Backsourcing intellectual capital – Is the damage already done, or can it be prevented

A case study from a knowledge-intensive firm

Authors: Daniel Andersson & Pontus Eriksson

Supervisor: Zsuzsanna Vincze
Abstract
In a globalized world where competition has risen, it has become more and more popular for companies to outsource non-core activities. The main reasons for doing so are due to cost reductions, improving organizational focus, better flexibility and improve product quality, delivery and service. As outsourcing is increasingly growing in popularity, the problems associated is more prominent. For some companies outsourcing is a bridge to all the related benefits, while for some companies it can be a nightmare. When the expectations aren't met, the focal firm will have to re-evaluate the decision. The decision to will therefore to renegotiate with the vendor, switch to another vendor or to backsource. Backsourcing is when activities which previously has been outsourced is brought back in-house.

Previous research on backsourcing has focused on functions such as information technology and information system. Little attention has been given towards production and the risk involved. In order for the vendor to produce, knowledge need to be shared. This can be complicated for knowledge-intensive firms considering their value creating resource is knowledge which derives from their intellectual capital. As the know-how of the product is shared to the vendor, the research made is transferred.

If the knowledge-intensive firm is dissatisfied with the entered outsourcing agreement, and wishes to end the agreement the know-how will still continue to be shared. Causing the focal firm to feel locked-in with the vendor. If they choose to backsource, the risks related to the shared knowledge appears. As the knowledge is already shared, the question if it can be prevented arises. Which leads to our research questions:

*RQ1: What are the risks related to intellectual capital when backsourcing?*
*RQ2: How can these risks be prevented?*

To answer these questions, a case study from a knowledge-intensive firm who faces this problem is examined with our theoretical framework. The risk identified were opportunistic behaviour with the shared intellectual capital, reputational risk, risk with reintegrating intellectual capital, investment risk and risk from earlier contractual arrangement. To prevent these revealed to be difficult but not impossible. To summarize the preventing measure identified, they revolve around legal protection from well-written contracts and patents, careful execution plan, use of external expertise and by avoiding high investment through establishing a pilot plant.

*Key words: Intellectual capital, risks, outsourcing, backsourcing, knowledge-intensive firm*
Acknowledgement
Firstly we would like to thank our supervisor Zsuzsanna Vincze for her support throughout the entire thesis. To be able to drop-in anytime and discuss the progress of the study have been extremely valuable.

Secondly, we want to thank Company X for being able to research their back sourcing decision. Also that they allowed us to observe and interview them. A special thanks goes to our supervisor at Company X, who further added valuable insights towards solving the research questions.
Innehåll

1. **Introduction** ........................................................................................................... 1
   1.1 The practical problem ............................................................................................ 1
   1.2 Background ........................................................................................................... 2
   1.3 Backsourcing ......................................................................................................... 2
   1.4 Research gap ......................................................................................................... 4
   1.5 Research Question ............................................................................................... 6
   1.6 Purpose ............................................................................................................... 6
   1.7 Disposition .......................................................................................................... 6
   1.8 Delimitation .......................................................................................................... 6

2. **Theoretical framework** ......................................................................................... 7
   2.1 Intellectual capital ............................................................................................... 7
       2.1.1 Knowledge-intensive firm ........................................................................... 9
       2.1.2 Knowledge sharing & Knowledge leakage .................................................. 10
       2.1.3 Protecting Intellectual capital .................................................................... 11
   2.2 Outsourcing .......................................................................................................... 13
       2.2.1 Reasons for outsourcing ............................................................................ 13
       2.2.2 Forms of outsourcing ................................................................................. 16
       2.2.3 Risks with outsourcing .............................................................................. 17
   2.3 Backsourcing ........................................................................................................ 21
       2.3.1 Reasons for backsourcing .......................................................................... 22
       2.3.2 Risks with backsourcing ........................................................................... 24
   2.4 Theoretical framework ......................................................................................... 27

3. **Methodology** ........................................................................................................ 29
   3.1 Preconceptions ...................................................................................................... 29
   3.2 Research philosophy ............................................................................................ 29
       3.2.1 Ontology ...................................................................................................... 29
       3.2.2 Epistemology .............................................................................................. 30
   3.3 Research approach ............................................................................................... 31
   3.4 Research design .................................................................................................... 32
   3.5 Research strategy .................................................................................................. 33
   3.6 Data collection method ......................................................................................... 34
       3.6.1 Observations ............................................................................................... 35
       3.6.2 Semi-structured interviews ....................................................................... 35
       3.6.3 Interview guide ......................................................................................... 36
   3.7 Data processing .................................................................................................... 37
   3.8 Ethical considerations ........................................................................................... 39
   3.9 Quality criteria ..................................................................................................... 39
Figure 7. Summary of 2.3.2 .................................................................................................................. 26
Figure 8. Theoretical framework ..................................................................................................... 27

Table 1. Duration and content of the interviews ............................................................................ 37
Table 2. Reasons for backsourcing .................................................................................................. 59
1. Introduction

This chapter will firstly address the practical problem for the case company. Further this chapter will introduce the background to later describe backsourcing and intellectual capital. To lead the readers to the research gap and later the stated research question, an argumentation for research made in the field of backsourcing and intellectual capital will be described. After the purpose and delimitations with this thesis will be highlighted.

1.1 The practical problem

Company X is a knowledge-intensive firm with its core value being intellectual capital and their competitive advantage is built on technology backed up by a strong patent portfolio. Company X way of having competitive advantage is through unique and superior products compared to their competitor. Currently Company X have 2 assorted products available for customers, however a new product is in the process of being commercialized. This has made them to reconsider previously taken outsourcing decision regarding manufacturing of the two other products.

The first product, called Product A, is manufactured in another European country. The production of product A is a complex and difficult process, requiring Company X to share know-how to the outsourced producer. It also requires special tools and skilled personnel to secure a satisfactory finished product. So far, product A is not being ordered in large enough quantities to obtain cost benefits from large orders. Due to low quantity and the complex production process, this option is not the most cost efficient.

Product B is manufactured in the southern part of Sweden, outsourced to a company in the same industry as company X. For the manufacturing firm to be able to produce the product, Company X must share the know-how of the product. Product B is easier to manufacture compared to Product A. The producing firm is trusted with the product formula, and is responsible of the production of the product, storing the finished product and the distribution to Company X customers. Company X are aware that the cost of producing the product is too high and that the producing company is in possession of critical knowledge.

Product C is a new product for Company X which is currently in the development phase. They have started producing the component them self and outsourced the final assembly to the producer of product A. Their task is to develop the production technique to then share their know-how to Company X. One of the components used in product C is patented by that company, making a full reintegration difficult. They have therefore hired another firm to develop another solution for that component. These aspects lead Company X to decide whether to produce the entire Product C itself or outsource it. Because of the similarities in the manufacturing of the products, the company have examined potential synergy effects with producing all products in-house. Company X are aware that the current production costs for all products are too high to be able to compete in the market, and they are therefore evaluating different options.

One of these options are whether to backsource the production of all products, and manufacture these products in-house. By doing so they gain more control over the manufacturing process and synergy effect between the products resulting in lower production costs. However, this option could potentially harm the relationship with the manufacturing firms because they are
aware of the different know-how, which could result in the creation of a potential competitor. If Company X decides to produce all products in-house they will most likely cancel the partnership with the two manufacturing firms. Due to different intellectual capital being shared, the ending of the partnership might have different consequences. Consequences that need to be identified and prevented. Seeing that product, A has a more sophisticated production process than product B, this outsourced activity will be difficult to bring back due to the complex know-how of producing. Product B could be difficult to bring back in-house because of the outsourced partner knowing Company X customers, the produced quantity, them competing on the same market, and storing & distributing the finished product. Because they handle the distribution they know how much and the frequency of orders for each customer.

To evaluate if ending the partnership with the two manufacturing firms and backsource the activities are reasonable, the risks involved with backsourcing intellectual capital must be identified. When identified Company X can potentially prevent the risks from happening and thereby avoiding costly consequences.

1.2 Background

We have chosen to write this thesis on commission for Company X which is a R&D company formed in 2014 located in Sweden. Company X is a knowledge-intensive firm who focus on developing new innovative products. Due to their focus on innovations they must be careful with how they handle their intellectual capital such as know-how, critical knowledge, information, intellectual property and experience. Therefore, the company want to be anonymous, because if the information regarding the products or the strategic direction they’re heading is leaked, they could lose their competitive advantage.

Company X presented some areas which they wanted to be researched. Currently they are handling their supply chain on an ad hoc basis, revealing need for improvement there. They mentioned that they might want to produce all their product in-house, which made us curious about the current research in bringing an outsourced activity back in-house.

After thoroughly researching the concept of backsourcing, we found that there is limited research on backsourcing. Because of failing outsourcing, backsourcing is now a growing phenomenon (Kotlarsky & Bognar, 2012, p.79-80). We also noticed that the current research on backsourcing is about bringing back IT and Information system activities and less on manufacturing activity. When looking closer, the research that is done is towards How & Why companies backsource and very little regarding the risks involved with backsourcing. From the perspective of a knowledge-intensive firm the dilemma of backsourcing shared knowledge also appeared, which the studied company is currently experiencing. We therefore identified the research gap to be what the risks with backsourcing already shared intellectual capital back to the focal firm. To identify the risks is a way of finding ways on how to prevent these risks, which this thesis aims to answer as well.

1.3 Backsourcing

“Backsourcing describes a process that can only follow after an outsourcing or offshoring decision is made and implemented” (Kotlarsky & Bognar, 2012, p.79-80). For a backsourcing decision to exist, the decision to outsource an activity must have been made in a make-or-buy decision. To understand the concept of backsourcing, Outsourcing and make-or-buy analysis must be examined.
A make-or-buy analysis is when a company examines whether to make the service/product in-house or buy it externally. In the literature, there are two main streams, cost perspective and strategic perspective. Mostly the decision is made based purely on the basis of costs, because companies have finite resources. (Cáñez et al., 2001, p.1) As mentioned above, small firms often have less resources and capacities, which could favour the “buy” decision also named outsourcing.

In the early years of 2000, outsourcing became a popular option for many organisations (Fan, 2000, p. 213). Although later reports states that outsourcing is seeing a decline due to economic pressure (Irani & Weerakkody, 2010, p. 614), it is still a very common option used by companies. However, the main reason being to being outsourced, the reasons for it and the benefits from it often vary between the different organisations. Often it is due to more than one reason that a certain activity is being outsourced. Fan (2000, p. 213) states that some of these reasons might for example be:

- Reduce costs
- Improve product quality, delivery and service
- Improve organisational focus
- Increase flexibility and
- Facilitate change

Due to the major changes in IT during the 1980s, the volumes that could be transferred and the complexity increased vastly while the transaction costs decreased for the companies. This was the first area where outsourcing really showed impact due to the cut in costs that companies could achieve. (Kippenberger, 1997, p. 22) Other areas that has seen growth according to Gay & Essinger (2000, p. 4) in outsourcing besides IT are HR, media management, customer services and marketing. The main reason being to cut costs since companies are not seeing these activities as core activities for their business and wants to clear up space for more important activities (Gay & Essinger, 2000, p. 10). However, Kippenberger says that it is important to consider the costs of outsourcing which might look good in the short run but comes with a potential loss of intangible assets in the long run (Kippenberger, 1997, p. 22). Kippenberger (1997, p.23) describes the importance of balance between:

- **Efficiency** for the short-term success and **learning** which depends upon culture and community
- **Focus** on core activities where the resources are most needed and **awareness** to redirect resources where they are needed.
- **Control** to get things done and **motivation** to ensure activities are done in an effective way
- **Autonomy** of the different departments and **co-ordination** to make sure responses are in line with each other.

However, there are many cases where outsourcing have not given the intended outcome that the company was hoping for from the outsourcing decision (Fan, 2000, p. 213). An important factor for this is the intellectual properties. According to Ryans & Ueltschy (2008, p. 30) the development in a country like China where companies are showing a growing interest in putting their technology. This is a sign that they perceive them as closing the gap towards the already developed countries which means that future decisions may very well depend on the country’s ability to protect brand image and intellectual properties (Ryans & Ueltschy, 2008, p. 30).
Based on the trend that has been shown with companies starting to question the outsourcing they have once done has initiated a trend of backsourcing. Backsourcing is when a company decides to bring a once outsourced activity to a third party in-house. (Kotlarsky & Bognar, 2012, p.79) As Kippenbergen (1997, p. 23) wrote in his article, it is often difficult to identify the soft values when it comes to keeping an activity within the company. These soft values though which are neglected many times are now starting to become more important as companies are opening their eyes towards bringing activities like IT home again as they discover their importance to the company (Whitten & Leidner, 2006, p. 606). However there are very little research touching upon backsourcing regarding other areas then IT. Therefore, it might be hard to make conclusions on why backsourcing is done in other sectors.

1.4 Research gap

For a long time, outsourcing has been a tool for companies to cut costs and make space for resources to be focused on core activities in the business (Fan, 2000, p. 213). To achieve improved competitive advantage mainly through reduced cost and time to market, outsourcing have become a commonly applied management strategy (Solli-saether & Gottschalk, 2015, p. 88).

However, the increasing trend of outsourcing have for some companies lead to more problem than anticipated. About 70% of outsourcing clients have had negative experiences with outsourcing, the main negative experiences discuss mismatch between envisioned benefits and actual benefits for example with cost and quality. 18% of the participant encountered many problems with the outsourced partner and decided to backsource the activity instead. (Deloitte consulting LLP, 2005, p. 24) Because of the increasing outsourcing and offshoring arrangements where the expectation is not met, backsourcing is a growing phenomenon (Kotlarsky & Bognar, 2012, p.79-81). IT was the first area which started using outsourcing (Kwok et al, 2003, p. 84). Academic research on backsourcing have focused on why companies backsource and according to Dibbern et al. (2004) the next big development in business trends and strategy will be backsourcing. Because IT have been the most outsourced activity, the backsourcing research is focused mostly towards this activity. Another argument for the research gap regarding backsourcing is that through our extensive search, we have not been able to find many new sources. This is also why most of the sources are closer to being a decade old instead of present time. This is one of the arguments for the need for research in this area.

The main motives for companies to backsource according to the current research is because of high outsourcing cost, poor service quality, loss of control, changes in management, or changes in company strategies (Kotlarsky & Bognar, 2012, p.81). Most of these motives is based on IT/IS services being backsource, for instance; Akoka and Comyn-Wattiau (2006) analysed 13 backsourcing cases and all were IT services, McLaughlin and Peppard (2006) studied nine backsourcing cases, all being IT services. Our case is from the context of outsourced production activities in the process of being backsourced. Our focus lies on finding what risks that are involved and how they can be prevented. Whitten & Leidner (2006, p. 616) recommend the risks with backsourcing as future research and they also mention that further research from the context of manufacturing is needed. To explain the phenomena of backsourcing and contribute to the current research, risks with backsourcing could be helpful for that purpose. (Whitten & Leidner, 2006, p. 616) Furthermore, Wong et al. (2008, p. 107) mentions that in-depth understanding of backsourcing is needed and should for further research be derived from first-
hand data from backsourcing organizations. They also believe that future research should examine the interplay between factors leading to backsourcing. To understand the phenomena backsourcing, the risks involved must be considered because if they are too high the backsourcing will not happen. (Wong et al. 2008, p. 107)

The risks involved with backsourcing is a fairly under researched area, however there is some research regarding risks with backsourcing of Information technology or Information system. The risk identified is uncertainty, divided into two distinctions; Technology uncertainty and Volume uncertainty (Falaleeva, 2003, pp. 3299). In the interaction between the outsourcer and the outsourcing partner, different knowledge is shared. The combined word for the different knowledge is intellectual capital which is the sum of an organization's patents, processes, employees’ skills, technologies, information about customer and suppliers, and old-fashioned experience (Stewart, 1997, p. 66). When outsourcing, the shared knowledge is a risk and if a firm backsources, it could trigger opportunistic behaviour in form of cancelled partnership who could have acquired intellectual capital and created intellectual capital such as unshared production techniques. In the study done by Deloitte consulting LPP (2005, p. 24), the loss of knowledge was a negative experience for 31% of the participants. The focal firm is therefore at risk of their intellectual capital being shared to competitors or used by the producing firm.

