationships, such as in automated services.

Revenue Streams describe how the company generates revenues from each customer segment. Revenue streams can consist of two parts, either transaction revenues or revenues from current payments.

Key Resources represent the assets the company needs to carry out the business model. Resources can be physical, financial, intellectual or human. Depending on the nature of the company, its industry and the business model, different types of resources will be required. The resources can be owned by the company, be acquired from partners or be leased.

Key Activities cover all activities the company has to perform to make the business model work. The activities needed vary from company to company but can include activities such as production, problem solving or network related activities.

Key Partnerships represent the relationships with suppliers and partners that the company needs to carry out its business. There are many motives for creating partnerships, such as reducing risks and uncertainty, optimizing the business model or obtaining resources.

Cost Structure refers to all expenses from business performed according to the business model. The costs may be divided into either cost driven or value driven expenses.

5. Research Findings

In this chapter, the results from the interviews with Company X are initially presented by being divided into current situation and a future scenario where licensing is incorporated into the business. Furthermore, the results from the interviews with the licensors are presented. Finally, the outcome of the patent evaluation, as well as the result of the questionnaire regarding the examination of the market interest are described.

5.1 Interviews with Company X

From Company X's perspective, the main selling point of the product is its safety performance. Three patents protect the product and the company has had numerous inquiries from other industries to access the technology. Several positive effects from licensing have been identified within the company, such as a raised awareness of the technology and an increased adoption among the end customers.

5.1.1 Current Situation

The main customer purchasing Company X's product is a middle aged individual. The product reaches the end customers via distributors and direct sales and is manufactured in co-operation with an Asian partner.

5.1.1.1 External perspective

Company X creates value today through the commerce of a life saving, safety product[1]. This is seen as the core business, the ambition and the generated customer value. Although the product is marketed towards the cycling industry, the CEO emphasizes that the ambition of the firm may allow other areas of application where lives could be saved. In the company's view, the selling point encompasses the safety, which is several times better when compared to other products on the market in tests of performance and shock absorption. In addition to this, the product is discrete, innovative and allow for the customer to feel fashionable. The industry is associated with social, environmental friendly travelling and prestige, which is why these are concepts associated with Company X's product.

Three patents make it possible for the product to exist without extensive competition, and they enable the product to detect the movement pattern of the carrier, to unfold in case of a crash and to protect the skull[2]. Because of the product's properties, which are different when compared to similar sports gear on the market, the company sometimes experiences difficulties in translating the value to the customer[3].

A diverse demographic population uses the product[1]. During the last couple of years, the value of extreme design has consciously been suppressed in order to attract a wider demographic target group. There are almost 50% women and 50% men among the customers. A 17-year-old boy may be interested because of the technological edge and innovative brand, while the 70-year-old lady may be eager to stay fashionable while travelling. According to the CEO, the only limiting factor is the price, since the product is quite expensive compared to other helmets in this industry.

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[1] CEO, Company X, 2016-02-16
[2] CEO, Company X, 2016-01-27
[3] Marketing Manager, Company X, 2016-02-16

Despite the wide demographic reach, the typical customer is an early adopter between 35-40 years of age, interested in fashion and technology[3]. Although the product is marketed towards end users, the perfect customer imagined is a company where a large number of employees need to use this safety product in their everyday work.

The product reaches the market mainly through distributors[1], but also via business-to-business deals and directly to end-users. The distributor might in turn sell the product to yet another middleman, which is in contact with end-users. The focus is to be available for all, even if the marketing material might be directed towards the typical customer. This implies a focus to attract a larger number of transaction-oriented distributors, instead of a few, relation-oriented partners. Examples of distributors are design stores, sporting goods stores and cycling stores, which are chosen with the ambition to reach different customer segments[3].

The business-to-business channel contributes to a small share of sales compared to the other approaches, and a business-to-business strategy is undergoing a development phase[4]. Currently, both inquiries from other parties as well as scanning from Company X's side occur. Potential corporate customers might arise through a common network of partners or during fairs or networking events. Apart from product commerce, the company recently enjoyed an additional revenue stream, a significant subsidy, due to its innovative profile[5].

5.1.1.2 Internal Perspective

Company X currently has a partnership agreement with one of the five largest airbag manufacturers in the world for development and manufacturing[1]. This manufacturer, located in Asia, is one of the most important partners, regarding the technical aspects needed to produce the high quality product[6]. Current production in Tunisia and Portugal is in the progress of being moved to this manufacturer in Asia, in order to aid scaling up and lower manufacturing costs. Through mutual goals and a clear, well-structured agreement, they can openly discuss solutions and possible improvements. This new manufacturer does not sell or commercialize any of Company X's products and there are no other partners linking Company X with the new manufacturer[1].

Company X needs their technology to penetrate the market, to become an established application and invoke trust[1]. External partners to Company X handle the distribution in countries apart from Sweden and Denmark. They buy products from Company X and handle all marketing and distribution within their markets. The external partners are used because of their established positions and deep understanding about their markets, which is thought to speed up market penetration[3].

5.1.2 Future Licensing Possibilities

The target customers of a, from the employees' perspective, preferably non-exclusive license would be well-known companies with high-quality brands. Company X is

[4] Marketing Manager, Company X, 2016-04-27
[5] CEO, Company X, 2016-04-21
[6] Director of Safety and Regulatory, Company X, 2016-02-16

currently developing a strategy for business-to-business commerce and realizes that a licensee would require substantial support.

5.1.2.1 External Perspective

When licensing patents, several industries may enjoy the lifesaving benefits of the technology[2]. The technology could be implemented as part of an existing product, or in collaborative product development[5], with the aim to create a mechanism for detecting the collapse via a bracelet for instance.

A long-term goal of licensing could be non-profit-driven[2]. The licensee could get the license in order to create a common good. In such a case, there must be a systematic way of examining the performance of the licensee. Making the technology available to all could be a way to generate a wide diffusion of the technology[3]. An example of a similar case is when the MacBook was launched, which dramatically increased the sales of ordinary PCs. These kinds of agreements would be suitable when Company X has reached a more stable position[2].

Licensing of the technology may bring positive effects when several companies communicate the technology, which may raise the level of understanding and acceptance among end customers. To license to a competitor on the same market could be beneficial, but while the company is comparatively small, the risk of being excluded from the market is currently too threatening[5].

The patent most suitable to license is patent 1[2&7]. This patent is considered the strongest; it has the widest scope, is described in an ambiguous way and could be combined with other materials and solutions than the existing product. In addition to this, it is less complicated to implement than the other patents, according to the CEO. The feature of protecting both the neck and the skull is the fundamental reason for the fulfillment of the non-obvious criteria of the patent[7]. This property decreases the risk of spinal damages, such as whiplash injuries, since the airbag initially is inflated around the neck area.

Patent 2 is detailed and narrow in its specification, considered to have very limited application areas and is therefore not as suitable for licensing[2]. In order to implement the technology it protects, there is a need for comprehensive data analysis, which requires both resources and field specific knowledge[2&7]. The application for this technology was recently approved and gives Company X the sole right of usage in Europe[7].

The third patent family, the airbag, is considered difficult to replicate since the collaboration between the inner and outer bag, together with their appropriate fabrics, are hard to reproduce in another fashion without infringement[7].

In the future, Company X will transition its focus on major product innovations towards minor adjustments, such as creating new parts, components and user interfaces[5]. Any changes to the patented product could be shared with the licensee in a potential licensing agreement.

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[7] Patent Lawyer, Company C, 2016-02-16

To add value to the licensee and incorporate the trademark of the licensor, like "Company X Inside", on its product could have two possible effects. It could increase awareness and trust through an increased market availability and a diffusion throughout additional market. On the other hand, if the licensee's product were not of the same standard, the perceived trustworthiness of Company X's trademark would be harmed [4&5]. As the company's trademark is a central part of how the product is conceived, any harm to the reliability, which is closely connected to the trademark, could be disastrous [5].

The value added from licensing of Company X's patents would also include know-how [5]. Since the product and its patents are unique, no similar knowledge regarding the technology exists on the market. Furthermore, the brand is associated with innovative technology, which could be value adding as internal technology inside an existing product. The CEO compares the technology with Intel Inside®, which is one of the world's most recognizable computer brands, and states that a similar approach to incorporate technology into the licensee's products could add value to the brand of both parties[1].

A visible trademark and logotype could in the future be the determining factor in the choice of an end-user. Although, in adapting this strategy, it is crucial to find systematic methods for controlling the quality of the end product to not damage the corporate brand [5&4].

The licensing agreement would most likely be non-exclusive and allow for several licensees to use the patented technology[5]. At the same time, concerns regarding the allocation of rights in shared patent agreements arose during the interview. In addition to the healthcare industry, there are plenty of areas, skiing, skating and riding for example, where head protection is needed[2]. It could be argued that the sports segment is too complex for the technology protected by the second patent, why skiing and skating are examples of industries that, in that case, would not be applicable[3]. Potential application areas include industries where protection is needed at one point, not repeatedly[5]. The agreement must also be settled on a market with well-capitalized customers, regardless of if the customer is the end-user or not[1].

Crucial properties of a potential license customer are a well-known brand, or a trustworthy industry such as healthcare, and a rapid or existent, large market reach[1&4]. The CEO explains that although the market share for the technology would decrease for Company X, the increased size of the entire market could result in a strengthened growth also for Company X. Expansion through licensing aligns with the expressed goal to appear on 30 geographical markets in 2020[1].

Licensing of Company X's advanced technology would require support, why there is an advantage in choosing a company within the same geographic area[8]. A licensee with a large amount of resources could be beneficial, although such an organization could pose a problem of long and difficult decision routes. For licensing to be successful it is important to package the complex technology that Company X has developed and patented, to make it possible for the licensee to make great use of it[8]. It is also needed that the organization has the resources to support this technology

[8] Director of Safety and Regulatory, Company X, 2016-02-16

transfer. For licensing to be successful it is important to package the complex technology that Company X has developed and patented, to make it possible for the licensee to make great use of it[8]. It is also needed that the organization has the resources to support this technology transfer.

In addition to properties of the licensee, its market's properties may have a significant impact on the acceptance of new technology[1]. The Netherlands is famous for their cycling traditions, albeit a very small share of the population wears a helmet when biking. Aiming at markets with helmets incorporated in the civil law, as in Australia, could be beneficial. Sweden is the world's best market when it comes to habits of wearing a helmet when biking.

Licensing revenues may exclusively finance internal R&D, or be allocated in a more flexible manner[1]. Due to the current financial status, the latter would most certainly be the case. The additional subsidy from the European Union will solely serve the R&D department, but may in the long run contribute to prosperous licensing opportunities[5]. Returns from a licensing business would be an easy, additional income stream[5]. If a large, well-known company from a distant industry were to approach Company X to implement the technology, the requirement of technology expansion would not be as significant. The monetary benefits would exceed the product development that could be realized in similar industries. The priority at the moment is improved short-term cash flows, but long-term agreements such as royalty payments may be interesting in the future.

Since the expected income is uncertain, there are concerns regarding financial stability of a new type of business model[5]. Identified financial risks of licensing include recruitment and potential expansion of patents.

5.1.2.2 Internal Perspective

The new manufacturer of Company X produces similar products with other applications, which could be used for possible additional benefits in a licensing deal. However, if a licensee would choose to manufacture at another competing firm, the new partner's market position could be negatively affected[5].

Future licensing business could be given added benefits through connecting the licensee with external partners or through collaboration in product development, as in the close collaboration between Company X and one of its manufacturers. Furthermore, a strong brand could give additional benefits to a future licensee through association or by marking products with "Company X Inside"[1].

Company X is not working actively with their patent portfolio. Instead, focus is now to increase diffusion of their product, providing improved protection. Licensing is seen as an opportunistic business[1]. The majority of the personnel have no experience of licensing, however at least two employees, from different organizational departments, have previously worked within companies engaged in licensing activities.

5.2 Interviews with Licensors

Company A and Company B are licensors with different organizational size and structure. Company A represents a small, entrepreneurial actor active within licensing of technology, while Company B is a large, international firm with extensive experience within the field.

5.2.1 Company A

Company A is a small Swedish start-up with annual revenue of approximately 7 million SEK (Company A, 2015). They license software and sell their product business-to-business and do not operate in any retail of their products themselves. The company has licensed their patents almost from the start, although the objective with licensing activities has transformed as the company has matured. In the beginning, the goal with licensing was to cover the costs of development and refinement of the technology but today it is their main business.

Company A has limited financial resources to create a large patent portfolio. Therefore the company has strategically chosen to focus on two patents that protect the core of their technology. The reason for this is that it builds company value and makes them unique for a longer period of time. The company is alone on their market, providing a high quality product of this sort. Choosing to license their patents creates a recurring revenue stream that enhances the company's value as it grows, which stakeholders may look for when considering an investment.

The potential risk Company A sees with licensing is low since their technology is difficult to replicate without substantial knowledge. This difficulty also defines how the company cooperates with their licensees. Today their relationships merely consist of the company consulting their customers. It is common that the collaboration start early in the licensee's product development since the software demands a certain structure of the hardware.

Company A's target customers are large international companies. The typical licensee is described as a company in Silicon Valley in need of the technology that Company A provides. The company's previous focus has been research and development and they are now entering a phase were marketing the product is key for the company's evolution. This has had an effect on the payment structure of the agreement between Company A and its customers. Instead of only focusing on a royalty rate per sold unit, they market the software through the customer's product, for example by labeling.

5.2.2 Company B

Company B is a large, international Swedish company within the telecom sector with annual revenue of approximately 279 million SEK (Company B, 2015). A large part of its business lies in R&D and licensing. At the moment, Company B has approximately 100 granted, active patent families.

Company B divides their patents into two categories, patents conforming to standard and patents for implementations. Standard patents are available to anyone who is interested. The company does not have any certain criteria that the licensee must fulfill. The implementation patents, on the other hand, cannot be licensed without a negotiation between the two parties. Since this negotiation is needed, Company B considers the risk with licensing as low.

The opportunity that Company B identifies with licensing is the creation of an ecosystem where all corporations within the industry can collaborate, using a specific standard. This is an established approach to licensing within the industry. Licensing is also a way for Company B to receive return on its investments in R&D as well as to continue being an innovative company and the key player on their market.

A few years back, the company was not as active in patenting their technology as they are now. Thus, high costs related to R&D with no protection of the technology emerged. The change in patenting, and thereafter licensing, has created recurring revenues instead of expenses. Although the cost structure changed, it did not have an effect on the company's general business model or value proposition.

Company B's target customer could be described as any company with a radio interface within their product, although the target customers are the large players in the industry. Since the company has such breadth of customers, the relationship that the company has with each partner can be very different, as well as the form of payment chosen.

The channels Company B uses to reach their licensing customers differ from product to product. Therefore, they have separate divisions within the company dedicated for each segment. To reach the larger companies in the field, Company B usually contact them with a package proposal. Normally, this type of cooperation implies a closer partnership.

5.3 Patent Evaluation

The result from the patent evaluation described in chapter 3.4 is presented in Table 2 below. The evaluation is based on both the result from the interviews with Company X, as well as the author's view of the patents based on Company X's annual report and the information about the patents at the European Patent Office.

Table 2. The result of the patent evaluation showing which patent being most suited for licensing for Company X. The patents have been ranked according to the Standard Competition Ranking and the evaluation shows how patent 3 is the most valuable patent in terms of market breadth, limitations and value potential. The second most valuable patent is patent 1, while patent 3 is considered least suitable for licensing.

	Patent 1	Patent 2	Patent 3
Market breadth	**1**	**3**	**1**
Limitations	**3**	**2**	**1**
Strategical limitations	2	1	2
Legal limitations	2	3	1
Patent age	3	2	1
Patent approval	1	2	2
Backward citations	-	-	-
Geographical coverage	1	3	2
Technical limitations	3	1	1
Patent scope			
IPC	2	1	2
Number of claims	3	2	1
Value potential	**1**	**3**	**2**
Technical dimension			
Impact on the industry	1	3	2
Superior to its substitutes	1	3	1
Complementary features for differentiation	1	2	2
Market dimension			
Market potential	1	3	1
Functionality following market trend	1	3	1
TOTAL	**2**	**3**	**1**

The number of markets for licensing of patent 1 and 3 respectively were greater, than patent 2, for which only a few markets for licensing were found. The algorithm protected by the patent can only be used for detecting movement of one type of sport. Furthermore, the ways of incorporating this patent in another industry are farfetched

The strategic dimension comprises the long-term view. When patent 1 and 3 expires, there might be a risk that the licensees of these patents enter Company X's market since they have the knowledge required, apart from the algorithm, and therefore increase Company X's competition. Such a risk does not exist when licensing patent 2, since potential licensees will not have received any know-how regarding the collar, nor the airbag, why this patent was ranked higher in terms of strategical limitations.

Regarding the legal limitations, they differ to a large extent, mostly because of the great difference in what year the patents were applied for. The remaining protection time for patent 1 is ten years, for patent 2 thirteen years, and patent 3 seventeen years. On the other hand, patent 1 is the only patent being approved. Patent 1 is approved in most countries, but has applications pending in some countries. On the contrary, patent 2 and patent 3 are not approved in any country so far. Since there are no backward citations in any patent, this does not affect the evaluation. Regarding the geographical coverage, all patents are applied for at the EPO. However, patent 1 is also applied for in nine countries outside Europe, patent 2 only at the EPO and patent 3 in four additional countries.

When comparing the patent scope, the numbers of International Patent Classifications, IPCs, were the same for patent 1 and 3, namely five. The number of IPCs for patent 2 was eight. If using number of claims for measuring patent scope instead, the ranking differed. Patent 1 had twelve claims, patent 2 thirteen and patent 3 sixteen. In total, legal limitations were considered to be more important than the technical and strategical, hence patent 3 is regarded as the least limited followed by patent 2 and patent 1 respectively.

Regarding the technical dimension of the value potential, the impact on the industry was ranked highest for patent 1 since it comprises a unique method for protecting the neck and head. Patent 3 was ranked the second highest due to the new way of designing an airbag. Patent 2 as the lowest since it seems to be easy to develop a similar algorithm. Furthermore, patent 3 was ranked highest in being superior to its substitutes, which is due to the helmet's performance when it comes to shock absorption. The reason for patent 1 being ranked highest, when it comes to its complementary features, was that this patent results in the possibility to produce a helmet which not only protects the head, but also is a design item.