From a knowledge-intensive firm’s perspective, with most of their work being of an intellectual nature, it could be beneficial to know what risks are involved in backsourcing when intellectual capital is already shared to the external partner. As mentioned by Wang et al. (2014, p. 234) intellectual capital is extremely hard to classify resulting in various definitions. Because the concept is under development it is interesting for further research. Linking it with the phenomena backsourcing, for a deeper understanding of the different concepts. Thus, revealing a research gap in backsourcing, namely the risks involved with the phenomena when intellectual capital is shared to a manufacturing partner, and how these risks can be prevented. In figure 1 below the situation which will be examined is described; when outsourcing, intellectual capital is shared to the outsourced partner. If the focal firm is not satisfied with the partnership and want to cancel it, the intellectual capital needs to be reintegrated to the focal firm. What are the risks of reintegrating the intellectual capital, and how can these be prevented?

![Figure 1. Introduction](image-url)
1.5 Research Question

RQ1: What are the risks related to intellectual capital when backsourcing?
RQ2: How can these risks be prevented?

1.6 Purpose
The purpose of this thesis is to examine what risks are involved in backsourcing an activity in which the external partner is aware of the focal firm's intellectual capital. While these risks are identified, the authors of this thesis aim to show how these risks can be prevented. The research questions goal is to develop a better understanding of the phenomena backsourcing seeing there is limited research available about it. Backsourcing could also be the next key development in business trends and strategy (Dibbern et al., 2004, p. 89). Therefore, there is relevance of researching the consequences of backsourcing. This will form the theoretical contribution of the thesis. Furthermore, the practical contribution of this thesis is for similar firms of the case who are in the decision to backsource. With the help of the identified risks and preventing measures, the case company and other knowledge-intensive firms can evaluate these to be more prepared for the implications of backsourcing intellectual capital.

1.7 Disposition
This thesis includes 6 chapters. Chapter 1: Introduction aims to introduce the case and the research gap, which will naturally lead to the research question and announce the purpose of this thesis. Chapter 2: Theoretical framework will address the theoretical framework for this study, based on theories in intellectual capital, outsourcing and backsourcing. Chapter 3: Methodology provides the scientific and practical method used, and its implications on the research and the results. This chapter will also contain argumentation for the most appropriate approach to this study and the empirical data was collected. Chapter 4: Empirical findings presents our relevant findings from the semi-structured interviews and the participant. Chapter 5: Analysis analyses the empirical findings with our theoretical framework to answer the research questions. Chapter 6: Discussion & conclusion provides a discussion about the analysis to then summarize the risks and preventing measures answering our research questions.

1.8 Delimitation
In this thesis, we consider the risks from the perspective of the organization that buys outsourcing services. We are not looking from the perspective of the vendors that sells outsourcing services. Furthermore, we acknowledge that there are other collaborations where protecting intellectual capital is important. However, in this thesis we will look for the need of protection in the context of an outsourced relationship who is about to be cancelled. We will also delimit the study to only investigate the production process, leading to no conclusions regarding other activities such as sales, marketing and IT. As we approach our research questions from the perspective of a knowledge-intensive firm, the result will only be applicable towards these types of firm.
2. Theoretical framework

This chapter will address the theoretical framework for this study, based on theories in intellectual capital, outsourcing and backsourcing. It starts with examining intellectual capital and its sub-component, then examine outsourcing and lastly explore the phenomena backsourcing. The aim is to give the reader an understanding of the different theoretical aspect of the study that will help in answering the research question.

2.1 Intellectual capital

“"Intellectual capital" refers to the knowledge and knowing capability of a social collectivity, such as an organization, intellectual community, or professional practice.” (Nahapiet & Ghoshal, 1998, p. 245) The concept of intellectual capital is still under developed meaning that a generally accepted definition is non-existing, however intellectual capital literature indicates that its main base is knowledge (Kozak, 2011, p. 78). According to Khalique, Shaari & Isa (2013, p. 126) there are different definition of intellectual capital which are closely related but not exactly the same. Because intellectual capital is a complex concept, we will examine different definitions of intellectual capital, and latter describe the definition we will use in this thesis.

Bontis (1998, p. 67) means that intellectual capital is “the pursuit of effective use of knowledge as opposed to information”. Intellectual capital has three sub-domains namely; human capital, structural capital and customer capital. (Bontis, 1998, p. 67-69) Stewart (1997, p. x) defines intellectual capital as “the intellectual material – knowledge, information, intellectual property, experience – that can be put to use to create wealth.”. Ulrich (1998, p. 16) defines intellectual capital simply as “competence x commitment”, meaning that intellectual capital needs both know-how and engagement. To have a workforce which is both talented and get things done, you need a high score in both expertise and engagement (Ulrich, 1998, p. 16). Yitmen (2011, p. 5) points that “intellectual capital represents the wealth of ideas and ability to innovate that will determine the future of the organization” and that intellectual capital is considered an intangible asset consisting of human, structural and relational capital. Edvinsson & Stenfelt (1999, p. 22) defines intellectual capital as “intellectual capital assets; i.e. the knowledge, experience and technical infrastructure, customer relations, routines and professional competencies that create the future earnings potential”. An illustration made by Stewart (1997, p. 66) is that intellectual capital is “the sum of an organization’s patents, processes, employees’ skills, technologies, information about customer and suppliers, and old-fashioned experience”. Furthermore, Durst (2012, p. 235) identify the intellectual capital to be the core non-monetary resources of the firm crucial for remaining competitive advantage. In this study, intellectual capital is defined as the core non-monetary resources consisting of human, structural and relational capital, who determines the future of the organization. To capture the different dimensions, intellectual capital is divided into three components. Many authors mean that intellectual capital encompass three elements, namely human, structural and relational capital (Stewart, 1997, p. 76-77; Yitman, 2011, p. 5; Edvinsson & Stenfelt, 1999, p. 22; Bontis, 1999, p. 440; Wang, Wang & Liang, 2014, p. 232). Shortly the three elements regard the human intelligence, organizational routines and network relationships (Bontis & Choo, 2002, p. 626). These elements will be examined below to obtain an in-depth understanding of intellectual capital.
Human capital is the collection of intelligence, skills and expertise of the people embedded in the organization's work-force. Human capital can ensure the future survival of the organization if properly motivated, because of the employee's capabilities of learning, changing, innovating and providing creative thrust. Human capital is so forth the tacit knowledge of the individuals in the firm. (Bontis, 1999, p. 443-444) According to Wang et al. (2014, p. 234) “Human capital, which is embedded in employees, is the sum of employees’ competence, knowledge, skills, innovativeness, attitude, commitment, wisdom, and experience.”. The intangible resources such as competencies, attitudes and intellectual agility of an employee, is the human capital in an organization. The competencies include skills and know-how, attitudes refer to motivation while intellectual agility consist of the innovation and entrepreneurship of the human capital. (Yitman, 2011, p. 5) The members in the organization are the owner of the human capital, and whenever they leave the firm the human capital leaves with them (Edvardsson, 2011, p. 288). Stewart (1997, p. 76) means that human capital is “The capabilities of the individuals required to provide solutions to customers” seeing it as the source of innovation and renewal. Human capital in this study is defined as; the sum of the member’s competence, knowledge, skills, innovativeness, attitude, commitment, wisdom and experience required to provide solutions.

Structural capital refers to the infrastructure, information systems, routines, procedures and organizational culture of an organization, which provides the tools to interpret and store knowledge from individual, organization and other external sources (Yitmen, 2011, p. 5). Edvinsson & Stenfelt (1999, p. 22) defines structural capital as “those more or less intangible assets that are left behind when people move or go home and may include patent portfolio, trademarks, software programs and competence databases”, and state that structural capital can be owned. Structural capital interprets and permits human capital to be used again and again to create value, defined as “the organizational capabilities of the organization to meet market requirements” (Stewart, 1997, p. 76-77). Without structural capital, intellectual capital and human capital would be the same. Structural capital is what supports and allow intellectual capital to be developed in an organization. (Bontis, 1999, p. 447) In this study we will view structural capital as; The supportive elements within an organization that allows human capital to be translated and understood, which is embedded in the firm when everyone has left.

As mentioned above, relational capital is one of the components of intellectual capital. Some authors refer to the third component of intellectual capital as customer capital, but relational capital extends the definition of customer capital by including all relationship on the supply side, instead of only viewing the customer side (Bontis & Choo, 2002, p. 7). Stewart (1997, p. 77) defines customer capital as “the value of an organization's relationships with the people whom it does business”, and that customer capital could be extended to include the relationship with suppliers. Relational capital is therefore the extended customer capital including all external relations of the firm. According to Edvardsson (2011, p. 288) relational capital is the “network and alliances, goodwill, image and factors related to the market”. The knowledge embedded in relationships external to the firm is the essence of relational capital, this knowledge can be found and extracted from market channels, customers and suppliers relationships and other relationships between firm, institutions and people. When recognized, relational capital can lead to a wealth of knowledge from the focal firms own clients and suppliers. (Bontis, 1999, p. 448) Capello & Faggian (2005, p. 75) defines relational capital as “the set of all relationships—market relationships, power relationships and cooperation—established between firms, institutions and people that stem from a strong sense of belonging and a highly developed capacity of cooperation typical of culturally similar people and institutions”. Yitmen (2011, p. 6) defines relational capital as the network resources of a firm.
which is derived from interactions between individuals, organizations and other external sources. In this study, we will use relational capital as the third component of the intellectual capital because it extends to all external relations instead of customer capital which only involves the customer side. We will define relational capital as; the knowledge embedded in all the relationships established by the firm with markets channels, customer and suppliers relationships and other relationships between firm, institutions and people.

“Moreover, once you are thinking in categories like, human, structural and customer capital it becomes possible to ask the questions that allow you to identify tacit as well as explicit knowledge. “(Stewart, 1997, p. 75). Explicit knowledge is knowledge that can easily be captured, codified and transmitted, and can therefore exist in symbolic, verbal and written form. (Wang, Wang & Liang, 2014, p. 233; G. Anand et al., 2010, p. 304) Explicit is relatively easy to share to others, examples are through specifications and data. Tacit knowledge is knowledge which is difficult to translate and is based on individual experiences (G. Anand et al., 2010, p. 304). Bontis (1999, p. 444) means that human capital is the tacit knowledge of the people in the firm.

2.1.1 Knowledge-intensive firm

“In the new century, knowledge plays crucial roles in knowledge-intensive organizations. Both explicit knowledge and tacit knowledge are the most important factors which make the success of organizations” (Wang & Qin, 2005, p. 475)

To understand the context from a knowledge-intensive firm in their decision-making process regarding outsourcing and backsourcing, we must first define knowledge-intensive firm. The characteristics of knowledge-intensive firms is that most of their work is of an intellectual nature. Because of the knowledge-intensive work the majority of employees are well-educated and highly qualified for the task. Therefore, the key resource in knowledge-intensive firms for creating value is intellectual capital which refers to knowledge, information, intellectual property and experience. (Swart & Kinnie, 2003, p. 61; Wang & Quinn, 2005, p. 476) According to Nurmi (1998, p. 26) knowledge-intensive firm can operate in many different industries but one feature they have in common are that they are less capital-intensive than manufacturing industries and more learning-intensive than service industries. Swart & Kinnie (2002, p. 61) stated these fields of being typically knowledge-intensive; law and accounting firms, management, engineering and computer consultancy companies, advertising agencies, research and development units and high-tech companies. However, these features might change and capital-intensive might not be the most compelling argument for not being a knowledge-intensive firm. According to Swart & Kinnie (2002, p. 60) one aspect essential for knowledge-intensive firm is that their source of competitive advantage comes from their human and social capital. The continuity of gathering and applying new knowledge into the firm is crucial for future success, and is essential for the survival of the firm (Wang & Quinn, 2005, p. 476). Seeing all firm have knowledge involved, the main distinction between a knowledge-intensive firm and non knowledge-intensive firm is the highly-educated work-force and that the work is of an intellectual nature (Swart & Kinnie, 2002, p. 61). Eurostat (2007) categorized industries into high-technology, medium-high-technology, medium-low-technology and low-technology. In the medium-high-technology industry, producing chemical product is included (Eurostat, 2007). The case in this study is performing in the medium-high-technology industry, revealing the majority of knowledge involved. As mentioned above intellectual capital is the
key resource for a knowledge-intensive firm, and compared to other firm knowledge-intensive firm achieve competitive advantage from the intellectual capital.

![Figure 2. Summary of 2.1 and 2.1.1](image)

### 2.1.2 Knowledge sharing & Knowledge leakage

When a knowledge-intensive firm outsource intellectual capital, the knowledge is shared, the focal firm is therefore exposed to potential knowledge leakage. To understand the risk, knowledge leakage must therefore be explored, and because knowledge leakage is one consequence of knowledge sharing, this concept will be explained. Firms with a high degree of shared external knowledge risk unwanted knowledge leakage (Ritala et al., 2015, p. 22).

Cummings (2004, p. 352) defines knowledge sharing as “the provision or receipt of task information, know-how, and feedback regarding a product or procedure”. He also concludes that external knowledge sharing includes “The exchange of information, know-how, and feedback with customers, organizational experts, and others outside of the group”. An important source for competitive advantage is to have rich internal knowledge sharing, one way of achieving that is through a social environment which encourage knowledge sharing (Cabrera & Cabrera, 2002, p. 704). One of the main reason companies interact externally with other companies and shares knowledge amongst each other, is to learn know-how and capabilities of the other company (Kale et al., 2000, p. 217). In this thesis, we are interested in external knowledge sharing since that knowledge transaction is relevant in the outsourcing process. According to Ritala et al. (2015, p. 29) sharing knowledge externally is good for innovation performance, even though knowledge sharing also endangers the firm through exposure of potentially harmful knowledge leakage. Other reasons for knowledge leakage is by the employee whether intentionally or accidentally leaking business-critical knowledge, which could seriously harm the firm if the knowledge leaks to the wrong source (Ritala et al., 2015, p. 29). Knowledge leakage is becoming a key concern for organizations and could impact the organization in numerous ways such as; reputational damage, loss of revenue, costs arising from breaches of confidentiality agreements and loss of productivity (Ahmad et al., 2014, p. 27).

Jiange et al. (2013, p. 984) define knowledge leakage as “the extent to which the focal firm's private knowledge is intentionally appropriated by or unintentionally transferred to partners beyond the scope of the alliance agreement”. Knowledge leakage is defined by Frishammar et al. (2015, p. 85) as “the loss of knowledge intended to stay within a firm’s boundaries”. Usually it is the explicit knowledge that is leaked due to its characteristic of being converted into being
understandable for others, however tacit knowledge can also be leaked, one example is when key personnel leave the focal firm for the competitor (Frishammar et al., 2015, p. 76). Knowledge leakage can occur due to opportunistic behaviour from the external partner, making them potentially acquire the focal firm's critical knowledge such as their know-how and capabilities (Kale et al., 2000, p. 217). Knowledge leakage could occur either intentionally or unintentionally, intentionally comes from opportunistic behaviour and unintentionally could happen from interaction between the alliance were knowledge which wasn't intended for the other party (Kale et al., 2000, p. 232). Opportunistic activities refer to when one party acts in a way only beneficial for him, and does so in a deceitful manner (Norman, 2004, p. 611). Examples on opportunistic activities could be private learning, unauthorized imitation or other infringement on the agreed terms (Jiange et al., 2013, p. 984). Unintentional knowledge leakage is when the knowledge is by accident shared to any unauthorized parties either through verbal or written communications. One way of unintentionally leak knowledge is using temporary and contract workers, by sharing too much knowledge then necessary giving them potentially valuable knowledge. (Kim et al., 2015, p. 622; Jiange et al., 2013, p. 984)

![Figure 3. Summary of 2.1.2](image)

### 2.1.3 Protecting Intellectual capital

Sharing knowledge externally through alliance partnership could benefit the company in gaining competitive advantages. Through the alliance, the firm could gain access to outside knowledge regarding any activities in the firm. In the partnership both parties seek to gain knowledge from the other part, making risk for exposing critical knowledge. (Norman, 2001, p. 51) Due to the threat of opportunistic behaviour and accidents regarding knowledge, companies must protect them self from unintentional and intentional knowledge leakage. Norman (2001, p. 60) mentions that “Not having protective processes and mechanisms exposes a firm to potentially devastating losses”. There are two aspects a firm must consider in the decision on how to protect its critical knowledge, firstly the firm must decide the what and how of the internal knowledge to protect, and secondly the firm need to consider to possible unintentional leakage of knowledge (Norman, 2001, p. 51). Norman (2001, p. 51) groups knowledge protection mechanisms into three major categories; **Human resources**, **Legal structure of alliance agreements and contracts**; and **Processes**.