For the market dimension of the value potential, patent 1 and 3 were ranked the same due to having almost the same potential markets for licensing. When it comes to the market trend, patent 1 and 3 were ranked higher than 2 since personal safety has become increasingly important.

For Company X, the market breadth was considered to be more important than limitations for licensing and value potential. This was due to Company X's expressed will to reach as many customers as possible with their technology. When comparing limitations and value potential, they were considered equally important to Company X. Hence, patent 3 was considered to be the patent most suitable for licensing. The difference in potential of patent 3, when compared to patent 1, is minor. However, the difference between patent 3 and 2 is significant, with patent 2 being ranked the least suitable, both according to the value potential and the market breadth. Due to patent 2 having the lowest potential to create value, having the narrowest market and being

easy to imitate, according to Company X, this patent will not be investigated further in the analysis.

5.4 Questionnaire

In this chapter, the result from the questionnaire is presented. Since the aim of the questionnaire was to investigate the interest of licensing in Company X's patents, only answers to the questions that target this area will be presented. General questions about the company will be left out.

Five out of ten companies answered to the questionnaire and all respondents were familiar with Company X. The question regarding whether they knew of Company X or not was intentionally the last question of the form, hence it should not have affected the outcome of the questionnaire.

All companies answering the questionnaire have their own product development. Three out of five companies have also licensed in technology before, but only one has licensed out. The result of the question regarding what patents the companies are interested in, is presented in Figure 2 below.

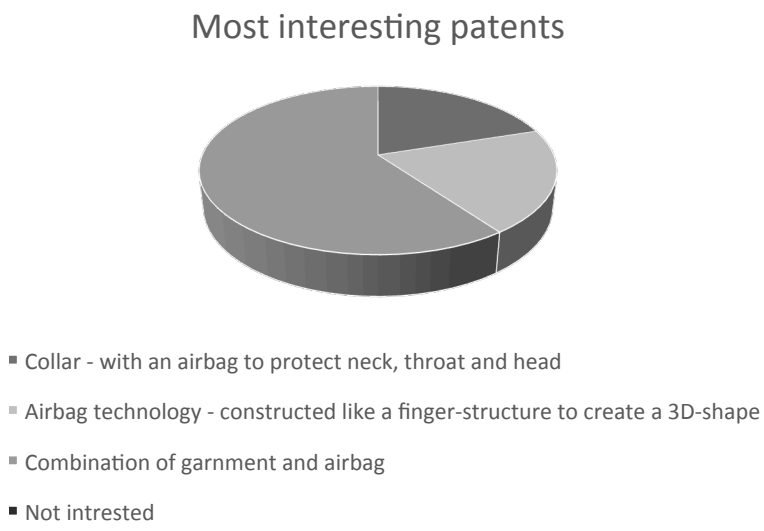

Figure 2. The distribution of answers regarding the most suitable patent to license in for the respondents. As can be seen in the diagram, the combination of the patent protecting the collar and the airbag patent is, according to the companies from the selected industries, most interesting to license.

Three out of five respondents believed that licensing in a combination of patent 1 and patent 3 would suit them best. These three companies represent the industries winter sport protection, technology of medicine and riding gear. The respondent from the automotive industry preferred the patent regarding the airbag, and one of the respondents from the riding gear industry preferred the patent regarding the collar. All respondents were interested in licensing one or several of Company X's patents. When it comes to the probability of licensing in the technology all companies, except for the respondent from the automotive industry, chose three on a scale from one to five. The licensee in the automotive industry on the other hand, said the probability was four out of five. Most companies expressed interest in licensing because of a possibly shorter time to market, increased knowledge, decreased risk or competitive advantages.

6. Analysis

Below follows an analysis of how theory can be applied to Company X's situation as well as an analysis of findings from the interviews, the questionnaire and the interviews with the licensors. The analysis is divided into external and internal perspective, according to the Business Model Canvas (Figure 3). After these perspectives are analyzed a comparison with differences between the current and future business models is analyzed.

Figure 3. A modified version of the Business Model Canvas (Osterwalder & Pigneur, 2009). The framework represents the external elements in a business model, covered in grey, and the internal elements, colored in yellow.

The right hand side of the Business Model Canvas (Value Proposition, Customer Segments, Customer Relationships, Channels and Revenue Streams) is considered as the external perspective. Although the value proposition element may be regarded as both the internal and external side of the value proposition, or a bridge between them, it has been chosen to be included among external elements of the business model. The remaining elements on the left hand side (Key Partners, Key Activities, Key Resources and Cost Structure) are considered as internal elements.

6.1 External Perspective of Licensing

The value created in a potential licensing business will for instance correspond to patents, a licensing package with support and access to an existing network of partners. Licenses may be offered to companies with experience in licensing and with deep market reach in order to fulfill the aim of increased market presence. The analysis in the following section is based on prior research, corporate documents, interviews with Company X, questionnaires and interviews with the two licensors.

6.1.1 Customer Value Creation

Licensing in technology is less time-consuming for the licensee than to imitate even though start-up lags may occur according to Rockett (1990). Therefore, the core value when licensing lies in Company X's patents and the product's outstanding safety. Patent 3 is the most suitable according to the patent evaluation. However, Company X means that patent 1 is the most appropriate based on its scope, the possibility to combine it with other solutions and because it would be easier to implement than the other technologies patented. Company X is not interested in licensing their technology to another company in the same industry. Thus, the alternative to license all patents together is not of interest, since this probably would result in a product similar to their own.

It would be possible to license all patents individually, although a combination of both patent 1 and patent 3 is the most interesting according to the respondents of the questionnaire, see chapter 5.4. Combining patent 1 with patent 3 for licensing is valuable since they complement each other when it comes to functionality. However, some potential licensees answering the questionnaire prefer licensing patent 1 or patent 3 alone. As mentioned earlier, these patents could be licensed to almost the same industries. The main difference between the two patent families is the legal limitations. A possible problem with licensing them together, concerns the fact that patent 1 is expiring several years before patent 3. However, having a bundle of these two patents might be a way for Company X to keep licensing after patent 1's expiration, although at a lower royalty rate.

After choosing which patents to offer the licensee, it is important for Company X to do a comprehensive study of each industry, and company, to get the licensees interested in the product. When doing so, one approach is to give customized offers to each possible licensee. Lachman and Samet (2005) recommend this approach since it would lead to the technology transfer being conducted more easily and the potential licensee would be able to quickly decide on whether to license or not. An additional advantage of customized offers is the possibility for Company X to offer different amount of support based on what type of relationship the licensee needs. The alternative for Company X is to offer a standardized package. This may be less expensive since they can use the same approach each time and reduce the cost arising from creating customized offers.

To give the licensee as much value as possible, each licensee could be offered an exclusive contract within its industry. By offering such contracts, the licensee will be given a competitive advantage and a technological solution unlike other products on the market. If Company X instead chooses to offer non-exclusive contracts, they might reach more people with their technology and therefore spread their technology further. However, if several companies try to profit from the technology on the same market, it might harm the technology diffusion. The competition might, on the other hand, help to spur the potential licensees to even greater success altogether.

Additional value offered from the licensor to the licensee, could be to provide the opportunity to manufacture the licensees product at the licensor's manufacturer. This might be valuable to some licensees, but should be optional since some may prefer using their own manufacturing.

Further non-monetary value could be given to the licensee by offering trademark licensing. In this manner, potential products of the licensee can be marked with a trademark like “Company X Inside”, which might be valuable for the licensees since Company X is considered to be an innovative brand. If the licensee would be attractive enough in terms of brand awareness, it could also be beneficial for Company X to show the quality and reliability of the internal technology of the product. In this way, Company X could speed up the adoption of its innovative product, both among end-users and potential licensees, thus increase the awareness of their technology.

6.1.2 Potential Licensees

If Company X were to choose the option of licensing to another market segment, the spread of the technology would be wider, reaching a larger scope of markets. Customer X’s product differs from products within the same industry and they find the product difficult to communicate to their customers. A broader technology spread could be favorable for Company X in the sense that a wider application of the technology could result in a greater acceptance and understanding of it among end customers.

Beyond a wider market spread, another non-monetary aspect of choosing a licensee is the potential credibility for Company X’s technology. Picking a licensing customer that already has a well-known trademark could have a positive effect on Company X’s brand and ultimately create credibility for Company X’s technology, their innovative ability as well as their existing product. Moreover, choosing a licensee that already has a large and well established customer network might speed up the process of reaching as many retail customers as possible. Choosing this type of licensee would also align with Company X’s wishes to extend the reach of the technology targeting a larger number of end customers.

The ability to attract a wide range of licensees may be achieved through the increased focus on product adjustments and user interfaces that is enabled through the subsidy from the European Union. By tailoring the product offering, a larger number of licensing customers may be targeted. This would, in turn, generate a larger amount of revenues that signalizes the potential and applicability of the technology, which probably would appeal to an even larger number of licensees.

Company X is currently the sole player in their field. This position cannot be sustained if they license their patents. However, Company X may freely choose its competitor as they have the position as patent-monopolist. If Company X were to license to the strongest firm in the range of possible entrants to the market, they would most likely lose a large share of it. This based on the company’s current size and financial capacity and their therefore limited ability to compete against the stronger firm. If they instead were to choose a weak firm among the entrants, their market position would not be as threatened (Rockett, 1990). Hence, they could remain as the superior player on the market for a longer period of time, which would enable them to grow faster.

Selecting a stronger firm as a competitor could also result in losing bargaining power in the formation of the licensing agreement. Although, if the patent being licensed is an incorporated part of the licensee’s product, Company X’s bargaining power could

be restored. The argument for this is based on the assumption that the licensee would be reliant on the technology to manufacture the final product and therefore value the license to a greater extent.

To be in partnership with a licensee that has prior experience in licensing might be favorable for Company X as discussed in section 2.2.1. The licensee would have a better understanding of what resources that are needed in order to make a successful licensing deal. A greater appreciation of the patents' value could similarly be assumed. Since Company X has not conducted this kind of business before, they could benefit from the licensee's knowledge and practice. On the other hand, the asymmetry in knowledge could have a negative impact on the parties' equality in the collaboration. Thus, there is a risk that Company X's bargaining power could be lowered as a result of the information advantage in favor of the licensee.

6.1.3 Customer Relationships

Company X wants to transfer its complex and innovative knowledge, making it possible for customers to reap the benefits of the licensed technology and be a part in making the technology widespread (Hagedoorn, Lorenz-Orlean & van Kranenburg, 2008). With respect to the complex technology that Company X is offering and has invested its knowledge in, it could therefore be favorable to initially focus on partnership-embedded licensing agreements. They could gradually increase their licensing business, ensuring that each new licensee is handled appropriately. If so, it would be in line with their long term goal to attain great technology diffusion, through less partnership-embedded licensing agreements. Thus, the technology would find its way to more markets, while ensuring a high qualitative use.

In addition to communicating the technology, Company X will have to make sure potential licensing customers are able to make profit from the technology. It is important that the licensee is well read on the technology and has enough resources to implement the licensed technology successfully, as stated by Neumayer (2013) in section 2.2.1. For Company X, with their size and restricted amount of resources in mind, it is more so critical to communicate only with the key decision makers in the organization of a potential licensee. Any other approach could quickly amount to unnecessary time consumption. When engaging in partnership-embedded licensing agreements it is also important to bear in mind the effort needed to maintain these relationships. As a consequence, resources would initially have to be focused on building good relationships with a few companies, not engaging in more than they can handle.

If Company X later moves toward a business where they can handle more licensing customers, new issues may arise. These issues involve, for example, the handling of offers from several licensees at once. Just because a licensee shows great interest in their technology it does not mean that Company X should settle for any offer. To get the best terms it could prove necessary to play off the potential licensing customers against each other (Rockett, 1990). However, doing so might create unnecessary conflict. Thus, trying to reach a win-win situation and the most benefits for all parties involved might be a better way to go.

By having a continuous dialog with licensing customers, Company X will enable new ideas and improvements to be shared in the licensing collaboration. This will also

make sure that the company is making the best use possible of the technology. If the customer is not doing so, Company X risks not only to lose licensing revenues, but also to counteract the initial purpose for licensing - to make the technology widespread and established.

Company X could further extend the relationship by collaborative innovation through co-patenting, where Company X would share the rights to co-developed patents with another firm. This would require substantial knowledge within the field of formalizing licensing agreements, to avoid disputes regarding the share of revenues to each party for instance during the partnership. It would also require an existing trust between the partners, to prevent the risk of one firm selfishly patenting the innovation without to the other's acceptance.

The employees dedicated to licensing would, be the sole contact persons for the licensing customers. In this way Company X allows for its other employees to keep their focus on the core business, and also limits the hazard of communicating ambiguous information. Devoting a separate division for licensing also gives the customer a deeper relation with the contact person at Company X.

6.1.4 How to Reach the Licensees

The interest in Company X comes from a wide scope of markets. However, the interest could be of greater value if Company X were to define what markets their potential licensee operates in. This since they would be able to concentrate on building relationships with the right customers segment. The appeal of Company X's technology has been proven by the weekly external inquiries, both by firms operating in the same marketplace as well as in others. This signals that there already exists a buzz around the technology. The results from the questionnaire also suggest that there is an interest in licensing within a variety of markets since all interested respondents had heard of Company X before.

Further, a strategy for reaching customers could be to look within the eventually emerged network of licensees. Keeping a close relationship with existing customers may spur the recognition of opportunities that may be mutually profitable. Potential customers could also arise through the continuation of joining fairs and networking events. New opportunities can also arise through the referencing of previous licensees as well as from their exiting common network of partners. With this in mind, it is important for Company X to nurture their relationships in order to cultivate new business from them. Moreover, Company X is currently developing their business-to-business strategy, seizing this opportunity to incorporate licensing deals within the strategy could be highly favorable.

Company B has two marketing departments, one for their product customers and one for their licensing customers. This raises the question of whether Company X could benefit from using the same structure. Creating another marketing division could mean that the department could focus on one specific type of customer. This department could develop a deep knowledge on how to identify a good customer and also how to market the patents to them. However, creating such a department requires resources, both financial and knowledgeable.

Besides the dissimilarity between Company B and X in terms of financial resources, there is a difference in their core business. Company B has, unlike Company X, licensing as a part of their core business, which would require another distribution of assets within the company. Company A has, like Company X, financial restraints. However, the company does not sell any products themselves since licensing is their main business. Hence, despite their financial position they are able to have a marketing department that only focuses on the licensing customers.

6.1.5 Revenue Generation

Traditionally, licensees pay the licensor in exchange for the use of their patents, as discussed in section 2.1.2. Company X may generate revenues from a scenario where licensing is part of its core business and decrease the dependence upon external financiers. Effects caused by different agreements regard financial obligations and the level of cooperation and mutual exchange as well as licensing as a means to reach a sustainable cash flow.

6.1.5.1 Partnership Contribution to Revenue Streams

Currently, Company X faces a trade-off. The main focus is to expand rapidly, with a 100% increase when it comes to number of geographical markets within the next four years. At the same time, a licensing business is discussed in terms of additional income streams. In order to expand while optimizing revenues, it would be crucial to prioritize the right markets, well-known licensees and to examine traditions and customer behaviors of different segments in terms of sports protection.

Brand awareness and public announcements would support the product market as well as generate new revenue streams. Choosing a licensee with well-known brand and market presence will favor Company X in the long run. Furthermore, acknowledgements such as interest in licensing opportunities will prove the quality and attractiveness of the patents, perhaps in several industries, which may attract further external funding (Organization for Economic Co-operation and Development, 2006).

To build credibility on the market, and attract a wider segment than early adopters, exposure of innovations is needed. Licensing technology to similar industries, or even within the same industry, could potentially increase the appearance of the product as being trustworthy and of high quality, which would appeal to a larger population of end customers. In this manner, separate firms incorporating the same technology will experience economies of scale and mutually advance by greater market appearance. This has, for example, been shown through the increased sales of personal computers by virtue of the MacBook launch, as discussed during the first interview with the Marketing Manager at Company X.

Credibility could also be achieved through embracing a similar strategy as for product commerce. By choosing established partners with superior understanding of the local market, Company X may focus on developing its technology while the licensee may focus on the commercialization and on approaching the right customer segment in an appropriate manner (Arora, Fosfuri & Gambardella, 2001). If this setting were applied in several industries, the chances of maximal market reach would increase dramatically. Thus, revenues would be gained by technological credibility boost and wider application.

Although adjustments to the business model of Company X have to be made in order to execute a licensing agreement, the possibilities of current relationships must be recognized. As discussed in the interviews with Company X, the cooperation with the Asian partner does not only include manufacturing, there is also concurrent product development undertaken as a collaborative project to increase synergies (Lachman & Samet, 2005). Approaching a licensee with a similar relationship to this manufacturer, which has extensive knowledge in the patented technology and complementary assets suited for analogous products, could reduce costs dramatically in the technology adjustment process for the licensee. In turn, there is no need for the licensor to decrease the royalty rate in order for the licensee to get a head start on its competitors, as described by Rockett (1990).

6.1.5.2 Revenues from Licensing Agreements

Business strategy as well as patent and product properties must be considered when designing the financial obligations of a licensing agreement. A fixed fee would result in incentives for the licensee to maximize output, which would be in line with the expressed aim of rapid increase in terms of market reach. However, a considerable lump sum radically limits the demand from potential licensees since it requires significant levels of liquidity. In addition to this, since the patents to be licensed, according to the patent evaluation in section 5.3, are considered hard to imitate, a licensing agreement based on a one-off fixed fee would be illogical (Mukherjee & Mukherjee, 2013).

Combining fixed fee and royalty rate creates a successful licensing opportunity for both parties. A lump sum would benefit the accounting procedures and estimation of net present value, while continuous royalty payments based on some result variable of the licensee are harder to assess. A common structure of compensation is a combination of fixed fee and royalty rate (San Martín & Saracho, 2010), which both tries to limit the standard error in future cash flow assessment as well as widens the range of possible licensees. Thus, the licensee benefits from producing a higher output, to minimize cost per unit, and from being charged a lower, continuous royalty rate. Simultaneously, the licensor gains from raised security in financial compensation compared to when implementing a one-off fee. Thus, by choosing a well-capitalized firm and a two-part tariff structure, there are substantial chances of a win-win deal.