**Human resources** refer to the protection of knowledge made by the individuals in the firm, depending on their level in the firm will affect their choice of action. The key areas pointed out is Top management, alliance management and human resource management. The responsibility of top management is to identify the core capabilities to latter encourage and provide resources
for protecting knowledge and educate the workforce (Norman, 2001, p. 52). Alliance management refers to the manager involved in alliances, with the responsibility to back the top management in their emphasis on protecting core capabilities. The alliance manager can either appoint or personally act as the “Alliance information manager”, who oversee monitoring and surveillance, compliance, and consulting/advising. Basically, the alliance information manager ensures that knowledge protection is ensured in every level of the firm. The human resource management function can support the knowledge protection in various ways, examples of it is through education and training programs, reward and incentive program and report contacts with partner employees. (Norman, 2001, p. 52)

Legal structures of alliance agreements and contracts refers to the legal mechanisms which could be used to protect knowledge. Two core legal mechanism, namely patents and contractual mechanism, are used to protect all parties involved in an alliance from knowledge leakage. Patents purpose is to secure inventions and processes from being copied or used by unauthorized parties, and if the patent is properly established the owner will have the right to legal remedies towards the unauthorized party. However, there could be problems associated with patents. For example, patents are not guaranteed to protect knowledge so over reliance on patents will leave the company vulnerable. Patents could also be the reason for disclosure of critical knowledge, because the patent reveals what it is that is patented giving the competitors information on how to invent around that patent. Contractual mechanisms connote contractual and legal mechanisms to protect specific knowledge from getting in the wrong hands. (Norman, 2001, p. 52) When formulating a contract, it is important to specify the content to avoid confusion, the contract should specify the proprietary information, what information and capabilities that can be shared and not shared, present the consequences if a partner access offlimits information and if a partner uses proprietary information wrongfully. (Norman, 2001, p.51) Another way to avoid knowledge leakage is through a nondisclosure agreement, the agreement prevents the member in an alliance from spreading designated information to outside parties. The agreement usually uses employment limitations, meaning that during the time period of the alliance companies are prohibited from offering jobs to the employees of an alliance partner. (Norman, 2001, p. 53)

Processes determine how work is done and how people interact with each other in the alliance, making control over the processes an essential element in protecting knowledge. The processes that helps to protect critical knowledge involves communication, information flows, and people. The control of alliance processes protecting mechanisms fall under two major categories namely Information flows and Partner access. Information flows happen when partners share information between each other, and sometimes information which wasn't supposed to be shared gets shared. To prevent this from happening, the focal firm can assign an individual who’s responsibly of what information that can flow and from whom, to the alliance partner. This person is referred to as the “gatekeeper” and will prevent unintentional, incidental disclosures that could happen from interaction between the alliance. However, this approach to protecting knowledge have serious disadvantages such as slowing communication and decision-making. This is the reason why firm instead uses “communication stars”, which is the “gatekeeper” concept extended to have more than one “gatekeeper”. (Norman, 2001, p. 54) Partner access uses to limit the partners access to critical knowledge, this could be done by limiting the partners access to facilities and non-alliance personnel. By doing so, the partner will not be able to observe how the focal firm work in activities which the focal firm do not want displayed. Non-alliance personnel might not know what information can share, so by limiting their interaction with partners, they could prevent knowledge leakage (Norman, 2001, p. 55) Because our research question regards risk with backsourcing intellectual capital and
how they can be prevented, protecting intellectual capital is an important cornerstone to be able to identify how the risk can be prevented.

![Protecting intellectual capital](image)

**Figure 4. Summary of 2.1.3**

### 2.2 Outsourcing

Hätönen & Eriksson (2009, p. 143) argues that due to the current competitive environment the world is in, it can be referred to as an outsourcing economy, which is characterized by an increased focus on core organisational activities while simultaneously leveraging of external sources, skill, knowledge, capabilities and competences. The reason for this trajectory is the rise in competitiveness in the outsourcing markets which have caused a shift towards buyers’ markets, enabling companies of all sizes in nearly all industries to capitalize on external sources of knowledge and capabilities (Hätönen & Eriksson, 2009, p. 143). Outsourcing goes a long way back in time. It was the first area who started using outsourcing. It originally comes from the professional services and facilities management services in the financial and operational support areas during the 1960s and 1970s (Kwok et al, 2003, p. 84). From this stage, it has developed to its current stage. By Perry (1997, p. 521), outsourcing is described as a contractual agreement that occurs when an employer contracts someone to do the work they’ve previously done them self. However, it is important to notice that outsourcing is not a simple decision of whether to make or buy, but a whole series of decisions that needs to be taken to make the right one (Perry, 1997, p. 523). Varadarajan (2008, p. 1165) refers to outsourcing as the practice of a firm entrusting to an external entity with an activity that used to be performed in-house. And that past the transitional phase, the steady state is sourcing from an external entity (Varadarajan, 2008, p. 1166). Fan (2000, p. 213) writes that the main difference between other purchasing contracts and an outsourcing contract is that an internal activity is being contracted out. This means that the firm is no longer in charge of that activity but the new contracted firm is. Ownership of the finished product still lies within the original firm. Another definition to outsourcing is given by Takac (1994, p. 140) where he states, “outsourcing is the transfer of assets – computers, networks and people – from a user to a vendor, the vendor taking over the responsibility for the outsourced activity”. One thing in common for these definitions is that external parts takes over the responsibility of an activity which is the definition we will use for our thesis. Even though the company has not produced the products themselves before we will still choose to see it as outsourcing due to the similar nature of make-or-buy to outsourcing

### 2.2.1 Reasons for outsourcing


The motives for companies when it comes to outsourcing are many. As written earlier in the text, Fan (2000, p. 213) describes the most important reasons to outsource to be: decreasing costs, improve quality, delivery and service, improve organisational focus, increase flexibility and facilitate change. Fill & Vesser (2000, p. 45) mentions similar drivers such as costs, improved quality, delivery and service and organisational focus and but adds two factors: a company's finances and cooperation. Winkleman et al. (1993, p. 52) states that two important factors behind the growth of outsourcing: cost reduction and a strategic shift in the way companies are managing their businesses. Besides Winklemans factors, Gupta & Gupta (1992) adds two additional factors to outsourcing: market forces and technical considerations. Through the years, change has occurred in the business environment which has made companies make the outsourcing decision based on other reasons than maybe the older theories are stating. Häätönen & Eriksson (2009, p. 143) writes that the strategic rationalization has evolved throughout the years, from being profit oriented to focus on surviving.

According to Carrol and Teece (1999, p. 91) transaction cost economics studies how trading partners minimize the cost of exchange relationships by choosing the most feasible institutional arrangement where the relationship-specific investment is protected. Transaction cost theory further conclude that minimizing the transaction cost revolves around the dimensions asset specificity, uncertainty and the fundamental transformation (Williamson, 1989). Asset specificity can take many forms and refers to how transferable it is concerning the remains of the productive value. Also, the degree of uncertainty, type faced and the frequency describes the transaction. (Williamson, 1989, p. 142) The underlying behavioural assumption in transaction cost theory is opportunism and bounded rationality (Williamson, 1989, p. 138).

Resource-based view of the firm is an approach to attain sustained competitive advantage, which is derived from the firm resources and capabilities controlled, whether they are tangible or intangible. The key assumptions are that firm’s resources and capabilities are heterogeneous and immobile, and is the source for sustained competitive advantage (Barney, 1991, p. 103). Barney (1991) further suggest that to achieve sustained competitive advantage the resources and capabilities need to be valuable, rare, imperfectly imitable and have non-substitutability. If the resource enables the firm to exploit opportunities or neutralize threat, it is considered valuable. A resource cannot be valuable if a larger number of competitors or potential competitors also possess it, revealing the importance for rarity as a source to competitive advantage. If another firm can access the firm resource it is not an imperfectly imitable resource, because other firms will obtain it if it’s rare and valuable. (Barney, 1991, p. 106-107) The last attribute needed in order concerns substitutability. A valuable rare resource which is hard to imitate but have an equivalent substitute that can exploit the same opportunity cannot be a source of sustained competitive advantage. (Barney, 1991, p. 111)

Relational based view is according to Dyer & Singh (1998, p. 660) developed from the resource-based theory (RBV) and the transaction cost theory. Dyer & Singh (1998, p. 660) does however believe that they fail to bring forth the importance of networks and that the advantages of the individual firm is often linked to the advantages of the networks of relationships which the individual firm is part of. The advantages gained according to the RBV can only be found internally in the firm. Meanwhile the relational based view seeks outside of the firm's boundaries to find critical resources. Earlier studies suggest that when companies which are trading partners, are willing to make relation-specific investments and combine them in new ways, productivity gains are possible in the value chain. (Dyer & Singh, 1998, p. 660-661) This shows that firms who are putting their resources together can discover new advantages over other competing firms who are unable or not willing to do so (Dyer & Singh,
The advantages created between the partnering firms is referred to as relational which is defined as “supernormal profits jointly generated by in an exchange relationship that cannot be generated by either firm in isolation and can only be created through the joint idiosyncratic contributions of the specific alliance partners” (Dyer & Singh, 1998, p. 662). A question however is how these firms maintains these relational rents that the firms creates in conjunction with one another. Dyer & Singh (1998, p. 673-674) explains that the relational rents are preserved since competing firms: “1. Cannot ascertain what generates the returns because of causal ambiguity; 2. Can figure out what generates the returns but cannot quickly replicate the resources because of time compression diseconomies; 3. Cannot imitate practises or investments because of assets stock interconnectedness (they have not made the previous investments that make subsequent investments economically viable) and because the costs associated with making the previous investments are prohibited; 4. Cannot find a partner with the with the requisite complementary strategic resources or relational capability; 5. Cannot access the capabilities of a potential partner because these capabilities are indivisible, perhaps having co-evolved with another firm; and 6. Cannot replicate a distinctive socially complex institutional environment that has the necessary formal rules (legal controls) or informal rules (social controls) controlling the opportunism/encourage cooperative behaviour.

From the three core perspectives, we have identified that these views are relatable to the ex-ante backsourcing concept, namely outsourcing. Freytag et al. (2012) have further researched on how these perspective is incorporated when a firm outsources, which will be examined below.

Freytag et al. (2012, p. 101) states that for several years, outsourcing has been discussed in the literature. Although, diverse theoretical perspectives have dominated the view of how outsourcing should be managed during different periods in time. Today there are many authors who argues that different theoretical perspectives are being used, but that researchers still have perspective they favour above the rest. (Freytag et al. p. 101) For example, Kavcic and Tavcar (2008) identified three types of perspectives that researchers typically used: a transaction cost approach, a resourced based approach or a strategic approach. Kakabadse & Kakabadse (2000) have two approaches that they believe are common; economy-based view and a strategic-based view. Caniels & Roeleveld (2009) proposes three approaches similar to Kavcic and Tavcar; Neo-classical perspective, the resource perspective and the power and dependency perspective. Mclvor (2008) identifies two perspectives on outsourcing which are a transaction cost view and a resourced-based view. To gain the most optimal view on outsourcing, combining different perspectives is essential to get the best possible picture of the situation in practice (Mclvor, 2008, p. 26).

Freytag et al. (2012, p. 101) further explains that it is primarily these frameworks among other work that acts as a “debating voice” in search for common ground, as they discuss their theoretical framework which consists of three different perspectives. The perspectives originate from very different paradigms; hence they focus on different problems of outsourcing. The three perspectives involve (1) the cost-based view inspired by the transaction cost theory, (2) the competence view which is based upon the resourced based theory and (3) the relationship-based view that is based upon social exchange theory. (Freytag et al., 2012, p. 101)

According to Freytag et al. (2012, p. 101) in the (1) cost-based view, outsourcing is a choice between markets or hierarchies. The main goal for the firm is to minimize costs and transaction costs. If a producing firm cannot match their competitors in terms of costs, they will have to outsource their activities. Activities should be outsourced if the firm cannot match its
production costs with other actors. Firms can freely choose whether to use sub-suppliers or not. Asset specification may however make the option to leave the relationship more difficult with the sub-supplier. (Freytag et al., 2012, p. 101) Further on, situations where the firm is locked-in should be avoided to reduce opportunistic behaviour from the sub-supplier (Ellram & Billington, 2001, p. 25; Herash & Kishore, 2009, p. 318). Little attention is given to the long-term capabilities of the firm which is a challenge for the (1) cost-based view (McIvor et al., 2009, p. 1045). This is something (2) the competence view takes into consideration however (Freytag et al., 2012, p. 101). The competence view speaks of the importance that firms maintain their core competences within the firm and let other actors do the non-core activities for the firm. An important aspect of this perspective is that focus lies within protecting and developing competences that can lead to competitive advantages in the long term. It is also important that the firms try to identify suppliers capable of providing special services that can enhance the competitive advantage. (Freytag et al., 2012, p. 101; Harland et al, 2005, p. 834) Freytag et al. (2012, p. 102) writes that the (3) relationship-based view is not a simple entity but should be understood as if it were part of a bigger network. To be part of a network gives a firm the possibility to increase the productivity and innovation of the firm (Freytag et al., 2012, p. 102). This is according to Dyer & Singh (1998, p. 661) due to collaborating firm’s ability to generate relational rents which can be translated to relational advantages. The struggle however according to Freytag et al. (2012, 102) that the relationship-based view faces is the question of ownership and that no single entity is in charge of organising the processes between the firms. As companies argues whether to outsource or not, it is important to know what the reasons behind the decision are. In our study, we want to see what the case company's initial intention was to outsource which is why these three views are being used to help us relate to their situation. Together these perspectives will form the basis on how we see outsourcing and its process.

2.2.2 Forms of outsourcing

There are many cases where the outsourced activity is sourced to a third party which is resident in another country. This is referred to as offshoring and the definition for it varies between different authors. Manning et al. (2008, p. 39) describes it as the following: “Offshoring refers to the process of sourcing and coordinating tasks and business functions across national borders”. Manning et al. (p. 39) continues elaborating on the differences between outsourcing and offshoring and states that “Outsourcing, by contrast, denotes the delivery of products or services by an external provider—that is, one outside the boundaries of the firm”. Another definition which is like Mannings is given by Sobol & Apte (1995, p. 269) who refers to offshoring as global sourcing meaning that a firm turns over some parts or all of it of an activity towards a third party. However, Hätönen & Eriksson (2009, p. 63) defines the term as moving an activity across national borders. The terms are not to be mixed since offshoring focuses on location while outsourcing is about control. The benefits with offshoring is its ability to take advantage of skilled but relatively cheap labour while minimizing costs as well (Mudambi & Venzin, 2010, p. 1510). There are other types of outsourcing that companies can use. Varadarajan (2009, p. 1166) has created a framework to show the different types of outsourcing and what their benefits are for firms to move away from a narrow view of outsourcing to a more expansive view that systematically identifies and depicts opportunities with potential for outsourcing to a wider array of external activities. In Varadarajan´s (2009, p. 1166) framework, he mentions five different forms of outsourcing:

1. Outsourcing to a firm’s overseas subsidiaries
2. Outsourcing to suppliers (upstream vertical outsourcing)
3. Outsourcing to customers (downstream vertical outsourcing)
4. Outsourcing to competitors (horizontal outsourcing)
5. Outsourcing to strategic alliance partners

Outsourcing overseas has already been described in the earlier parts of this chapter and will therefore receive no further explanation. Outsourcing to suppliers can be referred to as vertical integration upstream and can either take the form of a firm outsourcing to a third-party firm where no former relations have been established or outsource it to a current supplier’s additional activities that currently are being produced in-housed (Varadarajan, 2009, p. 1166).

Outsourcing to customers is a sort of outsourcing where a responsibility of an activity is given to the end- and intermediate customers. These activities are often branched under the term micro-outsourcing. Tasks that goes under this tag can be self-check in on airlines or grocery shops having customers scan and pack their own groceries. (Varadarajan, 2009, p. 1168).