Depending on how the technology would be integrated with the products of the licensee, fixed fee per units sold or royalty based on operating profits may be chosen. Royalty based on revenue is, according to Johnson (2010), favorable when there are difficulties in examining what part of the licensee's product that will be complemented by Company X's patented technology. The collar, for example, is assumed to form a distinguishable part of the licensee's product in the industries analyzed, compared to if the patented product was a natural resource to be integrated with a chemical substance for instance.

In addition to patents, Company X may consider generating additional licensing revenues from its unique set of internal knowledge. In the long run, the firm may, similar to Company A, focus on consultancy services or on including additional features in terms of implementation support. Although, as described in the interviews with licensors, the risk of imitation is low when the licensees have limited knowledge

within the field. By offering consultancy services, this risk might increase. Sharing patents through a licensing agreement requires additional protection of the intellectual property rights, as discussed in section 2.3.1, which could restrict the development of new patentable products.

Even though many licensees or strategies similar to open innovation will improve the quality of future innovations, patent pooling, or similar collaborative projects sharing intellectual property, may raise concerns among stakeholders, as discussed in relation to open innovation in section 2.3.1. Financiers and shareholders wish to invest in Company X, and Company X alone, because of a belief in its business model. If Company X would share its core business and competitive, technological edge with several companies, the investors would indirectly finance plenty of corporate development projects. This may not be desired, hence disputes may be encountered. Even without extensive distribution of patent rights, a licensing agreement may influence the investors' evaluations. Simultaneously, a traditional licensing agreement would in a more appropriate manner estimate future cash flows, which would be appreciated by potential investors.

By both being awarded by the European R&D initiative and collecting a significant income from issuing new shares, as described in the introduction of Company X, the funding is definitely opportune. In addition to the obvious advantage of monetary resources, the proclamations may attract additional investors. Financiers and stakeholders may also be impressed by a promising licensing agreement with selected licensees, which would indicate a wider application area for the technology and thus great potential for further growth and development for Company X and its innovative products.

6.1.5.3 Financial Sustainability through Licensing

Licensing could contribute to a sustainable financial structure by nurturing the core business of product development. Since Company X is an innovative firm, dependent upon its R&D function, licensing may function as a mean to finance future research. Consequently, new patentable innovations may be generated and further licensing opportunities will arise. Licensing form an economic sustainable business and reduces the need for external financing to ensure future viability.

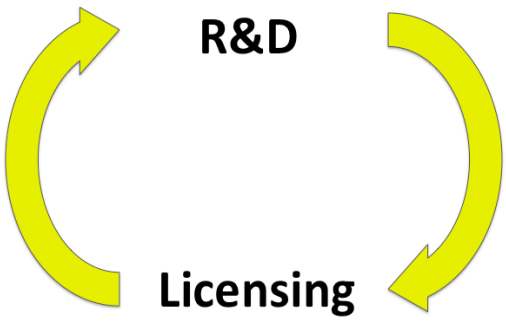

Figure 4. Licensing could finance R&D, which, through innovations and patents, in turn finances the licensing business. In this way, an economic sustainable business model can be achieved.

Sustainability could be achieved through diffusion of risk and increased stability. Instead of offering solely a product to end customers, licensing opens up a whole new market. While currently being contingent on the product market for one single product, as pictured in section 1.1, and its revenue streams, technology licensing offers an additional income, which may level out uneven cash flows and create a more stable financial situation. Since Company X does not offer a wide variety of goods on the product market, licensing would represent a significant increase in the amount of different offers on the market and create a cash flow less exposed to risk. This is in line with the definition of economic sustainability, since various strategies to exploit existing resources would be applied.

In addition to a wider range of offerings, the number of licensees could also create a more stable financial situation. By choosing a large number of licensees, Company X would not be dependent on solely one actor's profit, if that would be the basis for royalty payments for instance. By pursuing licensing agreements on different markets for sporting goods, the risk of poor revenue streams in total may be minimized. This long-term strategy could be applied after an initial period with licensing to a fewer number of licensees. In this way, the process of technology transfer can, in a similar fashion as the mutual learning process described by Hagedoorn, Lorenz-Orlean and van Kranenburg (2008), be tested, improved and eventually conform to a successfully scalable licensing model. In addition to this, the mechanism of feeding R&D with incomes from licensing could be tested and refined at a smaller scale before it is fully applied.

Through technology licensing, there is no need to invent around or "reinvent the wheel", which will result in a more efficient use of both tangible and intangible resources - both for individual agents as well as for society as a whole. Most definitely, licensing will generate a more economically sustainable society, as defined by the World Conservation Union (2006) and described in section 2.4.1, since financial resources will be used to fund new innovations, gaining all citizens being part of a developing community. Furthermore, licensing conceive a possibility to retain benefits from innovation through temporary local monopoly, while sharing knowledge which, because of its properties, will never be undone nor drained. In addition to this, widespread licensing would optimally result in an economy where every company focuses on what it does best. In sharing this knowledge through licensing agreements, expertise within a wide range of technological fields may be accessible for a large number of firms. The efficient use of technical know-how as a common good will serve both the generations and innovations of today and tomorrow.

The ambition for Company X is to, in a long-term perspective, conduct a licensing business not solely focused on profits, as discussed in section 5.1.2.1. To let the patent families be available to all could contribute to a standard, just like for some of the patents possessed by Company B, and save a larger number of lives. With an established technology, an option could be to incorporate a patent pool (West & Gallagher, 2006), where contributors may enjoy the benefits of Company X's patents and the other way around. In this manner, the patent pool could be limited to certain markets or sports segments, which could function as a mean to choose what competition to face in different industries. This approach could include difficulties in securing the quality of end products on the market, but could also lead to a scenario where all actors in the industry collaborate in the development of advanced

technology. The use of joint resources would most certainly be more efficient than exploiting them separately, hence open innovation would be a sustainable licensing option.

Despite the idea of not being profit-driven, a strategy inspired by open innovation could result in revenue streams in other areas of the organization, in terms of being a more attractive employer for top-talents when working for a greater good, for instance. In terms of utilizing resources such as patent, know-how, current partnerships and trademark more efficiently, licensing is most definitely a sustainable option.

6.2 Internal Perspective of Licensing

Company X may deliver value to its customer segments by using partners within manufacturing, distribution and legal counseling. In addition to this, a team dedicated to licensing could be beneficial in order to set up a licensing business. Considering Company X's current financial status, there may be concerns regarding the investments required to carry out the key activities needed. The analysis is based on prior research, corporate documents, interviews with Company X and the interviews with licensors.

6.2.1 Cooperation with Partners

To maximize benefits from licensing, Company X could use their existing network. By using established partnerships to boost licensing business, the licensor, the licensee and the partners could all gain from cooperation, connecting with Lachman and Samet's (2005) suggestion on how to boost benefits, and interviews with Company X. Benefits could be amplified by creating synergies and economies of scale through integration or joint product development, for instance. This would be a way for a smaller company with limited recourses to still be able to create great value beyond its intellectual property. Additionally, they could use reference clients and the company's external network to identify new licensees. If benefits for both Company X and other network partners are clearly demonstrated, incentives for network partners to help identifying licensees for Company X could be created.

If a partner who manufactures parts for Company X additionally could contribute with manufacturing for a licensee all parties involved could gain economies of scale. Furthermore, both Company X and its manufacturing partner could gain additional sales and the licensee would not have to identify a suitable manufacturer or spend resources on building a new relationship from scratch. Coupling a licensee with an existing manufacturer of Company X also prevents creation of, or strengthening of, competitors to Company X's manufacturer. Company X's partner's position is thereby strengthened through hindering new business for competitors of Company X's partner.

Company X could use distributing partners from its own network to expand the market reach of the licensee, and Company X could expand its reach through the licensee's network. Company X's network will moreover be a valuable asset when trying to identify new possible licensees as it both expands the company's communication reach and directly invites to possible synergies through the common partner of both Company X and the licensee.

Collaboration with existing partners and possible future licensees could be done in an open manner. By partnering with firms using similar knowledge or with capabilities usable for Company X, increased benefits could be created, in accordance with West & Gallagher (2006). Shared external knowledge could for instance be used by Company X to learn about new markets, and extend their product's applicability. Furthermore, Company X could improve their technology to fit more distant industries, resulting in better protection in a wide range of new markets. Thus by cross-licensing or through an open partnership, licensing of IP and know-how could result in great non-monetary benefits, like increased technology trust and recognition.

Existing legal counsel of Company X will be a much-needed resource for future licensing business. Contributions like council on terms, knowledge from pitfalls in licensing, contract drafting and more will help Company X not to get stuck in resource draining litigations and fortunately ensure favorable licensing deals. For example, a proper licensing contract will lower risks and the possibility of long future disputes about what was agreed upon. Company X should therefore always get a formal licensing contract drafted by a lawyer and signed by both parties.

Previous licensees could help Company X gain new licensing business and could prove to be a crucial part in reaching customers that has not been identified through internal efforts. Previous licensees could serve as a reference for future possible licensees. It is then crucial to maintain a good track record to strengthen trust and show that the minor experience Company X have within technology transfer will not be a weakness. As licensing deals are made primarily between people, trust and a good rumor could prove to be vital parts in becoming successful within licensing.