Outsourcing to competitors, also called horizontal integration or quasi-outsourcing (partial outsourcing) to competitors is a quite common thing. An example would be when a company decides to invest in manufacturing capabilities and workforce to meet the steady demand but outsources production of additional quantities needed to face seasonal demand. (Varadarajan, 2009, p. 1168)

Outsourcing to strategic alliances is a way for cooperating firms to split resources between them to reach common goals and/or specific goals for the cooperating firms. Pooling of skills and resources can be done by having firms focus on different stages in the value chain in which they can contribute the most towards reaching a competitive advantage or the same in the value chain. (Varadarajan, 2009, p. 1168) The main questions to answer when it comes to strategic alliances is “how to compete” and “where to compete”. Certain country markets do sometimes demand that a firm outsources some parts of the manufacturing components or the performance of certain services to firms in those specific countries (Varadarajan, 2009, p. 1169). As different types of outsourcing make the settings for the company different, it is important for us to know what types of outsourcing that Company X has done for us to fully understand what risks that are at hand when a specific type of outsourcing is being made

2.2.3 Risks with outsourcing

Gandhi et al. (2012, p. 41) defines the term “risk” as potential problems or issues that may arise or adversely impact the progress or outcome of the project. Belcourt (2006, p. 274) states that when big decisions are being made, one needs to take into account both positive and negative aspects of the risks and the same goes for the outsourcing decision. It carries risks and limitations which the firm needs to recognize when taking the decision. Organisations with experience in outsourcing functions are familiar with that the process is not as cost-effective and problem free as expected. (Belcourt, 2006, p. 274) Gandhi et al. (2012, p. 41) refers to Taylor (2007) definition of risk which is “Potential problems or issues that may arise and adversely impact the progress or outcome of a project”. The term risk as says that due to the growth of outsourcing and the further need to understand it, it is necessary to prioritize and manage the associated risks with outsourcing.

Fill & Vesser (2000, p. 45) talks about the driving factors connected to risks which companies uses as arguments to outsource which we have discussed in the earlier sections. Based on these
factors, decision criteria are created upon which three aspects are created which companies can use as a tool to make their outsourcing decision (Fill & Vesser, 2000, p. 45). The three key aspects that Finn & Vesser (2000, p. 45) created are:

**Contextual factors:** The contextual factors are assessed by utilising the beliefs of managers and employees regarding their internal and external factors which can be linked to the context of the outsourcing process. The approach requires an examination of the contextual drivers which can be quantifiable or non-quantifiable criteria. Quantifiable criteria are for example costs, increased cover of fixed costs, investments and revenues. Non-quantifiable criteria can be strategic interest, confidentiality, linkage with operations, stability of employment, manageability, and dependence on suppliers.

**Strategic and structural factors:** The strategic and structural factors require more of a qualitative approach. Fill & Vesser (2000, 45) writes that they base their research upon Ewaltz (1991) nine question guideline which companies should use to get an answer for the strategic and structural factors. Ewaltz (1991, p.53) speaks of the importance to determine how “hollow” a firm's business should be, and aims to answer on an objective level how much a firm should integrate their operations through his nine question guideline. The questions seek to answer how the production process differs to others? How severe and frequent are the market cycles? How much capital does international capital require among other questions that wants to answer geographic dispersion effect, supplier capabilities and the time frame. Corporate culture also needs to be taken into considerations (Ewaltz, 1991, p. 53-55)

**Cost factors:** Cost can be split into two distinct categories: production cost and transaction cost. Because of economies of scale, production cost is said to be lower for outsourcing. Though these are normally only obtained for standardized products. If there is a high degree of customization involved, in-house manufacturing may be advantageous. Regarding Transaction costs, outsourcing can cause higher transaction costs since the supplier must be monitored by the customer. If there are few alternative suppliers, transaction costs can also be high. Paying attention to contract details is an effective way to reduce the transaction costs. (Fill & Vesser, 2000, p. 46)

Barthelemy (2003) also conducted research on risks with outsourcing and what companies should be aware of in their decision making. In Barthelemy’s (2003, p. 87) research, he conducted interviews with over 90 companies from both Europe and America who had been involved in an outsourcing decision. The firms have outsourced different services such as IT, telecommunications, logistics, and finance. From the data Barthelemy (2003, p. 88) managed to collect, he identified seven deadly sins which he saw as the most common faults for companies outsourcing mistakes. Barthelemy identified (2003, p. 88) the seven deadly sins as the following:

**Outsourcing activities that should not be outsourced:** Outsourcing is often associated with automatic cost reduction and performance improvement. This view on outsourcing comes from the fact that many articles have written about the subject during the “honeymoon” period which is the period just before or after the contract is signed. Benefits are only estimated and not real yet. This leads to firms copying each other's behaviour, even though the real result of it is not yet reported. Further on, it is important to understand where the competitive advantage derives from to outsource the right functions. Capabilities and resources which are valuable for the firm and hard to imitate should stay within the firm. Otherwise the firm runs the risk of becoming a
“hollow” firm, losing its competitive advantage and becoming nothing more than a shell. (Barthelemy, 2003, p. 88; Harland et al., 2005, p. 836)

Selecting the wrong vendor: To achieve success when outsourcing, Berthelemy (2003, p. 89) claims that selecting the correct vendor is crucial. An important thing to notice is that companies does not always outsource to cut costs. Many times, costs might increase but revenues increase as well which acts as an offset combined with reduced opportunity costs. Value is added because of the reduction in fixed assets and the ability to implement new innovative logistics practices. Two criteria that should be used to find a successful vendor are the hard qualifications and the soft qualifications. The hard qualifications can be identified as tangible and refers to the vendor's ability to provide low-cost and modern solutions. Soft Qualifications may be non-verifiable and can change over time depending on the situation. For the soft qualification, it is important that the cultures fit and that both parties commit to develop a long-term relationship. Trust is also an important soft criterion that plays a key role in succeeding with the outsourcing relationship. (Berthelemy, 2003, p. 89). Ryan et al. (2006) have similar arguments. They state that companies are becoming more selective in choosing their vendors and other factors besides costs are becoming more important to base the decision upon, such as quality and protecting intellectual capital (Ryan et al., 2006, p. 34)

Writing a poor contract: Berthelemy (2003, p. 90) states that to achieve successful outsourcing, writing a good and detailed contract is essential since it help establish a balance of power between the two parties. If not enough time is given towards creating a profound contract with the vendor and the actors choose to trust upon the partner relationship instead, trouble is surely to appear in the future. To secure that expectations are set and each part can commit himself, a good contract is necessary. Good contracts generally consist of the following things:

- **Precise:** Unclear contract often results in situations where costs and service are poor.
- **Complete:** Two important benefits. Firstly, it reduces the potential of opportunism from the vendor and secondly, the more complete, the less is the risk for costly renegotiations
- **Incentive based:** The contract should be written in a way that it encourages the vendor to perform at its best always.
- **Balanced:** One-sided contract does not last long and therefore balance is needed to preserve good relationship. Quality and service levels might otherwise drop from the vendor.
- **Flexible:** Because of an ever-changing world, with new technologies and business conditions, flexibility is needed to adapt to these changes. (Berthelemy, 2003, p. 90)

Similar risks are mentioned by Mohammed (2005, p. 551-552). Besides the risks stated above by Berthelemy, he writes about the following risks:

- **Penalties for non-performance:** If the outsourced vendor does not meet the vendor requirement, penalties should be applied. This will prevent it from happening frequently.
- **Contract length:** If a long-term contract has been struck, companies after a certain period of time runs the risk of receiving the minimum level required out of them. Short-term contracts can prevent this as they force actors to constantly deliver satisfactory results. (Mohammed, 2005, p. 552)

Overlooking personnel issues: Regarding the personnel, Berthelemy (2003, p. 91) claims that they generally see outsourcing as an underestimation of their skillset. The consequence may be personnel leaving the firm even before the outsourcing has been implemented. Therefore, open
communication is the key to manage the personnel. Another issue is that the commitment of the personnel transferred must be secured as the personnel often is the most valuable asset for the company. In many cases however, they are better off with the vendor rather than the original organisations as they see the outsourced activity as mere utility. (Berthelemy, 2003, p. 91) Mohammed (2005, p. 555) also speaks of the risk of overlooking the personnel and further states that personnel often feel threatened when an outsourcing agreement is made. This can often lead to them looking for other opportunities in terms of employment (Mohammad, p. 555).

Losing control of the outsourced activity: Berthelemy (2003, p. 92) explains that it is often easier to control an outsourced activity compared to an in-house department. Outsourcing does however call for changes in the management of an activity. Suddenly there is no direct control over the assets. Instead control is made over a contract between the partners. Is therefore very important for an outsourcing client to not lose control over the outsourced activity. Loss of control often comes down to two factors. First, the client might not have the capabilities to manage the vendor. Secondly, the client may not actively manage the vendor. (Berthelemy, 2003, p. 92)

Overlooking the hidden costs of outsourcing: According to Berthelemy (2003, p. 93) It is not always easy to get a grasp over the potential costs that comes with outsourcing. Many costs might threaten the actual viability of outsourcing. Further on transaction cost economics suggests two main types of hidden costs in outsourcing: (1) Outsourcing vendor search and contracting costs. Search costs are the costs of gathering information to identify and assess suitable vendors. Contracting costs are the costs of writing and negotiating the contract with the vendor”. These occurs before the outsourcing process takes place. (2) Outsourcing vendor management costs. “These costs have three dimensions: monitoring the agreement to ensure that vendors fulfil their contractual obligations, bargaining with vendors and sanctioning them when they do not perform according to the contract, and negotiating changes to the contract when unforeseen circumstances arise”. These costs occur when the outsourcing process has been put in place. (Berthelemy, 2003, p. 93) Another researcher who has similar views is Mohammed (2005, p. 556) who writes that hidden outsourcing costs are a risk since many companies fail to identify the buried costs in the outsourcing arrangement. Examples are Beyond baseline services, vendor search costs, transition costs and post-outsourcing costs which all might affect the company in a negative way if they are not dealt with properly (Mohammed, 2005, 556).

Failing to plan an exit strategy: Berthelemy’s (2003, p. 94) final sin comes down too many managers unwillingness to anticipate the end of an outsourcing contract, since they do not plan an exit strategy. Outsourcing relationships can be viewed on a continuum with long-term relationships at one end and short-term relationships at the other end. With long-term relationships, the advantages are that recontracting is easier since the company is dealing with the same dealer and switching to new vendors or reintegrating the outsourced activity leads to hard and difficult work. On the other end of the continuum, there's the short-term relationships. Opposite to the long-term, there are many vendors to choose from, the switching costs are low and little effort is required. When firms do not want to anticipate the end of an outsourcing relationship, they tend to not include material reversibility and human reversibility. Without these clauses, the option to back out of an outsourcing agreement is much more difficult due to the weak power bases with vendors. (Berthelemy, 2003, p. 94) For us to grasp the potential risks with backsourcing for Company X, it is important to understand the risks with outsourcing as backsourcing derives from outsourcing. The identified risks in this chapter will help us with
that task as they further enhance our understanding of the risks with backsourcing intellectual capital.

---

**2.3 Backsourcing**

The term backsourcing was first introduced in 1998, and since then there has been very few studies conducted in the field of backsourcing (Veltri et al., 2009, p. 51; Wong et al., 2008, p. 102). Veltri et al. (2009, p.) describes backsourcing as taking an outsourced activity back in-house to be made by the company itself. Wong et al. (2009, p. 102) describes backsourcing as the opposite of the outsourcing strategy, meaning returning to the previously abandoned internal service provisioning strategy. As with outsourcing, backsourcing might differ in complexity and scale (Wong et al., 2009, p. 103). Tadelis (2007, p. 265) refers backsourcing as the action of bringing back an outsourced service or good back in-house.

For this to be possible, an activity must have already gone through the stage of whether the company should make-or-buy as part of the sourcing process. Once the decision has been made to buy for example, the activity gets outsourced to an external third party. Later, however the company will have to decide whether they should take the activity back, keep the same vendor or search for a new one. (Veltri et al., 2009, p. 52) Wong et al. (2009, p. 102) writes that the trend of backsourcing concerns both parties in an outsourcing relationship- the organizations that buy outsourcing services and the vendors that sell outsourcing services. There have been many examples over time where organisations have chosen to backsourc an activity. For example (Kotlarsky & Bognar, 2012, p. 80), there is the case of Bank One who decided to terminate its outsourcing agreements with IBM and AT&T and instead decided to hire more than 600 employees in an attempt to shift from outsourcing to try and rebuild their own IT-capabilities. Another example is JP Morgan Chase who ended their seven year deal, worth 5 billion dollars with IBM after only 21 months. (Wong et al., 2009, p. 102)

It is worth recognizing that backsourcing will always be an option for companies to make. A good business leader will on regular basis evaluate his sourcing options and compare them to other alternatives. However, over time it will require a new cost analysis where the benefits will be weighed over the challenges of unwinding an outsourcing agreement, appeasing dissatisfied customers, and reproducing the infrastructure to be able to support the function in-house. There are options of renegotiating in the alternative however, where reorganizing outsourcing contracts and relationships instead of trying to backsourc, but that depends on how leveraged a company is to renegotiate terms after outsourcing has been undertaken and infrastructure shifted. (Tadelis, 2007, p. 265) For us to grasp the potential risks with backsourcing for
Company X, it is important to understand the risks with outsourcing as backsourcing derives from outsourcing. The identified risks in this chapter will help us with that task as they further enhance our understanding of the risks with backsourcing intellectual capital.

2.3.1 Reasons for backsourcing

As with outsourcing, there are various reasons why a company should decide to backsource. The early literature written about the subject suggests different motivation factors on why this is the case. For example, it suggests change in circumstances, redefinition of the character of outsourced service, or discovery of flaws in the initial assessment that led to the decision to outsource. Further on, theories also pointed out that cost considerations were a key factor in backsourcing as in outsourcing with empirical studies to prove it. (Veltri et al., 2009, p. 52)

Falaleeva (2003) explored what underlying factors for backsourcing exist, in her study she found that agency costs, transaction costs, production costs, risk, goal conflicts, and opportunism leads to the decision to backsource. Whitten & Leidner (2006, p. 614) examines how the service level, product quality, switching costs and relationship quality affects the firm's decision to backsource. They conclude that firms that experience low service and low product quality based on the four dimensions are more likely to backsource than to switch vendor or negotiate with the original vendor. The respondents who switched vendor or backsource perceived the switching cost as lower compared to those who decided to stay with the original vendor. Wong et al. (2008, p. 106) list 9 different factors motivating backsourcing decision, which they group into four major categories: strategic, power & politics, outsourcing expectation gaps, and changes in vendor organization, the study also concludes that backsourcing doesn't only occur because of existing problems but also from arising opportunities. According to Veltri et al. (2008, p. 53) the three major reasons for backsourcing are outsourcing contracts problems, opportunities arising from internal organizational changes, and opportunities arising from external environmental changes. In contract problems, the sub-reasons are: higher than expected costs, poor service quality, loss of control over outsourced services, and know-how mismatch. Internal organizational changes refer to changes in executive management and recognition of a new role for information system, while external environmental changes involve external business changes and pressure from outside. (Veltri et al., 2008, p. 53)

We identify Wong et al. (2008) and Veltri et al. (2008) to have the most extensive research on why firms backsource, and we will therefore in detail explain their different view on reasons for backsourcing. Wong et al. (2008, p. 106) and Veltri et al. (2008, p. 62-63) mentions that it's rarely only one of the factor that leads to organizations to backsource, but instead a combination of several of the factors. However, some factors influence more than other and starts a chain reaction leading to the decision to backsource.

Wong et al. (2008) lists 3 sub-factors in Strategic, these are changes in strategic direction, IT role, and organizational structure. Due to new strategic directions, activities viewed previously as commodity could now be a strategic resource, motivating the focal firm to backsource. Furthermore, Wong et al. (2008, p. 104) states that “Outsourcing contracts often tie organizations down to certain terms that cause them to lose flexibility of scaling-up or scaling-down depending on their needs.”, which motives firm to evaluate their sourcing arrangements.
Power & Politics refers to the influence from top level management in the organization. Wong et al. (2008, p. 104) argues that if the management change, the sourcing decision will be re-evaluated and based on the new manager's view on the activity could favour backsourcing. For instance, if the new manager feels that the focal firm lack control over an outsourced activity and they strive for higher control, the manager could simply backsource the activity.