6.2.2 Internal Support

In order to create value and conduct a beneficial licensing business for both Company X and the licensor internal contributions and resources will be needed. Thus, structuring of processes and organizing for effective use of internal resources will be needed as well. As it is in the identification process that most companies fail in licensing technology, emphasis could be placed on structurally organizing. Corresponding to the organizational approaches explained by Lichtenthaler, Holger and Conley (2011), Company X could dedicate a team to work with licensing full time, even if that team only consists of one person. Since licensing is a new frontier for Company X, recruitment and organization of a licensing department have to be carried out. As this department cannot have all the information and know-how of the IP or other crucial parts for the licensing process, organizing for participation, ensuring contributions from other parts of the organization, will be needed. Since one person in a smaller company, like Company X, makes out a bigger part of the total company, additional widening of responsibilities might be met with resistance. Thus, top management support and engagement will play a crucial role in getting people to participate in licensing activities, clarifying all possible benefits to the core business.

Communicating the objectives and benefits of licensing and aligning them with the business strategy, as well as choosing the right licensee, will be important parts to succeed in licensing. Because of Company X's current, limited recourses, an expansion and development of a licensing business comes with great risk. Draining the already limited resources of the company and losing focus on the main business objectives could have fatal consequences. It is therefore of utmost importance that

Company X manages to identify which licensing opportunities that can be synchronized with today's main business objectives and which opportunities that will scatter focus and result in resource drainage.

By conceptualizing and packaging IP and know-how, as well as structuring and organizing for transfer, the licensing process should make it faster and more efficient. Even though differentiated packaging requires a great deal of work, in understanding the licensee's business conditions, it is thought to both speed up and improve the process of technology transfer, which will lead to a more satisfied licensee. Thus, fewer, larger licensees could result in less customization and less work.

Licensing of intellectual property and know-how is only sustainable as long as you have something new to offer that isn't available to others. Patents give only a limited time of protection. When the patent expires, exclusive technology becomes available to all. To make licensing a sustainable business, the company therefore needs to invent over and over again, improving or expanding their technology. Company X thus have to continue R&D for licensing to be a long-term business. As there is also a risk that licensing will shorten the product life cycle, additional pressure could be put on R&D. However, firms that have innovated once have a greater possibility of innovating again, thus good chances of creating a sustainable cycle. Additionally, since shortening of the R&D process could be bought in some way, for example through hiring additional staff, economic sustainability could be negatively affected by licensing as well. It is therefore clear that direct, or indirect, boosts of income from licensing have to exceed such negative effects brought by licensing to contribute to economic sustainability.

6.2.3 Resources Needed for Licensing

Taking into account the limited financial resources Company X has, the new employees for the licensing business will have to be kept at a minimum. New employees dedicated to licensing will play an important role, as stated in section 2.3.2. Although, with the licensing business starting small, the number of employees can grow gradually. Hence, also taking in mind the difficulty in predicting the success of licensing and the future width of the business. Considering the size of Company X and its workforce, licensing and a strategy of open innovation may be beneficial and contribute to enhanced product development, as discussed in section 2.3.1. By using ideas from licensees, external knowledge and expertise may be shared with Company X and benefit its growth.

In parallel with recruiting talent within licensing, it is important for managers like the CEO to visualize to the rest of the company the potential success that licensing could prove to have for Company X. This will help the new employees to contribute to the core business, even though they have different target customers. In addition to knowledge from new employees, Company X has the possibility to take advantage of the expertise available internally, since several employees have experience in licensing. This also means that since the employees having experience with licensing work in different parts of the organization, they can apply their knowledge to different processes in the value chain. Exploiting the knowledge related to licensing within the boundaries of Company X will help make use of their resources more efficiently.

The patents that Company X has today will be an important resource when licensing. The patents do not have any backward citations, which make licensing easier to carry out. The geographical diffusion of their patents also help to create possibilities for future licensing, making it possible to make exclusive agreements with separate parts of the market that they have patents in.

In Company X, there are relatively few employees, compared to the market they are reaching. As a consequence, each person contributes to a significant part of the value creation. This means that the company is dependent on the knowledge and responsibility that each employee possesses. If one employee would leave, the void could create crippling effects. In addition to this, employees also have tacit knowledge, knowledge difficult to transfer to others by means of writing it down or verbalizing it. Consequently, the relationship with the licensee will have to be close enough for the licensee to get a deeper understanding of the valuable know-how and knowledge of Company X.

The trademark of Company X is a valuable asset that, for instance, could help create bargaining power when negotiating with potential licensing customers. In addition to this asset, financial resources are crucial in order to be able to carry out the investments, in marketing, recruitment and packaging of the licensing deal, needed for Company X to employ a licensing business.

6.2.4 Financial Implications

There is a substantial difference between production and marketing of a physical product and the creation and commercialization of a licensing offer. First of all, licensing offers will not be directed towards end customers, but towards businesses and corporate partners, hence the business model and commercialization channels need to be extended. In addition to this, the current costs of extensive product development, manufacturing and commercialization will not diminish when a new offer, such as licensing, is to be launched. In addition to this, since the brand is well-known for its high-quality product, as described in section 1.1, the licensing package needs to conform to a similar standard. Creating an excellent licensing offer from scratch will require financial effort. When for the first time introducing licensing, in addition to product commerce, there will incur learning expenses difficult to estimate. The cost structure will both be expanded and more complex.

The financial ambition to reach net positive cash flow in 2017 was recently adjusted to allow for a more aggressive growth (Company X, 2016), which may signalize that Company X is willing to compromise on short-term financial, momentary gains to secure a prolonged dominant position on the market. This could be a crucial step towards a successful, strategic licensing approach for Company X and demonstrate a focus on long-term gains rather than short-term wins.

Licensing agreements, and Company X's current business model, include close partnerships and collaboration for a long period of time, as described in the interview results part of section 5.1.1.2. Licensing related costs will occur due to research, support, packaging, information exchange, adjustments and knowledge transfer when committing to and maintaining the relationship. In addition to close relationships with a distributor on the German and Austrian markets, Company X invests time and efforts in, for example, enriching the relationship with its producer in Asia through

joint product development. The more relationships to develop and nurture, the more time and financial efforts are needed to visit, support and engage the partners.

The maintenance of the network of licensees will not only depend on the number of licensing agreements, but also on the possibility of forward citation. If similar relationships are applied within the licensing business as in the product commerce, there may be several middlemen between Company X and the end-user of the product. Supervision of product quality would quickly be excessive, which may imply that licensees should be restricted in terms of forward citations in order to secure an enduring, high product quality.

Considering Company X's current financial situation, there are concerns about whether its resources will make a licensing business feasible. Since no net positive cash flow has been achieved since research started in 2005, there is a need for external funding to be able to proceed with a licensing offer. Motivating increased costs may be challenging in internal communication as well as towards external stakeholders (West & Gallagher, 2006).

Despite historically negative income statements, recent announcements do show that there is a brighter future ahead. The gained financial capabilities may not be used to fund investments in setting up a licensing structure, but they will probably make other resources, that previously were attached to R&D, available for use.

6.3. Comparison of Business Models

The current business model illustrate Company X's business today, and the future business model shows the perception of the value creation, value capturing and value delivering process, of the firm given a licensing business (Osterwalder & Pigneur, 2009).

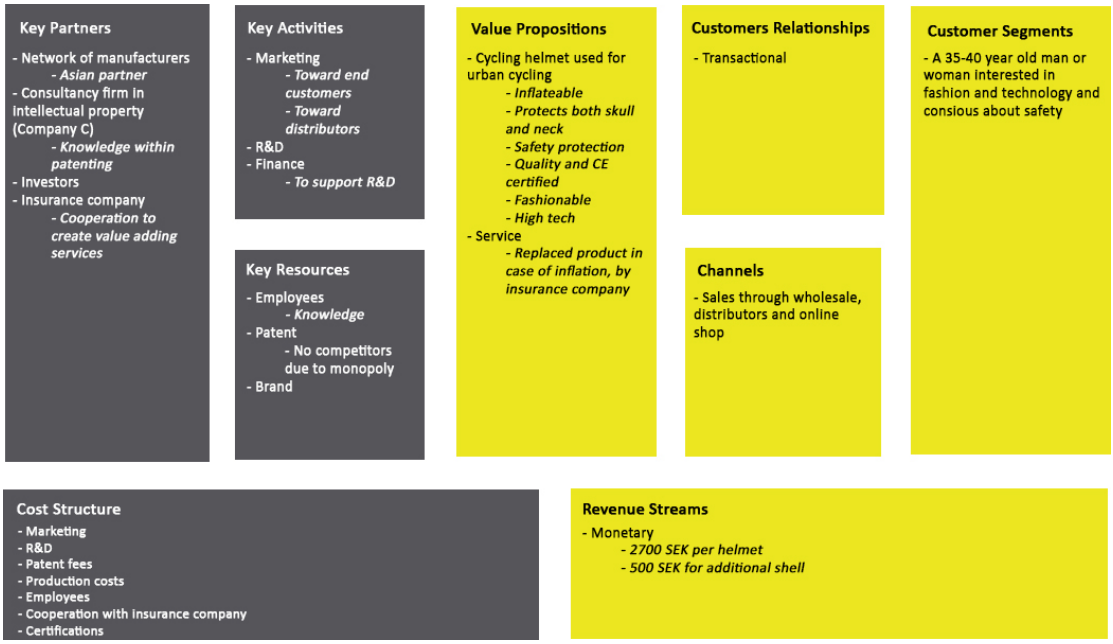

Figure 5. A modified version of the Business Model Canvas (Osterwalder & Pigneur, 2009) modeled to illustrate Company X's current business. The right hand side shows the external elements of the business model, how the company creates and captures value today, while the left hand side shows the internal elements, how Company X delivers value to the customer segments.