Outsourcing expectation gaps relates to “Cost”, “Service quality”, “Loss of control”, and “IT resources accessibility” as reasons for backsourcing. Outsourcing expectation is what the focal firm believe the vendor will contribute to the partnership, however these expectation is not always met (Lacity & Hirschheim, 1994, p. 7). When the expectation of the above reasons isn't met, the focal firm will re-evaluate the previous outsourcing decision (Wong et al., 2008, p. 106)

The last major factor for backsourcing is changes in vendor organization, this factor encompass that it could be the vendor initiative for the backsourcing. This could happen from changes in the vendor’s organization or vendor’s strategic direction, making them incompatible with the focal firm. (Wong et al., 2008, p. 106)

According to Veltri et al. (2008, p. 52) backsourcing occurs either because of problems with the outsourcing arrangement or from internal or external business changes which creates new opportunities for the focal firm. Veltri et al. (2008, p.53) identify 3 major reasons for backsourcing, “Contract problems” focuses on reasons problems while “Internal organizational change” and “External environmental changes” focuses on arising opportunities leading to backsourcing.

Contractual problems involve “Higher than expected costs”, “Poor service quality”, “Loss of control over outsourced services” and “Know-how mismatch”. If the cost for the outsourcing arrangement is higher than the expected cost, the focal firm turns to backsourcing for cost savings. (Veltri et al., 2008, p. 53) At the start of the partnership the cost is probably as expected, but could change after a while to become more expensive than anticipated (Veltri et al., 2008, p. 58). “Poor service quality” refers to problems with service quality from the outsourcing partner, that the service quality differs from the stated service quality. “The loss of control” happens when an outsourcing provider is in charge of core competencies or critical success factor for the focal firm (Veltri et al., 2008, p. 59). When this occurs, the focal firm is not able to capitalize on new opportunities. Another reason for backsourcing is when “Know-how mismatch” occur, where the vendor knows more about the activity than the focal firm or vice versa. Creating a power situation between the partners, and making one of the party dependent on the other. (Veltri et al., 2008, p. 60)

Internal organizational change refers opportunities which appear due to changes within the focal firm, such as “Changes in executive management” and “Recognition of a new role for IS”. When changing management, the new executive aims to create internal changes through their own ideas and experience. Depending on the executive, this could lead to backsourcing. In the “Recognition of a new role for IS” Veltri et al. (2008, p. 61) information system is seen from a new light, revealing its importance in the restructuring and repositioning of internal and external competencies, and because of that being backsource. Veltri et al. (2008, p. 61) further argue that business strategies change as the environment changes, which can reshape and relocate external competencies. In the study, they highlight the new role of IS but as argued it refers to all external competencies. Therefore, we chose to make the assumption that the
production also can be seen from a new light, renaming the heading to “Recognition of a new role for external competencies”.

*External environmental changes* can also be a reason for backsourcing. Mergers and acquisition increase the size of the company and because of that the focal firm could find new opportunities for outsourced activities. Due to the changed firm, backsourcing could be more beneficial now than before resulting in a new decision regarding the activity. (Veltri et al., 2008, p. 62) These different types of outsourcing will help us to identify what kind of outsourcing that Company X has done which will then enable us to perform a more specific analysis focusing on that specific type of outsourcing, leading to a better result.

![Figure 6. Summary of 2.3.1](image)

**2.3.2 Risks with backsourcing**

The available literature that speaks of risks with backsourcing are mainly mentioning risks concerning backsourcing of IT (Information technology) or IS (Information System). Due to lack of existing material about risks of backsourcing manufacturing we will use existing material concerning IT and IS. Considering the authors are discussing the risks in a more general way and that it revolves around the concept backsourcing, we believe it to contribute to answering our research questions. Seeing that backsourcing means to bring back an outsourced activity, the risks identified should also be applicable to other activities. By this acknowledgement we will have in mind that some of the risks might solely consider IT and IS.

Uncertainty has big influence when it comes to the backsourcing decision. Researchers have identified two distinct types of uncertainty: (1) Technology uncertainty and (2) volume uncertainty. A third type is also mentioned which is called performance ambiguity which can be referred to as the uncertainty due to performance. These uncertainties all motivates sourcing arrangements by reducing or increasing the risk faced by the outsourcing client. In situations where performance uncertainty is present, the client is often concerned with the contractual behaviour of the provider and with changes in the environment which may lead to a decrease in competitiveness towards the rivals. Outsourcing relationships are likely to be successful if the risks regarding the three types of uncertainties can be reduced by the outsourcing provider. However, high uncertainty in any of the three areas might lead to difficulties for the provider to assuage the risks of the customer. This eventually might lead to tension between the unsatisfied client and the outsourcing provider who does not feel that the contract reflects the effort of handling the risks. High uncertainties create greater risks which puts the relationship to the test which can make the outsourcing part decide to backsource. (Falaleeva, 2003, pp.
Hence, we can identify that what is positive for outsourcing is often negative for backsourcing.

Chapman & Andrade (1998, p. 57) states that Insourcing or backsourcing as we are referring it, is an opportunity to create the best, to start over with a clean sheet and to do it correct. The insourcing can be an exciting idea and almost be like a dream for many companies but at the same time also be a nightmare. The decision to backsource is something that affect every department of the company together with every user and manager. It is very difficult to undergo and it is a major investment in need of a lot of money which also often takes a lot of time to proceed with. Another important factor as a company prepares itself for backsourcing is to understand the new backsourced activity’s role within the company. If the activity is not like the responsibilities of the company, it is going to be an overall burden for the company. (Chapman & Andrade, 1998, p. 56-57)

Another important thing to consider is the knowledge transfer that happens when the company goes from outsourcing to backsourcing. Bhagwatwar et al. (2009, p. 167) uses Dibbern, Winkler, & Heinzl (2008) definition for knowledge transfer which they refer to as during outsourcing can be defined as the communication of knowledge from the client organization so that it is learned and applied by the offshore vendor. It is worth stating that this knowledge includes both explicit knowledge about the business domain as well as the implicit knowledge about how different things get done in the organisation. This type of knowledge is difficult to define and often needs to be transferred through frequent communication and interpersonal interactions. (Bhagwatwar et al., 2009, p. 167)

But even when the process is often costly and time consuming, there is no guarantee that the result will be better than when the company chose to outsource. Knowledge is linked to the employees performing the tasks. These competent employees are either transferred from the vendor or new ones are hired who have certain experience in the field (Bhagwatwar et al., 2011, p. 168)

Another important factor that needs consideration when backsourcing is the potential sunk costs that might arise when deciding to leave the current provider and switch to in-house as the old investment in outsourcing can't be regained as future return. Managers might get them self-substantial switching costs if they decide to switch vendors or backsource. These costs are often high due to a loss of investments and revenues associated with past operations. Therefore, there is often a need to make new investments for future operations (such as bringing in new IS, upgrading management systems and managing uncertainty). However, if switching costs are low, then managers can easily switch either by outsourcing to a different vendor or by backsourcing. Overall, switching costs can play a key role in the strategic choice between outsourcing continuation versus the alternatives. (Whitten et al., 2010, p. 168). As Company X is thinking of backsourcing their outsourced activity their risks will be risks that they need to be aware of. These risks that we've found in the literature will serve as a base in our study when we will try to identify the risks that Company X might face in their backsourcing process.
Figure 7. Summary of 2.3.2

- Technology uncertainty
- Volume uncertainty
- Performance ambiguity
- Knowledge leakage
- Costly and timeconsuming
2.4 Theoretical framework

Knowledge-intensive firm
- Core competence is intellectual capital
- Intellectual capital
  - Human capital
  - Structural capital
  - Relational capital

Outsourcing

Knowledge sharing

Backsourcing

Outsourced function or activity
- Provide company A with a service
- Decrease costs
- Improve quality
- Delivery and service
- Improve organisational focus
- Increase flexibility
- Facilitate change

Reasons for backsourcing
- Contractual problems, internal organisational change & external environmental changes
- Strategic, power & politics, outsourcing expectation gap and changes in vendor organisation

Risk with intellectual Capital
- Knowledge leakage
- Opportunism
- Reputational damage
- Loss of revenue
- Cost arising from breaches of confidentiality agreements
- Loss of productivity

Risk with backsourcing
- Technology uncertainty
- Volume uncertainty
- Performance ambiguity
- Knowledge leakage
- Costly and timeconsuming

Protecting intellectual capital
- Human resources
- Legal structures of alliance agreements and contracts
- Alliance processes

Rq 1: What are the risk related to intellectual capital when backsourcing?
Rq 2: How can these be prevented?

Figure 8. Theoretical framework
Our theoretical framework is summarized in figure 8. To arrive at our research questions means that a knowledge-intensive firm needs to outsource. During the outsourcing, knowledge is shared to the outsourced function or activity. As described earlier, the key resource for knowledge-intensive firms is intellectual capital, which is the combination of human, structural and relational capital. The outsourcing is the starting point to answer our research questions, because the knowledge is shared in the outsourcing process. We believe the outsourcing arrow incorporates the cost-based view, competence-view and relationship-based view. This is due to the cost minimization, increased focus on core competences and the potential increase in productivity and innovation, which the partnership could provide. Without outsourcing, there cannot be backsourcing. However, the outsourcing process could potentially lead to the risk of knowledge leakage. If for some reasons the expectations are not met or the contract has passed, the focal firm will either renegotiate the terms, switch the outsourcing firm or backsourse the production. Our study focuses on when the focal firm decides to backsourse. The reasons for backsourcing can vary but does, according to the literature, often occur due to multiple reasons. When the increased firm performance from the three views are absent, the collaboration will end or change. The arrow from the outsourced activity back to the knowledge-intensive firm represents the ending of a partnership and the reintegration of shared intellectual capital. In the backsourcing process risks may arise. However, it must also be stated that the risks also derive from outsourcing. Because of the decision to backsourse, the arrows connected to the risks appears. Leading into the first research question “What are the risks related to intellectual capital when backsourcing”. The arrow in risk with backsourcing refers to cost-based view and the arrow pointing at risks with intellectual capital refers to the competence-view. By examining the intellectual capital shared in the outsourcing arrangement, the reasons for outsourcing and backsourcing will later lead us to be able to identify what the risks are. Depending on what the focal firm wants to achieve with outsourcing, will determine what knowledge that is shared to the external partner. Therefore, we include the outsourcing reasons in our theoretical framework. This will also help us to identify the risks involved, because the reasons and what is shared will determine the risks when backsourcing. We further argue that to understand the risks with backsourcing intellectual capital, the risks with sharing intellectual capital and the risks with the actual backsourcing needs to be examined.

After the risks with sharing intellectual capital are identified, the focal firm must consider how to protect the shared intellectual capital leading us to research question two “How can these be prevented”. Because backsourcing is an under researched area, preventing measures have been difficult to find. However, there are research done on how to protect the intellectual capital when entering a collaboration with an external party. The arrow pointing to protecting intellectual derives from the cost-based view due to the behavioural assumption made regarding opportunism and bounded rationality. As described earlier, outsourcing is when entering a collaboration with an external party. Therefore, we believe that by examining the protecting measures for intellectual capital can explain how the risks with backsourcing can be prevented. By identifying the risks with backsourcing, potential preventive measures can also be revealed. Since the intellectual capital is already shared, we believe it to be difficult to prevent the identified risks entirely. However, we argue that the risks identified could at least be limited. The theoretical framework will therefore provide the readers an overview on how the chosen theories relates to help us to answer our research questions. Furthermore, the theoretical framework will serve as a guideline for how to formulate the structure of the empirical part and the analysis of the collected primary data.
3. Methodology

This chapter will provide the reader with the methodological stance of the authors. Further it will examine the preconception of the authors and the scientific method used to acquire results. Additionally, the practical method used to answer the research questions will be described.

3.1 Preconceptions

We are both currently studying our last year at Umea university to get our degree of Master of science in business and economics, specialized towards retail and supply chain management in our last year at Umea university. For our major we read business development with supply chain included in that as well. Throughout our education, we have gained knowledge in business and economics and with our major in Business development, we also gained good insight in how to grow a business, critical viewpoints and what the essential parts are in terms of leadership and strategic decision making. In terms of logistics, we have gathered knowledge about the trends that companies are facing, dealing with an increase in shipments and orders which puts emphasis on having a solid logistic system in terms of order planning, order management and warehousing.

We both knew that we wanted to write our thesis towards logistics since both of us aims at working within this area in the future. Saunders et al. (2003, p. 15) states that a good research topic can be clouted by future career goals. When we got in touch with company X the initial conversation was that we were supposed to search and find a problem, focusing on their logistics surrounding their products. As we investigated we found that company X was facing the decision of whether they should make or buy their newly developed product. As we digged deeper we identified a problem with their relationship towards their producers. As Company X had shared their intellectual capital with them, they had knowledge about the products mixture and recipes. Some also knew which their customers were since they stored and delivered the finished product for Company X as well. From this information, we identified that protecting their knowledge when backsourcing is a necessity to maintain a competitive advantage. As we searched the literature for this issue, we found next to nothing as backsourcing is a relatively new research phenomenon. Therefore, there is no surprise that even less is written about the potential harms that backsourcing might have on companies which have shared their intellectual capital with their outsourcing partner, but then decides to backsource. Also, the potential damage it can inflict and all the risks surrounding it. Since outsourcing is a central part of supply chain management that we have studied and of backsourcing the problem was very embedded with our education.

3.2 Research philosophy

3.2.1 Ontology

Ontology refers to the researcher's view of the nature of reality or being (Saunders et al., 2012, p. 140). Whether social entities can or should be acknowledge as objective units exist externally to those social actors concerned with their existence or as subjective phenomena built from the participants interpretation and actions (Bryman, 2011, p. 35). “Ontological assumptions can be broadly divided into two fundamental configurations: Objective and subjective” (O’Gorman and MacIntosh, 2014, p. 56)
According to O’Gorman and MacIntosh (2014, p. 56) an objective ontology perspective has the assumption that reality is something that is built by solid objects that could be measured and tested. Reality exist even when we are not involved in or observing it (O’Gorman and MacIntosh, 2014, p. 57). Objectivism refers to how we meet social phenomenon in the shape of external facts that lay beyond the mind whom we can’t affect, meaning that things happen whether we want it or not with or without our involvement (Bryman, 2011, p. 36).

A subjective ontology assumes that the shaper of reality is our perception of it, and that facts are derived from our behaviours, attitudes, experiences, and interpretations. Reality is different for each individual. (O’Gorman and MacIntosh, 2014, p. 57) Bryman (2011, p. 37) talks about subjectivism as constructionism, the authors of this thesis argue that they are based on the same premise, namely; The reality involves social phenomena who is constantly changing and is constructed by social interaction based on the perceptions of the individual.

Research question and the progress of the research will be influenced by ontological assumptions and obligations, whether the research is angled towards being subjective or objective (Bryman, 2011, p. 39) We believe risk to be a subjective phenomenon based on the perception from the people involved in companies. Due to our view that reality is different for each individual with a subjective view on reality, risk will also be perceived differently. Decision are taken constantly in companies, making the firm and the people involved in a constant state of change based on social interactions. Because backsourcing involves risks, and risk is viewed differently from person to person, this thesis aims to acknowledge the different view on risk from the participants and interpret their views to answer the research question.

3.2.2 Epistemology

Epistemology is a term which can be referred to as “theory of knowledge”. It means that epistemology is the kind of theory that tries to explain what knowledge really is and concerns what is accepted and what is not accepted in terms of being acknowledged as knowledge. (Bryman & Bell, 2005, p. 588) Basically it tries to determine what knowledge can deemed worthy to be accepted in a thesis. (Ritchie et al., 2014, p. 6)

There are three main views according to Saunders et al. (2012, p. 132-137) to what is to be considered when conducting research; Positivism, Realism and Interpretivism. Positivism is often associated with natural science but has been converted and used in social science as well. Positivism seeks to find relationships in a reality which are generalizable and can be observed (Saunders et al., 2012, p. 134). There is some criticism towards positivism however. Those arguments are that due to a generalized picture one will lose insight in a socially constructed world (Bryman & Bell, 2011, p. 16; Saunders et al., 2012, p. 137). Closely related to positivism is realism which states that what human senses in their surroundings defines reality. In realism, there are two forms to be contrasted; direct realism and critical realism. Direct realism says that what you see is what you get and that the things we experience through our senses portrays the world accurately. Critical realism is the second kind of realism and argues that what we experience are impressions, pictures of the world and not the real world itself. (Saunders et al, 2012, p. 136) Those who are critical towards positivism and its emphasis towards a complex social world of business and management may lend them self towards the third aspect, Interpretivism where supporters claims that researchers needs to be able to
differentiate between human and objects and that rich insights in the world are lost if complexity is reduced to basic generalisations. (Saunders et al., 2012, p. 137)

In our research, we want to investigate what the actual risks are for companies whose competitive advantage mainly consists of IP. The study will focus on the individual’s perception of the problem rather than leaning on facts and statistics to draw a conclusion for our research question. Our preconceptions will also play a role in the matter of analysing, discussing and interpreting the answers we will receive from our interviews. Because of these reasons, we believe that the interpretivist approach is the most reasonable approach for our thesis, compared to the Positivism and Realism. The people at company X which will be interviewed are expected to give their own view on the problems and situations they face and will therefore act as individual actors. Saunders et al. (2012, p. 137) states that is it crucial in the interpretivist approach that the researchers adopts an empathetic stance and that the researchers enters the social world of the research subjects to understand things in their world from their point of view. In this research, we will focus on understanding the reasons behind back-sourcing, the risks associated with it and how the back-sourcing process affects the IC (intellectual capital) when it’s already been shared to the outsourced vendor. The data that gathered from interviews, informal meetings and observations of daily routines such as coffee breaks at company X office will be interpreted in a way so that meaningful conclusions can be made.

The concept of axiology is a philosophy which studies the understanding of value. For the research results to be credible, it is important to be aware of the key role that the researcher plays in all stages of the research process. (Saunders et al., 2012, p. 137) According to Heron (1996, p. 11) being able to show axiological skills means one is able to articulate what research one is doing and how to go about it as a researcher.

3.3 Research approach

“We argue for a case, we generalize, and we construct explanations and interpretations.” (Mantere & Ketokivi, 2013, p. 71). To draw conclusions from social science, the three basic forms of reasoning above is used.

The research approach refers to how we have used existing research and theories to reach to our research question and conclusion. According to Saunders et al. (2012, p. 144) there are three forms of research approaches, deduction, induction, and abduction. A deductive approach to research have a starting point in theory, usually found from academic literature, and aims to test the chosen theory. In a deductive research approach, you aim to generalise from general to specific to approve and reject a theory. (Saunders et al., 2012, p. 144) In a deductive approach the author is concerned with deducting conclusions from premises, with the strict condition that the conclusion is derived from the premises (Ketokivi & Mantere, 2010, p. 316).

An inductive research approach can be seen as the opposite of a deductive approach, where the conclusion is based on knowledge claims rather than analytically implied from the premises. (Ketokivi & Mantere, 2010 p. 316) An inductive research approach starts with collecting data to create an understanding about the phenomena, and arriving to generate or build a theory. A smaller sample of subjects is more appropriated with an inductive approach, the strength of the inductive approach is to be able to understand how humans interpret their social world. (Saunders et al., 2012, p. 146)
Abduction as a research approach have both similarities with deduction as well as with
induction. An abductive research approach moves back and forth between theory and data.
(Saunders et al., 2012, p. 147) Saunders et al. (2012, p. 150) summarizes abduction as the
following: “Data are used to explore a phenomenon, identify themes and explain patterns, to
generate a new or modify an existing theory which is subsequently tested, often through
additional data collection.” An abductive research approach is used to explain an inference, to
form a theory (Mantere & Ketokivi, 2013, p. 72).

An inductive approach starts with collecting data, in our thesis it started with evaluating a
company, where we identified this phenomenon and after that examined relevant theories. In
our thesis, we aim to find the risks involved in backsourcing when some form of intellectual
capital is shared to an external party, making the inductive research approach suitable. From
our case at Company X, we formulated the research questions. The data will then be derived
from all employees and the CEO from the case company. However, we do see some deductive
elements in our research approach, as we mentioned that we examined relevant theories.
Considering we started from the case, we still believe our approach to be inductive. Bryman
(2011, p. 28) mentions that an inductive study can have some deductive elements, as we are
aware that our thesis has. As mentioned above, smaller samples of subjects are more appropriate
when performing an inductive research approach. How a company cope with the risks that arise
when backsourcing intellectual capital will also be examined for a deeper understanding.
Through this study we aim to enhance the knowledge about backsourcing and intellectual
capital, and help the case company in their decision whether to backsource or not.

3.4 Research design

The research design decides how you will go about answering your research question and will
contain goals from the research question, which sources the data will be collected from, how to
collect and analyse it and discuss potential constraints of the research (Saunders et al., 2012, p.
159). The research design often contains three different types of methods that can be used;
qualitative, quantitative and multiple methods research design (Saunders et al., 2012, p. 161). A
quantitative method has an objective ontology. The researcher has a deductive approach
towards theory and practical research with extra focus on testing theory. It aims to make the
world objective and as general as possible which is related to a positivist epistemology. It can
however be associated with a realist epistemology as well. The goal is to examine the
method however is associated with a subjectivist ontology with an inductive approach taken by
researchers towards theory and practice with focus on generating new theory. Further on the
qualitative method steps away from the natural philosophy and emphasizes how the individual
understands and interprets his/her social environment which can be linked to an interpretive
epistemology combined with an inductive research approach. However, a realist epistemology
is also related to the qualitative method. The goal is to study the deeper meanings of things
(Bryman, 2011, p. 40-41; Ritchie et al., 2014, p. 31). The multimethod research design is
associated with the realist ontology, especially the critical realist, interpretivist epistemology
and either a deductive or inductive approach (Saunders et al., 2012, p. 164). The goal with
multimethod is to use both quantitative and qualitative methods to study deeper meanings using
empirical data (Saunders et al., 2012, p. 164).

Based on the research question, purpose of the thesis, the research philosophy and approach for
this thesis, the research design will be of a qualitative design. The reasons are that firstly, we
believe that an interpretivist philosophy will enable us to answer our research questions and gather the necessary data to answer them since we want to study the problem from the subject’s point of view. If we were to study it from an objective point of view we would have to conduct a quantitative study where multiple companies would need to be studied on an objective level. Secondly, we want to study something that has not been studied before. There are next to no theories regarding the problem we are considering. Therefore, we want to go by an inductive approach, i.e. attain a deeper understanding about the phenomenon back sourcing. A qualitative approach is a solid fit since it allows the researcher to go into details with the respondents and get a deeper understanding about their social situation and how they see the problem. Thirdly, the research question and purpose aims to find new variables and measure their impact thus a qualitative method is a solid match as the sample size is small and requires the researchers to investigate all the details. Lastly, flexibility also plays a key role as well when it comes to qualitative research. Bryman (2011, p. 366) claims that if a structured method where the social environment is already decided by the researcher, is to be applied, certain decisions needs to be taken on what is expected to be found and in what kind of social environment these findings will be made in. Flexibility must be considered by researchers when deciding on which type of method that should be used, since it will likely affect the outcome on the studied subject. Because of this, the qualitative method is preferred over the quantitative method since it allows us to have a looser structure where the subjects are feeling comfortable, being able to provide more accurate answers about their surrounding and how they perceive things in their working environment. As we consider flexibility to be important for our own study, we see the qualitative method as the best fit.

The weakness with using a qualitative method is that it is hard to create generalizable results which can be used in other scenarios, emphasizing the researcher's own assumptions on what is important and not to heavily, making it hard to replicate (Saunders et al., 2012, p. 162-163; Bryman, 2011, p. 368-369). But since the purpose of this study is not verify whether there are any effects which can be generalized in our case company. But to find the risks that is associated with back sourcing a company's intellectual capital from a vendor who know the know-how and how to mitigate these risks to the highest degree possible, we find a qualitative research design to be reasonable in this situation. Marshal & Rossman (1995, p. 5-6) speaks about at least three challenges that qualitative research faces: (1) To develop a conceptual framework for the study that is thorough, concise and elegant; (2) to have a design that is systematic yet flexible and (3) to integrate these into a coherent document that convinces the reader that the study should be done and can be done. These are factors we will need to acknowledge in our study to make sure that we can actually fulfil them.

3.5 Research strategy

Research strategy is defined by Saunders et al. (2012, p. 173) as “a plan of how a researcher will go about answering her or his research question”. The choice of research strategy will be a result of the research question and objective. The plan of action can be different depending on the study, if the research design is qualitative, quantitative or a multi method will determine which strategy is most suitable. A quantitative research design is linked to research strategies such as experiment and survey. A qualitative research design is linked to research strategies such as ethnography, action research, grounded theory, and narrative inquiry. Case study and Archival research as strategies can both be used for qualitative and quantitative research. These strategies are not to be mutually exclusive, since it is possible to combine different research strategies. (Saunders et al., 2012, p. 173)
In this thesis, we will answer our research question through a case study. To answer “What?, “Why?” and “How?” questions, the case study strategy is well suited for that task (Saunders et al., 2012, p. 179). Seeing our research question is partly a what question and partly a how question, we believe the case study approach to be optimal for gaining a deeper understanding of the risks when backsourcing intellectual capital and how to prevent them. A case study is often used in an explanatory and exploratory research (Saunders et al., 2012, p. 179). An exploratory study is used to gain in-depth understanding of a phenomena and gain insight of a problem (Saunders et al., 2012, p. 171). This study is considered to be an exploratory research because we are striving for enhancing the knowledge regarding risk and prevention of risk in backsourcing intellectual capital.

A Case study can have 4 different strategies with 2 dimensions, single case versus multiple cases and holistic case versus embedded case. A single case study can be used when it provides the researcher with a phenomenon few have considered to observe and analyze (Saunders et al., 2012, p. 179). In our search for theories we noticed that the risks involved with backsourcing intellectual capital have yet to be researched, making a single case study optimal. Our case is within a knowledge-intensive company; however, they have 3 different products whom 2 of them they want to backsource and the other product being the starting point for considering backsourcing. We will therefore have 3 mini-cases within the larger single case study. To obtain rich empirical data, the interviews should be with highly knowledgeable individuals who perceive the researched phenomena from different perspective, this is a key approach and a highly efficient way (Eisenhardt & Graebner, 2007, p. 28). In our study, we will interview the individuals who is in charge for the different products, and identify what risks they see for themselves. Because of the intellectual capital that is shared to the outsourced partner could be different depending on the product, the respondents might have different views on the risk involved with backsourcing it. The company is small and therefore the employees works closely with each other, by this they also know a lot about each other's area of responsibility which potentially could lead to a kind of group-thinking amongst the workforce. Because of the group-thinking they might perceive the same risks and so forth how to prevent those, which could limit the gathered material. This is something we must be aware of when constructing the interview guideline to ensure sufficient data gathered. We believe that by asking the respondents about different products, the answers will be towards that specific product. This is a measure we believe to limit the potential group-thinking, because the respondents need to think specifically about the risk for that product.

### 3.6 Data collection method

In our data collection, we have used interviews and observation to obtain primary data. The section below will first explain the different kind of interviews and observations, then argues for the type of interview and observation used in this study.

There are three main methods of conducting interviews that are typically used in qualitative research; Structured interviews which uses questionnaires based on a set of predetermined questions. Semi-structured interviews where the researcher has a list of theme and key questions and Unstructured (in-depth interview which are informal and are used to explore a general area which you are interested in learning more. (Saunders et al., 2012, p. 374-375). Looking at this thesis research question, objective and the scientific method we believe semi-structured interviews is the most appropriate method for our thesis. Since the study will be a single-case
study and focus will lie on finding the potential risks for the intellectual capital when back sourcing, semi-structured interviews works very well due to it being an exploratory study which may provide valuable background or contextual material for a study (Saunders et al., 2012, p. 377).

### 3.6.1 Observations

Using observation as a data collection method involves systematic observations, recording, description, analysis and interpretation of people’s behaviour. Structured observations and participant observations are two types of observations with different suited applications. (Saunders et al., 2012, p. 340) Structured observations is suitable for quantitative studies because it aims to quantify behaviour and tell one of the frequency of the subject rather than looking in-depth (Saunders et al., 2012, p. 355). In this study, we aim to understand a phenomenon in-depth making it a qualitative research. Because of that we will not use structured observations and therefore not examine it further. Participant observations is quantitative and aims at “discovering the meanings that people attach to their actions” (Saunders et al., 2012, 340). In our study, the researcher’s identity and purpose is revealed and we observe rather than participate in the case studied, therefore we use the participant observation type observer-as-participant.

Further on for this study, we have chosen to use primary data. Primary data does not contain any interpretations by other researchers and is collected by ourselves. The main advantage of using primary data compared to secondary data is that the primary data is completely new and fresh which increases the reliability and validation of the results. (Shiu et al., 2009, p. 63) The principal method used in the research was semi-structured interviews with the project leaders and the CEO, supplemented by participant observation. The interviews were conducted in the range of 2 weeks in the beginning of April, and the observations was conducted continuously for four months.

### 3.6.2 Semi-structured interviews

Depending on the situation one is facing, the method which is deemed most appropriate varies a lot. Since we have chosen to go for a qualitative method, interviews will be conducted to get a deep and detailed understanding of the phenomenon we are studying. There are several types of interviews that can used in qualitative studies that we mentioned in the text above. Because we want to be flexible and infer causal relationships between variables, semi-structured interviews are a good fit for our study (Saunders et al., 2012, p. 378). Further on, it is a suitable method since it allows for large amounts of data to be gathered within a short amount of time (Marshall & Rossman, 1995, p. 80).

Saunders et al. (2012, p. 378) also states that semi-structured interviews provide the ability to probe answers which means that an interviewer can ask the subject to evolve their statements on certain topics or further explain it. As the subjects might come up with new ideas, interpret words differently or use ideas in a special way, being able to probe these answers will provide meaningful depth to the obtained data. It also may lead into the discussion heading into areas you did not first consider which might give helpful information towards to research objective. Semi-structured interviews also allow the subject to hear himself think out loud which can lead to additional information being shared. (Saunders et al., 2012, p. 378) These benefits for semi-
structured interviews are all useful for our study since we will be allowed to let the interviewed subjects have freedom and play around with the questions we will give them and fill in where they feel it is needed compared to a structured interview where that is not possible. Further on, we will have a set of questions to fall back onto which is good security to have due our lack of interviewing skills which is good compared to an unstructured interview where you totally rely on your interviewing skills. We will will the participants consent also record the interviews to be able to process the data later. Marshall & Rossman (1995, p. 109) emphasized on the importance of making sure that the participants are not interfered as the interview takes place because it might interfere with the results since the participants does not feel comfortable. We will therefore be clear towards the participants how the recordings will be used by us to avoid this situation.

3.6.3 Interview guide

The interview framework starts off with more general questions regarding the persons themselves and what their actual role is at the company. Since we are on commission for the company, the subjects are already aware of the purpose of our study. During our time at their facilities, we have discussed our work several times making them aware of our study and the purpose of it.

Our Interview guide is designed in a way that each person at the company will be able to answer the different questions. In total, we made 39 questions which were divided into seven different categories based on our theoretical framework. The first category was general questions where we ask the subject about personal information regarding his role at the company, background, how long he/she has been employed at the company and what products he is responsible for. This is to get a broad and better understanding of the person's area of expertise and role within the company. The second section of questions is about knowledge intensive firms. The aim is to get an understanding if the company is active in its work in protecting their IC, how do they do it and how do they manage relationships with other actors who they have shared knowledge with. Then we move on to the products and its specifications. Here we ask what product the subject is responsible for, how complex it is to produce, which parts of the production is outsourced (every part or just some parts), and the company's overall satisfaction with the supplier. To understand the backsourcing decision we need to know the details about the product itself and its complexity. After that we start asking about the contract and details surrounding the process of creating it and which people are involved. The reason is to get a better understanding of the structure that the company works under and how they cope with handling risks in their contracts. After that we move on to the outsourcing part where we ask the subject about the importance of outsourcing to the company, if they see themselves as important customers to the outsourced actor and to see if they still find them in control over the outsourced activity. From this we hope to reveal what the company's strategy is when it comes to outsourcing and what the deciding factor was to go through with it. The last section of questions we will ask are about the backsourcing process and the risks that goes with it. We want to see what the reasons are for them wanting to backsource and how important the relations to the outsourced actor are once the backsourcing takes place. From the risks, we want to dive into the company’s awareness when it comes the shared IC and how careful they are when it comes to protecting it when backsourcing.