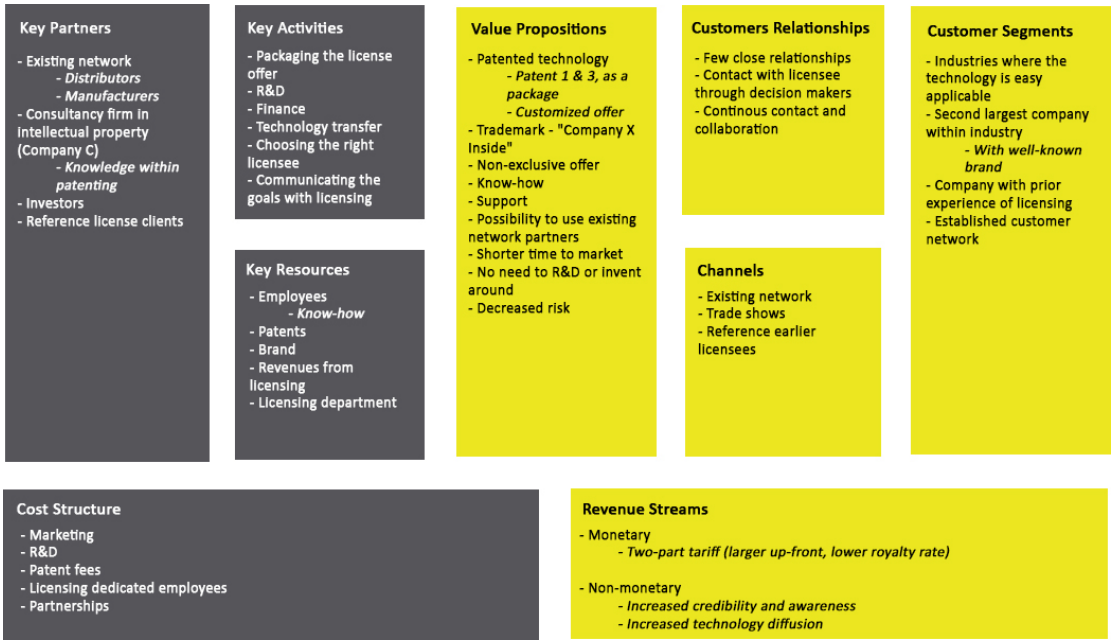

Figure 6. A modified version of the Business Model Canvas (Osterwalder & Pigneur, 2009) modeled to illustrate Company X's future licensing business. The right hand side shows the external elements of the business model, how Company X could create and capture value from a licensing business, while the left hand side shows the internal elements, how Company X could deliver value to the customer segments.

As shown in the two illustrations of the Business Model Canvas, Company X will have to make significant adjustments in their value creation process, as well as within their organization in order to successfully license their patents. The Business Model Canvas is an effective tool for presenting the differences that Company X will have to make in order to successfully license their patents. However, the linkage between the parts is not included, neither is the relation between the internal and external perspectives. Thus, these will be presented below.

The value proposition is perhaps the most obvious alteration. Company X's current value proposition is a product with a clear and defined customer application. A license, however, does not have a set function for the customer. Moreover, the end customers of the current product do not need to have any understanding of the advanced technology to be able to obtain value. The licensee, on the other hand, is required to possess know-how, and in turn demands support, for the technology to be valuable and useful.

As a consequence of the changed value proposition, the customer segment is naturally altered. The customers would no longer be individuals, but companies in industries where the technology would be applicable. Hence, the channels used to reach the customer would be changed from business-to-costumer to business-to-business. Referencing previous licensees could be an important strategy to reach customers.

Having close relationships, and not only transactional ones, with partners is favorable, especially in the beginning. Subsequently, allocating more resources on developing and maintaining relationships would be a key activity in the future business model. In addition to this, key activities would include choosing an appropriate licensee as well as communicating the corporate goals with licensing within the firm.

Organizing a licensing department is an important change that would be a valuable resource for Company X. Bearing in mind the shift of the value proposition, the employee's knowledge and know-how of the technology would be even more of a competitive advantage than before. The revenue streams gained from licensing would become a crucial resource in the sense that they create an opportunity to continue with research and development activities. With licensing, non-monetary benefits would be vital and perhaps just as valuable as the monetary exchange, especially since the long-term ambition with licensing compensation not necessarily need to be monetary. Closer relationships with customers and partners will have a direct affect on the cost structure. Setting up a licensing team is also a costly process that will contribute to a different cost structure.

The value proposition would be significantly changed, and therefore a lot of changes would occur for Company X regarding the external aspects. Consequently, to deliver the value, the internal aspects would have to be changed as well. Hence, all parts of the Business Model Canvas are linked and would need to be aligned according to the licensing strategy.

7. Conclusion

In this chapter, conclusions with regard to the purpose, to explore licensing as a potential strategy for Company X to commercialize their existing patents, will be presented. The conclusions will connect to the research questions stated in chapter 1.2. The main research question regarding how Company X could license their patents successfully is divided into two sub-questions to clarify the internal and external perspectives of successful licensing. Finally, a long-term perspective is presented.

Successful licensing for Company X is defined as reaching a large number of end customers, receiving recurring revenues and achieving long-term economic sustainability. This description aligns with the company's wish to save a larger number of lives and its ambition to attain a positive financial result.

1.1 How could Company X create and capture value from licensing?

It would be favorable for Company X to start by non-exclusively licensing a package of patent 1 and 3. The reason for this is the greater value they create when applied together. In the beginning, it would also be beneficial for Company X to focus their resources on a few close relationships. This would enable control of the licensee's product quality, which is important for Company X's brand and the adoption of their technology.

Using a bigger fixed fee and a small royalty rate would be advantageous to maximize market reach and technology spread as well as long term sustainability. The lump sum provides increased liquidity for Company X and economies of scale for the licensee. Furthermore, royalty per unit sold provides long-term sustainability since predictable, recurring revenue makes Company X less reliant on external investors.

An appropriate licensee would be a firm that has experience of licensing. Reasons for this is that they would have a greater understanding of the value of the patents and a higher probability of possessing resources needed to incorporate external technology into their own product. In choosing the second largest player in the industry, incentives for wide technology diffusion would be significant for the licensee. Selecting a licensee with an existing, deep market reach could also be essential. The logic behind these strategies is the company's explicit wish to reach as many end customers as possible.

1.2 How could Company X organize for licensing?

According to the research findings and the analysis, Company X could begin with organizing for licensing by creating a team dedicated to develop their licensing business. They could take advantage of the existing knowledge and experience that the employees within the company possess to make efficient use of existing resources and thereby apply a sustainable perspective to their licensing business model.

In addition, Company X needs to nurture their existing network to reach potential customers for licensing and create additional value for the company, the licensee, and external partners. Company X could also couple the licensee with its existing

manufacturer in order to strengthen the manufacturing partner as well as create synergies. It would be important to take existing partners' networks in mind in order to not negatively affect the partner's competitive advantage.

Licensing would require investments in the internal organization, such as in recruitment and packaging of the licensing offer, as well as in relationships with partners crucial for licensing. The costs may be difficult to estimate since no prior licensing activities have been undertaken within the organization. Although, by incorporating licensing into Company X's business model, costs of innovation and R&D could be covered by revenues from licenses. In this manner, a licensing business model would contribute to an economically sustainable business.

Furthermore, licensing would also create a possibility to attain value in co-operation with external companies. By adapting an approach similar to open innovation, both external and internal ideas can be used to improve the innovation capabilities of the firm and the technology. A licensee may, for instance, contribute with improved product features, which may be shared with Company X.

The answers to the two questions above regard the short-term perspective. However, in the long-term, when Company X has an established way to license their patents, they may increase the scale of their licensing business. Proving that Company X's technology is widely applicable can attract additional licensing customers. To incorporate licensing as a part of Company X's core business is also beneficial, not only to communicate the importance of licensing throughout the firm, but also in order to prioritize and dedicate resources to this future key activity.

Potential revenues and non-monetary benefits are untapped while Company X's intellectual property is not licensed. Since patents only give a limited time of protection, the earlier a licensing business can be implemented, the greater, positive impact could licensing have on the core business and the company's market reach. Great potential lies in the technology, which has proved to be of interest within several industries, and in the know-how that Company X possesses.

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Appendix I – Interviews with Company X

Interview template 1

CEO, Company X, 2016-01-27

- Kan du berätta om dig själv?
- Kan du beskriva företaget Company X?
- Hur började Company X?

Interview template 2

Questions asked to all employees at Company X and the employee from Company C:

Introduction:
- We are conducting a bachelor thesis for Chalmers
- The focus of the study is to evaluate a potential licensing strategy

Regarding the company:
- How would you describe Company X?
- From your perspective, what is Company X's business strategy?
- How would you describe Company X's customers?
    - Number, customer content, customer revenues etc.
- Potential new customers and markets?
- What defines a good customer for Company X?
- Which firms are your biggest competitors?
- What will be different for Company X in three years?

Patent portfolio:
- How would you describe Company X's patent portfolio?
- How would you categorize it?
- What are your opinions on patents and the patent system?
- What possibilities do you see among Company X's patents?

Licensing:
- What is your opinion on licensing as a concept?
- What possibilities do you see with licensing?
- In your opinion, are any of Company X's patents more suited for licensing?
- What threats do you see with licensing?
- What markets are in your opinion best suited for licensing of Company X's patents?

Closing questions:
- Would it be okay if we were to contact you by mail or telephone if any future questions would arise?
    - Name:
    - Email:
    - Telephone:
- Thank you for taking the time to meet with us, for your input and your commitment.

Specific questions to some of the interviewees, in addition the above:

Marketing Manager, Company X, 2016-02-16

Patent portfolio:
- At what stage in the development of a new technology do you see as most fit to file for a patent?

Licensing:
- What markets for licensing do you consider as most interesting?

Director of Safety and Regulatory, Company X, 2016-02-16

Licensing:
- Do you see any threats of licensing because of differences in legal incapacitation?

Patent lawyer, Company C, 2016-02-16

Patent portfolio:
- What are Company X's patent portfolios strengths/weaknesses?
- What could stand in the way of a possible license deal?
- What is included in the fourth patent application?
- What stage in the development of a new technology do you see as most fit to file for a patent?

Licensing:
- What type of licensing deal/setup do you find best suited for Company X?

Interview template 3

Questions asked to each person:

CEO, Company X, 2016-04-21

- Ser ni något problem med att licensera ut flera patent till samma licenstagare?
- Hur går tankarna kring kommande produktversioner, kommer det en version 4.0 till exempel?
    - Om det finns tankar om kommande produktversioner, hur skulle licensieringsavtalen behandla dessa?
- Önskas ett samarbete som ger ömsesidiga produktutvecklingsfördelar, t.ex. genom att vidareutveckling av Företag X teknologi hos licenstagaren integreras enligt avtal i Företag X egentillverkade produkter?
- Kan det vara intressant att arbeta med så kallad co-patenting?
- Hur ser du på att licensiera till aktörer inom cykelhjälmsbranschen?
- Kommer det att vara intressant att licensera ut teknologin och hjälpa till med tillverkning/förmedla kontakt med er tillverkare eller tänker ni att kunderna tillverkar själva?
- Säljer och kommersialiserar den asiatiska partnern produkter?
- Har ni någon kontakt med den asiatiska partnerns övriga samarbetspartners?

    - Hur ser den i så fall ut?
- Hur skulle det exklusiva avtalet med existerande huvudleverantörer (i Tunisien/Portugal) påverkas av en licensieringsöverenskommelse?
- Vilken roll kommer licensiering spela för Företag X företagsstrategi de kommande åren?
- Hur kan licensiering inkluderas som en del i Företag X kärnverksamhet?

Questions aimed to be answered by Company X's CFO, which instead were covered by the CEO of Company X:

- Har du någon tidigare erfarenhet av licensiering?
- Har någon i ditt team tidigare erfarenhet av licensiering?
- Vad ser du för möjligheter med licensiering av patent?
- Vad ser du risker med licensiering av patent?
- Vilka typer av kassaflöden är Företag X i behov av just nu?
- Hur tycker du att Företag X ska hantera de intäktsströmmar som licensiering kan generera?
- Berätta om det stora bidraget som Företag X nyligen fått från EU.
- Hade sannolikheten att få stödet påverkats om Företag X hade licensierat ut patent?
- Kan detta bidrag ge ökat ekonomiskt utrymme för licensiering?

Marketing Manager, Company X, 2016-04-27

- Hur kontaktas företags-/organisationskunder idag?
- Hur har ni kommit i kontakt med distributören i Tyskland/Österrike och hur ser den relationen ut?
- Hur tror du att Företag X existerande nätverk kan ge värde för en licenstagare?
- Vad ser du att marknadsföringsavdelningen kan göra för att Företag X ska kunna licensiera ut?
- Vad innebär "ett företag med ett starkt varumärke" för dig? Hur definierar du ett starkt varumärke?
- Vad innebär "ett företag med stor räckvidd" för dig? Hur definierar du stor räckvidd?
- Vid licensering av teknologi, vad anser du om att licensera ut varumärket Företag X samtidigt?

Appendix II – Interviews with the Licensors

Interview with licensors, Company A and B separately, 2016-04-26

Questions asked regarding strategy:

- Berätta om den strategiskt viktigaste teknologi ni licensierar ut idag.
- Hur många licensieringsavtal har ni slutit?
- Har du varit praktiskt involverad i ett licensieringsavtal?
    - Har du varit med om licensiering av icke-beviljade patent?
        - Hur bedömdes patentens lämplighet för licensiering?
- Vad ser du för möjligheter med licensiering av patent?
- Vad ser du för risker med licensiering av patent?
- På vilket sätt förändrades er affärsmodell när ni började med licensiering?
    - På vilket sätt ändrades resursfördelningen?
- Hur ser du på betydelsen av licensiering för R&D-verksamhet?
- Hur tycker du att inkomstströmmar från licensiering bör fördelas i företaget?
- Hur rättfärdigas investeringar i licensiering internt och externt?
- Hur identifieras en lämplig licenstagare?
    - Hur anpassas kontraktet till licenstagaren?
    - Erbjuder ni exklusive/non-exklusive licensiering? Varför?
    - Har ni licensierat till aktörer inom samma bransch?
    - Ingår egen produktutveckling som del av lämplighetsbedömningen?
- Säkerställer ni licenstagarens produktkvalitet?
- Vilken påverkan får licensiering på övriga, existerande produkterbjudanden?
- På vilket sätt skiljer sig sättet ni når potentiella kunder för licens respektive produkter?

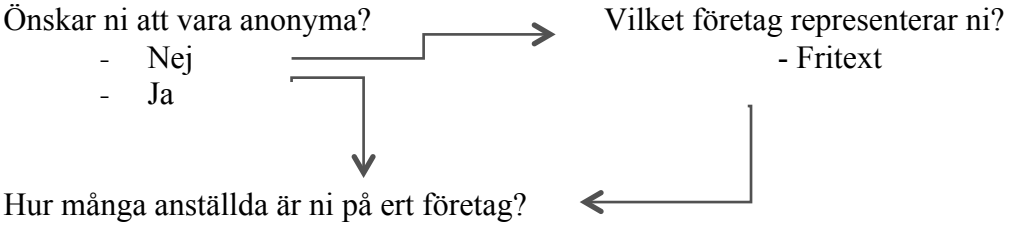
Questions asked regarding operational work, with respect to the company's most important technology:

- I vilket syfte licensierar ni? Vad var ert mål?
    - Uppnådde ni målet?
    - Vilken strategi använde ni för att uppnå målet?
- Vilka incitament fanns för er licenstagare?
- Vilken typ av samarbete har ni med er licenstagare?
    - Eventuell följdfråga: Hur stöttar ni er licenstagare?
    - På vilket sätt skiljer det sig från samarbete med t.ex. distributörer och andra samarbetspartners?

- Får vi kontakta dig för ytterligare frågor?
- Vår rapport är en offentlig handling. Önskar ni vara anonyma eller är all information idag publik?

Appendix III – Questionnaire

Questionnaire, 2016-04-21
Questions and answers possible in the questionnaire:



Inom vilken/vilka industrier har ni verksamhet?
- Ridning
- Skidåkning
- Medtech
- Friluftsliv
- Bil

Vilken är er största geografiska marknad? Om Sverige, skriv även er största marknad utöver Sverige?
- Fritext

Hur stor var er årliga tillväxt i procent av omsättningen år 2015?
- Fritext

Har ni någon produktutveckling/R&D?
- Ja
- Nej

I hur många länder finns era produkter representerade?
- 1-3
- 3-10
- 10 eller fler

I hur många städer finns era produkter representerade?
- 1-10
- 10-50
- 50 eller fler

Har ni licenserat in teknologi tidigare?
- Ja
- Nej

Har ni licenserat ut teknologi tidigare?
- Ja
- Nej

Vilket/vilka av följande patent är mest intressant för er?

- Airbagteknologi – konstruerad som en finger-struktur för att åstadkomma en 3D-form
- Plagg – med inordnad airbag, för att skydda hals, nacke och huvud
- Båda ovanstående
- Inget av ovanstående

Varför skulle ni vara intresserade att licensera in denna teknologi?

- Kortare time to market
- Minskad risk
- Ökad kunskapstillgång
- Ökade konkurrensfördelar
- Företagstillväxt
- Undvik rättstvist
- Other: Fritext

Hur stor är sannolikheten att ni inom de närmsta fem åren kommer att integrera ett plagg* med airbagteknologi** i er produkt?

- Klicka i en skala på 1-5 (låg till hög sannolikhet)

*Plagg – med inordnad airbag, för att skydda hals, nacke och huvud
**Airbagteknologi – konstruerad som en finger-struktur för att åstadkomma 3D-form

Känner ni till Hövding?

- Ja
- Nej

Något ni vill tillägga?

- Fritext

Får vi kontakta er för ytterligare frågor? Om ja, skriv in mailadress nedan.

- Fritext