We are convinced that these sets of questions will give us the necessary information to build our conclusions upon. Since the persons we are interviewing are all having an academic
background we see no risks when it comes to difficult words which in the worst case can be described due to the nature of semi-structured interviews. Also, the questions are based on knowledge gained from the theoretical framework and the observations which further strengthens that our questions will provide the necessary information to make significant conclusions.

The length and the content of the interviews can be viewed in Table 1. As the purpose with this thesis is to identify the risk related to backsourcing intellectual capital and how they can be prevented, the semi-structured interviews are argued to be suited (see 3.6.2).

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Length of interview</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>INT1 - Project leader for Product A</td>
<td>1h 12min 13s</td>
<td>Mostly about product A but also insights about Product C</td>
</tr>
<tr>
<td>INT2 - Project leader for Product C</td>
<td>1h 7min 34s</td>
<td>Mostly about Product C but also insights about Product A</td>
</tr>
<tr>
<td>INT3 - Project leader for Product B</td>
<td>1h 49min 8s</td>
<td>Mostly Product B but also insights about Product C</td>
</tr>
<tr>
<td>INT4 - The CEO</td>
<td>1h 8min 18s</td>
<td>An overview perspective, regarding all the products but mostly about Product C</td>
</tr>
</tbody>
</table>

*Table 1. Duration and content of the interviews*

3.7 Data processing

In qualitative studies, the data collection and analysis goes hand in hand to promote the emergence of theory grounded in empirical data. (Marshall & Rossman, 1995, p. 112). Processing the collected data is a crucial step to be able to analyse and draw conclusions from the gathered information since we are conducting an inductive study. This combined with an interpretivist view leads us having to interpret and conclude on the participant’s answers and arguments in their environment when it comes to the risks with backsourcing intellectual capital. We will then use our own knowledge in combination with our selected theories to try and make conclusions. We will also compare our empirical findings towards scientific papers. To help us with this process we have used Braun & Clarke (2006) thematic approach. Due to its qualitative nature, we believe it's a good fit of our study. A thematic analysis is when a researcher is searching across a set of data which can be multiple interviews, focus groups or a range of texts to find repetitive patterns which can give meaning to one's research question (Braun & Clarke, 2006, p. 15).

Braun & Clarke (2006, p. 16) uses a six-step model which is a guiding tool for researchers to use in their qualitative research.

Phase 1: *Familiarising yourself with your data*

Braun & Clarke (2006, p. 16) writes that once the data is collected, one needs to immerse oneself into the data to such a level that one gets familiar with the content. It's important to be prepared before the coding of the data begins as possible patterns will be formed as you read...
through it. If interviews are being done, transcripting the interviews immediately is an effective way to better understand the data and is seen by some as a key phase of data analysis within interpretative qualitative methodology. (Braun & Clarke, 2006, p. 16-17) We started to transcript and read through the data as soon as the first interview was done. This helped us to get a better understanding of the data we collected as we got to repeat everything we had heard in quick succession to the interview. This helped us create meaning of the following interviews as we were more familiar with the subject while also making sure the accuracy was good.

Phase 2: Generating initial code
As one gets familiar enough with the gathered data, the coding phase begins. Codes means finding a feature based on the data that seems interesting and provide meaningful insights towards the researched phenomenon. The coding also depends on whether the study is data-driven or theory driven. Data-driven means that the selected themes will be based upon the data while Theory driven takes the opposite approach and the themes are based on theories. (Braun & Clarke, 2006, p. 18) Two advices which Braun & Clarke (2006, p. 19) gives is to code for as many themes/patterns possible as things might change later and a certain theme or pattern becomes interesting. The second one is to include the context to validate the research since it’s a common critique against coding. In our study, we have used the theory based approach to try and link our themes and patterns in the chosen theories. We also tried to implement the context to a large extent in our research by observing Company X daily routines and being at their office at least a couple of days a week.

Phase 3: Searching for themes
For phase 3 the main focus lies within finding the broader themes out of the initial themes and patterns, from which relevant data extracts will be collated amongst each other (Braun & Clarke, 2006, p. 19). Once we had completed each interview we always compared what the overall patterns where from each occasion. As each project leader’s answers were more focused towards their own product, we used that information and compared it to the other products and the overall theory to come up with themes which in our case were, for example when one of the interviewed person stated Company X’s risks when backsourcing and reasons for outsourcing.

Phase 4: Reviewing themes
Once a set of themes has been made up, refinement needs to be made to come with the definite themes which will be used for the analysis (Braun & Clarke, 2006, p. 20). As we had many of our themes based out of the literature such as knowledge-intensive firm, view on outsourcing, view on backsourcing, risks related to backsourcing intellectual capital and preventing measures. We used them in combination with the statements and answers from the interviewees to make sure that they cohered with one another.

Phase 5: Defining and naming themes
In phase 5, Braun & Clarke (2006, p. 22) states that themes should be refined and definitely stated. As the themes gets settled, we will use a good narrative to explain them in detail why we saw it as an essential narrative to use in our research. The themes we found were Knowledge-intensive firm, view on outsourcing, view on backsourcing and risk related to intellectual capital and preventing measures.

Phase 6: Producing the report
In phase 6, the final analysis is given. It is important to tell the complicated story in a simplified way which gives merit and validity to the analysis. It is very important also to show examples that clearly proves the point of the theme. (Braun & Clarke, 2006, p. 23 Further on Braun &
Clarke, 2006, p. 23) states that the extracts of data need to be embedded within the analytical narrative in a thrilling way, as well as going beyond the description of data and make arguments to the research questions. In our case it means we will draw conclusions based on our interpretation of the collected data and its matchup with the theory. We will also make sure to argue for our choices that we make throughout the discussion part.

### 3.8 Ethical considerations

The case study is conducted in such a way that the company we are on commission for and its interviewees are aware of our conducted research. To ensure that the subjects are comfortable throughout the whole research process, we have made sure that they have been informed properly about the research ethics. The reason being that a good research setting can provide the most accurate answers towards our research. Ethical research consists of four different characteristics which are the absence of harm to the participants, the lack of informed consent, the invasion of privacy and deception (Bryman, 2011, p. 118). To reach these characteristics, the four different interviewees were informed at the start of the interviews that they could quit the interview at any time if they felt uncomfortable in any way. They could also choose when they wanted to have their interviews. During the duration of our observations we tried to be as non-interfering as possible to let the project leaders and the CEO work under the most normal working standards as possible. Also, as the research progressed we informed the employees at the company to make sure no side-steps was taken in terms harming the company. Further on, since one of the project leader did not have Swedish as his native language, we translated the questions for him to understand them properly, anything which can be related to the company's identity was decided to be set as anonymous since the company are sharing details which can benefit their competitors and partners. Therefore, we cannot share the details of which market the company is in as it might reveal the identity of the company. It also lets the research subjects give an unbiased opinion about the industry. As we are on commission for the company this is important to make sure that the information we are given is unbiased. Data related to the company's area of business will not be used either since it's not a contextual factor which we are studying in our research. The questions asked will be of a semi-structured nature and focus on the research topics which are related to the risks when backsourcing intellectual capital and how one can prevent them. The subjects will be able to discuss the questions very freely due to their openness. This shows that the interviewees have not been forced to share any specific information or been guided into giving certain answers. Lastly, we have been very specific from the start that this is a degree project written for the university which means certain rules must be followed. Once the project is finished, the results will be presented to the company and a copy of the work will be given to the company as well.

### 3.9 Quality criteria

To make sure that the finished project is of a high standard and quality certain steps can be followed. There are however different ways of doing that. Bryman & Bell (2011, p. 395) speaks of the trustworthiness or reliability and validity as two different methods to verify the quality of a study. We have chosen trustworthiness as our criteria which means we will use the following four criteria for our research: credibility, transferability, dependability, confirmability (Bryman & Bell, 2011, p. 395).

Credibility: The objective with credibility is to show that the analysis was done in a way that the subject was properly identified and portrayed. It is important that the analysis is “Credible
to the constructors of the original multiple realities”. (Marshall & Rossman, 1995, 143) Further on, the strength of qualitative studies (lies within its) which aims to portray a setting, a process, a social group or a pattern of interaction is its validity. Being able to make an in-depth description of complex variables and interactions shows that the data which is embedded within the setting cannot be anything else but valid. That means that within a given set of parameters, its population and theoretical framework, the research will be valid. It's therefore important that the researcher makes those boundaries to set up the parameters surrounding the study. (Marshall & Rossman, 1995, 143) To be credible on our research we have used scientific peer-reviewed articles for our theoretical framework. We have created limitations such as having the perspective of the buyer when it comes to outsourcing and only investigate the production process to make the study reasonable in terms of size and time. We have also made our interview guide based upon the theoretical framework, giving us answers which can be explained by the theory and enable us to draw logical conclusions from the collected data.

Transformability: Marshall & Rossman (1995, p. 143) states that transferability is about demonstrating one set of findings and its applicability on a different context than the original one. The transferability of a qualitative study to other contexts is overall a problematic matter. The generalization the qualitative findings to other populations, settings and treatment arrangements is called external validity and is often seen as a weakness in the approach by traditional canons. There are ways to counter this. For example, the researcher can refer to the original theoretical framework to show how data collection and analysis will be guided by the original theories concepts and models. The researcher thereby states the parameters of the study. Others who then decides to make a study with similar parameters can decide whether the case described can be transferred to other contexts. (Marshall & Rossman, 1995, p. 144) In our case this regards transferring the results of the identified risks when backourcing for a knowledge intensive firm and how to prevent them into another context that other researchers can use and consider for their own projects. However due to our limitations we are sure that we have not covered all the factors for our research which make it difficult to transfer into other settings.

Marshalls & Rossman (1995, p. 144) mentions an additional strategy which increases a study's generalizability: Triangulating multiple sources of data. This strategy can make the qualitative study perform better since it brings more than one source of data to rely on for a certain point. Using multiple methods for data gathering can enhance the usefulness of the study for other contexts. (Marshall & Rossman, 1995, p. 144) In our study we used observations as we worked with our thesis at their facility which gave us the opportunity to observe their daily conversations, and face-to-face interviews for gathering data. These two combined enabled us to get a better understanding of the company and our research questions.

Dependability: The construct of dependability is when the researcher tries to refine the research design and changes in conditions as his/her understanding of the setting gets better. This set of assumptions is different compared to the ones forming the concept of reliability. The view that positivists takes of reliability where the universe is unchanged and replicability of a study is possible. This is the contrary view to a qualitative/interpretive assumption that the world is constantly evolving and changing and that replicating something is very difficult. (Marshall & Rossman, 1995, p. 145) It will be difficult for our study to be replicated since we are performing face-to-face interviews and doing observations during a lengthy period at their workplace. These are subjective in nature and belongs to the qualitative spectrum where the context is unique which means similar results will be hard to obtain.
Confirmability: The last construct, confirmability captures the traditional concept of objectivity. It is important to ask whether the findings in the study can be confirmed by another part. (Marshall & Rossman, 1995, p. 145) Because of this, we recorded every interview to ensure that we can prove our findings. Bryman & Bell (2011, p. 398) also talks about the difficulty of being completely objective when conducting business research. In our research, we have made sure to transcribe the interviews very precisely so no misinterpretations can be made.

3.10 Literature search and criticism
Once we found the problem at Company X which relates to backsourcing and intellectual capital we started to search the literature for theories regarding the subjects. As we were already familiar with the concept of backsourcing due to our education, we knew that outsourcing also was an important part to include since backsourcing cannot be done without outsourcing something first. Based on the three different subjects, backsourcing, outsourcing and intellectual capital, a theoretical framework that has been created. For our study, the literature search mainly focused on finding theories regarding the pros and cons of backsourcing and outsourcing. With intellectual capital, the focus was on how to protect it. From the findings in the theories, a theoretical framework was created.

The core literature that has been used mainly comes from scientific articles and books. The data has mainly been gathered using the databases available at Umeå university library which has access to a large number of scientific articles. The words that have been used in different combination to search for articles are terms like: backsourcing, outsourcing, risk, intellectual capital, and knowledge intensive firm. When articles that were found and deemed appropriate for the research, we used their references to expand and find new relative articles.

To ensure that the data which was collected is of a high quality, we made sure to only use peer-reviewed articles in our study with the exception for a thesis written by Hätönen & Eriksson. Hätönen is an experienced researcher within the area of outsourcing with many years in the field while Eriksson was his assistant in writing the thesis.

For this thesis, there have been several different authors for the different areas which we have used for our theoretical framework. For outsourcing, we have used Fan (2000) and Fill & Vesser (2000) who explains outsourcing in a good way. Outsourcing is a well-researched area where many authors have contributed with respectable work. Since our thesis mainly wants to focus on backsourcing and intellectual capital, more emphasize has been put on these areas. For backsourcing we have used Veltri et al. (2008) and Wong et al. (2008) to build our view on backsourcing upon. Backsourcing is a fairly new concept and as mentioned not a lot of research exists (see 1.4), this is also why we have used research that is closer to a decade old. Through an extensive search we have only found these literature, we are aware of this but still find them viable. An example is by searching for “backsourcing” in the database of Umeå University library, you’ll only get 167 hits. This is something we believe argue for the limited research made in backsourcing, and explains the research used. Regarding intellectual capital, many different authors have been used to get an understanding of the concept and how firms protect themselves.

As for the methodology, we have mainly used the books written by Saunders et al. (2012) and Bryman & Bell (2011). For the case-study we used Marshall & Rossman (1989). Combined
these have been used to guide us in our methodological structure and how to make it understandable.
4. Empirical findings

This chapter will present the collected data from our observations and interviews. First, we will give a brief introduction about the case company. Then the interviews will be presented to lastly show our key observations made before, during and after the interviews were conducted.

4.1 Presentation of the organization and participants

This case study was made on a knowledge-intensive small firm. The organization is located in Sweden and is focused on research & development. The company consists of 4 persons, 1 CEO and 3 project leaders, who all have been interviewed. All the respondents have relevant academic background for their industry. The company has existed for 4 years and have a product portfolio consisting of 3 main products who have different versions for different purposes. Product C is still in the developing phase but is getting closer to becoming a finished product, Product A and B is at this point finished products available for customers. To enable a deeper understanding for risks with back sourcing, the interviewees are asked about one product each. The CEO was questioned about the company, with all the products embedded. Therefore, we revised the interview guideline for him.

In the interview guideline, we began by asking general questions about the respondent’s position on the company, tasks, time of employment and the product he/she is responsible for. For interview 1 the respondent is called INT1, for interview 2 INT2 and for the third respondent INT3. The CEO interview was conducted last, named INT4.

4.2 The interviews - summary and results

This chapter will summarize our primary data gathered from the semi-structured interviews. Furthermore, the structure of the interview guideline will be the same in the empirical findings. Each theme will start with briefly stating why the respondent was asked about this theme and what it will contribute for answering our research questions.

4.2.1 Knowledge-intensive firm

This section of the empirical findings regards the aspect about knowledge-intensive firms and how they handle the intellectual capital internally and externally. This section will provide us key insight on managing intellectual capital, which will help us to identify the risks and how they are prevented.

INT4 is responsible for leading the workforce and ensuring that Company X heads the right direction. Currently he is involved in strategic decision regarding the future of Company X, mainly considering the transition from being a research & development firm towards also being a producing firm. INT4 is accountable for the contracts, making sure they are well-written and ensures no damaging content for Company X. INT1 is responsible for product A and have been on the company from the start, he have been involved in the development of all the products of company X and the patents. Currently INT1 is the project leader for product A, his work tasks involve leading the project, research & development of product A and also some marketing and sales. Int2 is the project leader for product C, by this he has 2 different tasks regarding product
C. First, he tests the product in different settings and with customers, the second task is researching how to best produce Product C in-house and by that establish a pilot factory. Which involves finding a facility, the necessary equipment and the right methods in producing in the most optimal way. INT3 is the project leader for product B, he was brought in to enter a new market with Product B. “that is probably 50% of my role, in reality we are a small organization and therefore I need to pick up whatever needs to be done”. He then explains that he spends a lot of time on the supply chain, research and development, and other issues arising. INT2 states that “Due to the size of the company, everyone needs to do basically everything which is a challenge”. The main advantage for being four persons is that the decision process and information are quick and easy to obtain. As INT2 states “The entire company can sit by a table and discuss the future of the company”.

All the respondents answered unanimously that their core competencies are research & development. INT3 acknowledges that “This is a dynamic thing, and something we ask ourselves a lot, our core competencies right now is our research and development, and our intellectual properties.”. The reason they ask themselves that is due to the transition from being a R&D firm to becoming a production company. When this transition occurs the core competencies of Company X will change and therefore making the production process a core competence. INT1 acknowledges that they lack experience in selling, which is the phase they are entering now with product A. INT4 mentions the transition from developing products to producing and selling themselves as the biggest challenges for Company X.

Because of the core competencies being intangible, the contractual arrangements are crucial to protect Company X from future risks from external collaborations. INT4 mentions that they are working with two different business lawyers, depending on the complexity of the contract they are used differently. He further states that if the agreement with an external part is straightforward and have a good point of departure, they have established template the lawyers have checked and approved. However, in a more complex situation, Company X use bullet points of what they want to achieve with the arrangement and then sending it to the business lawyer. Later INT4 and lawyers meet to discuss the contract to later compose the contract. According to INT4 this ensure well-written contracts. From the interviews, it is clear that Company X has a clever strategy on how to ensure detailed contracts.

4.2.2 View on outsourcing

The reason Company X outsourced the different productions will be examined below. To understand the risk with backsourcing, a deeper understanding for their outsourcing decisions is necessary.

Firstly, there are multiple steps in the production Processes for product A, involving specialized tools and sophisticated technical knowledge. Because of the lack in technical knowledge regarding the production and not having the proper tools for producing, the production of Product A was outsourced. They realized early that Company X needed expert help in producing Product A, which led to them contacting one of the best producers in Europe who they outsourced the production to. Through the partnership and their expertise, the product has improved via discussion.

The manufacturing of Product B is outsourced to a company in Sweden. The reason company X outsourced the production of Product B is simply because at that time, they had to prioritize
their resources and focus on the things which added value to the organization. INT3 believes product B to be relatively easy to produce and states that compared to the other products it’s the easiest one. The producer of Product B operates in the same market as Company X.

INT3 states that they were helped by the producer of Product A with the last assembly with product C, which they handled well. Both parties are aware that this is something occasional, but they were satisfied with the assembly. Currently they have outsourced the assembly to a second producer, who’s task is to find different solutions compared to what the current producer offers. This outsourcing was a strategy to let somebody else establish the production technique which latter can be used by Company X.

INT4 wasn’t the CEO at the time when the outsourcing decision was made. He is still aware of why they outsourced the production for product A & B. Therefore, it wasn’t INT4 who chose the outsourcing partners. However, he knew the reasons was that they didn’t have the competence inhouse to produce the different products. To establish a production facility was not an option at the time due to the high costs and a long time to get to the market. He further concluded that by outsourcing you bought time, in the sense that the outsourced partner had a facility up and running. “To organically grow into a producing company always takes longer than buying the service from someone who already has a functioning production facility”.

The questions then revolved around the expectations being met. Overall company X is satisfied with their vendors. INT4 mentions that there is room for improvements but overall all, their performance is good. INT1 explains that product A has because of the relationship with the vendor improved through numerous discussion back and forth. As we see it, Company X have established good relationships with their producing vendors. They trust them not to disclose sensitive information. INT3 was shown their strict rules for visitors where he was escorted around and was not allowed to walk alone in the facility. Enhancing the trust with the producer of Product B. Because of the good relationship with the producer of product A, Company X trusted them to do the first final assembly of Product C. It must be stated that both parties were aware this was a one-time thing.

The improvements identified was the contracts with the partners, INT4 mentioned that they should cover more about how to handle situations when opportunities arise. As INT2 states “We believe that we can find new undiscovered intellectual properties if we produce ourselves, both for product C and the component used in it”. Meaning that the producer also could find new opportunities regarding the different products, and should therefore be included in the contract.

Another improvement regards the scheduling, because Company X currently orders small quantities their needs are not prioritized by the vendor for either Product A & B. INT3 argues that they are not in control over the production “In terms of their operations and scheduling the production order and runs, whichever week they run, we can't dictate that to them. The only thing we can do is threaten to terminate the relationship and go somewhere else.”. There are very few options when it comes to other production in Sweden, which the producers are aware of. With that said they are aware about their bargaining power, and are so forth not pressured to lower their pricing.

The only improvement the producer for product A can do, is to improve the quality. INT1 acknowledge that the reason for a lower quality is because the producing firm has had to buy new machines and tools, and accounting for the learning period of producing their product. Which is an acceptable explanation for Company X.
Company X view on the importance of outsourcing was clear, it is very important. INT4 states “They are essential for our business since they are linked to our competence and development process”. Company X argues that the outsourcing relationships are important for them for their competitive advantage. INT3 agrees and further adds “we cannot do everything on our own, we have to focus on parts on the value chain where we are potentially vulnerable to losing excessive margins, so we have to try to bring those aspects in first foremost”. INT1 also mentions that they want to maintain the relationship with their suppliers. He states that by not keeping a good relationship with the vendors could result in a bad reputation for Company X. He mentions that “If company X is not cautious, other companies might not want to cooperate with us in the future which might hurt us in the long run”. So, the importance with outsourcing is clear, firstly for producing the products. Secondly for the reason that they can't do everything on their own, and thirdly the partnerships will confirm their competence in being a good choice as a partner.

Even though Company X is satisfied with their vendors, the control factor is an issue. Overall, they feel in control over the aspects stated in the contracts with the producers, INT4 have acknowledged that they could expand the reach of the contracts to obtain higher control. He believes this issue to be solved through discussion with the different partners, and together clearly state the expectations on each other. INT3 further argues for Company X having control over the confidentiality of the products. As mentioned before, they are not in control over when the vendor produces product B. The production technology for product A is not shared with Company X, “The supplier has chosen to withhold this information for now about how it is done. We have a contract ready to be signed where it states that they are to share this information with us. However, they are currently going through it and will probably come with a counter offer. It’s an ongoing negotiation since they want something in return and will hold their share of the cake as long as possible”. However, INT1 is certain they will release the technology because the vendor is operating in a market very different from their own. The production of Product C is also not fully controlled. INT2 states it is because currently the vendor uses a patented component in the final assembly. To avoid being bound to them and paying royalties using their component to product C, they have hired another supplier to experiment and see whether they can create their own version of the component. If possible, the long-term costs will go down. If not, then company X can only use the main supplier's version which will lead to higher costs.

Overall Company X had good reasons for outsourcing, these consisted of lack of production competencies, strategic choice and to focus on their core competencies. The resources required for producing in-house was not available at the time when the outsourcing decisions was taken. They are not in full control over their production, but they consider the relation to be good and that they can trust them. Their intellectual capital is secured but can be more elaborated in the contracts. However, they want to be in full control over the production of product C and obtain the advantages of potentially finding new intellectual property and improvements.

4.2.3 View on backsourcing

To understand the risks with backsourcing, the motives leading to the decision to backsource must be examined. INT4 explained that there are several reasons for backsourcing. Company X wants to earn money, take part in the efficiencies when scaling up the volume and get more knowledge about the domain to fully understand the product which INT4 considers one of the most important reasons. Being able to oversee the quality was also an important factor. It was
also nice to be a complete company in the eyes of the customer according to INT4 since it strengthened their view of the company. INT4 also explains: “With a solid foundation a company is also able to split their costs among several functions such as HR, IT, production and FOI as examples”.

We asked INT1, INT2 and INT3 about the specific reasons for backsourcing the product they’re responsible of. The decision to backsource has gradually grown upon the company. From the beginning, the intention was never to own the production but to simply try and develop the product. As product A came closer to being finished, the option for Company X to backsource and to produce themselves appeared more reasonable. INT1 believes the closeness to customers that the pilot facility will bring is an important reason for the customers. All their customers are for now located in Sweden. “The length for transportation is also decreased which leads to lower costs for transportation.”. Another reason is the cost reduction which owning the production of product A could bring through optimization. It is also easier to optimize when being in control since it allows for close supervision on the processes. “A simple thing as packaging is something a third party can charge a lot for. If it's done by yourself, you can save a lot of money. We believe there are a lot of cost savings to be made on the “easy things” such as packaging in this case”. When they own the production INT1 believes they can take part in the economies of scales product A can reach in the future. The synergy effect with product C is a major reason for backsourcing Product A.

The production of Product B is considered to be backsourced for the increased control over the production. By doing so the flexibility for Company X will increase considering the risk of late production and delivery will decrease. Backsourcing the production of Product B is justified through synergy effects with the pilot factory for Product C and if Company X considers the risk of scheduling and delivery issues to be too high from the outsourced manufacturer. The synergy effect plays a major role in the decision whether to backsource product B. As production is the second largest cost for product B, the possibility to split the cost among several functions is beneficial.

For product C INT2 states that “We believe that we can find new undiscovered intellectual properties if we produce ourselves, both for product C and the component used in it”. Which is the core reason for backsourcing Product C. The component assembled last is outsourced and the production process, while at the same time they have outsourced the task to develop and experiment with the same component to another firm. Because when they backsource, they want to be able to produce product C without being dependent on the patented component the current producer provides. INT2 states that “If the original supplier had the responsibilities to develop a new version of the component it might have become a new expertise knowledge for them. We wanted to avoid this and gave it to another company whose focus lies within a completely different market”. Which is a reason for them to backsource the production, namely that they will be able to keep that knowledge internally. The closeness to customers and the increased flexibility they aim to achieve highly affects the decision.

As mentioned earlier, they want to maintain a good relationship with all of their producers. If a contract is terminated in a bad manner, it could affect Company X reputation. INT1 mentions that “As a small company it is important to have a good reputation since it is very hard to wash away that stamp”. How they plan to inform about backsourcing is therefore an important aspect to consider. INT4 explained: “How it is solved is often determined by the discussions you’ve had with the company about the future. Communication is often the key in these situations”. If the contracts have been poorly written in the first place, there can be room for interpretation
which often leads to discussions over who is right and wrong. INT4 mentions situations where the vendor feels controlled and threatened because they are working on something that they can use for their market. He states that it’s important to act professionally. However, INT4 also speaks of the importance to go elsewhere if a better opportunity shows up. Company X does however aim to build long and stable relationships which is why it is important to choose the right vendors to cooperate with from the beginning. However, they don’t see this as a problem because for product A and C, the producers are aware that it’s the logical step for Company X to take. For the producer of product B, Company X is such a small customer that it won’t have a substantial impact on them. This make it easier to close up the contract, but all close ups should be handled with caution since it may affect the relation and Company X reputation negatively.

The last theme regarding backsourcing was whether it the interviewees saw it as the right direction for Company X. For product C the answer as unanimous, backsourcing is considered the right direction for Company X. INT4 thought it was important for Company X to at least backsource some parts to be able to acquire knowledge about the domain and become more of a “real” firm. With real firm, INT4 means that instead of only developing products, they also produce and sell them to a greater extent. This would allow them to make revenue on more than just actual work hours. However, it needs to be mentioned that the backsourcing is not finite. Company X could in the future decide once they have learned the process of manufacturing and collected all the new intellectual properties to take the patents offshore and let another firm produce the products for company X instead for a lesser cost. This is a choice that company X has to make in the future. INT2 also mentioned that their ability to negotiate in the future is affected. “We will be able to negotiate in detail about price and other things because of our knowledge when it comes to production”.

Regarding product A, INT1 response was that it was not a clear-cut decision to backsource but he believed that company X would benefit the most out of it if they are able to scale the production. A downside is that the production technology is complex and takes time to learn which means company X cannot produce product A for an extensive period. “If we are able to reach a certain scale, we want to produce. Otherwise someone else will until it does. It all comes down to timing when an investment should be made”. Therefore, the backsourcing needs to happen at the right time.

The timing regarding whether backsourcing Product B is an important factor, INT3 replied that it’s not the right path to take in the beginning. He further states that Company X should focus at producing Product C, and for the future production engineer to focus on learning one product at a time. When the production of Product C is expanding and entering a mature stage, INT3 explains: “Then potentially looking at producing product B is a natural step”. Producing product B in-house is therefore based on the contingency of a successful production of Product C and if the timing is right. INT3 see product B as a natural complement to the production of product C, with the synergy effects from being able to coordinate the transportations and have high control over the production. Therefore, INT3 believes that in the future backsourcing the production of product B will be the right decision.

Seeing they are positive to backsource the production of product C and if successful they believe backsourcing product A & B will be the right direction. The experienced gained from the previous outsourcing decision, the reasons identified from backsourcing and how Company X perceive the decision will be used to to find the risks related to backsourcing.
4.2.4 Risk related to backsourcing intellectual capital

Overall the risks that are identified from our questions are that the outsourcers are aware of the intellectual capital being shared. They feel secured for the different products due to the patents in place. INT2 acknowledge that larger companies can break the patents if they want, since Company X does not have the resources needed to go up against them in trial. However, this is hypothetical and, they have only collaborations with firms that are not substantially larger than Company X. Regarding the intellectual capital that is shared from product C, Company X believes them to have the advantage. They are the only ones knowing the entire process of producing product C, limiting the risk of opportunistic behaviour. For product B this risk is greater, because not only do the producer know the entire production process, they also know who the customers are, the quantity ordered and the frequency of orders. Because of this, Company X need to establish their brand and the customer relations. When the patent expires and if the product is successful, competitors will copy it. INT4 pointed out that: “some suppliers do not have the knowledge needed about the market to penetrate it immediately which is an obstacle for them. But practically, they would be able to compete with us”

The next risk identified is regarding the uncertainty about being able to establish an effective production process. INT1 said that it will take time for company X to establish the production process since company X don’t have the know-how yet which the supplier for product A is hopefully about to share. The equipment will be similar to what the producer is currently using, however Company X don’t have the experience handling the tools. This risk also relates to product A & C, since they haven’t been produced before, the uncertainty regarding volume and technology is existent. Since product B is easy to produce, only the uncertainty for volume is visible. This is confirmed by INT4 “Quality is one. If we are able to produce to the right cost. Another risk is the location of the factory. We will also be responsible of the volumes being produced, making sure they are correct. Control over production will overall be a risk since it is something new, combined with deliveries”. INT2 also acknowledge this, but is more specific towards product C, “We will probably have higher costs initially since we lack experience on how to produce. Also, our equipment will not be of the same standard as the current suppliers. We are aware of this but think it is worth the risk”. A risk related to this is where to locate the production facility, which INT4 means can play a big role when it comes to costs and keeping the distribution costs down as they want to be as close to the customers as possible

Another potential risk concerns the reputation perceived from external parties when ending the partnership. As stated by INT1 “If company X is not cautious, other companies might not want to cooperate with us in the future which might hurt us in the long run”. Therefore, Company X have to be careful in how and when they chose to end the partnership. The size of Company X is also a variable for why they see this risk, by getting a bad reputation the future growth of Company X is at risk. INT2 response regarding whether maintaining good relations with the external parties, “Yes, it is. Especially with our supplier for product C”. This is something all interviewees mentions, that the relations established are crucial and they must maintain the good relationship that has been built.

The investment necessary to perform the backsourcing of the production is a risk according to INT4 “There is also a big investment which always means a big risk.”. There is also the financial risk related to the production not running optimal in the beginning. INT3 also mentions the financial risk with backsourcing, bringing back production is expensive. If the decision later turns out to be wrong, it will revolve in a sunk cost for company X. This is a risk Company X are aware of. However, they acknowledge that this risk needs to be taken to achieve the new direction of the firm to be a producing firm rather than a consulting firm. This risk is
also mentioned by INT2 that the short-term risks that company X currently sees as a threat is the costs that will arise when changing from outsourcing towards backsourcing.

The risk with reintegrating the intellectual capital to Company X is something they need to consider. For product C, they actively taken the strategy to first outsource the production, so that the vendor can develop the production process to then bring it back. INT4 mention that “In the early stages we outsource the production, while we later on take it back”. This is further explained by INT1 “I believe in letting others do it first, then we can learn from them and eventually bring the production back under our own ownership”. It is important to mention that the vendor establishing this production process is operating in another market. This strategy involves trusting the vendor to be able to establish the production process and then formalize it in a manner easily understood by Company X.

Furthermore, INT2 says that when it comes to the long-term risks, the biggest ones that we see right now are if the production cost of creating product C (and also A) is too high or if no new IP will be found. He further adds that “Whatever the turnout, we will have learned a lot when it comes to the production process which is a great plus. The risk is however small that we won’t get anything out of it”. This risk we believe can be linked to sunk cost as also is a risk mentioned in the big investment risk.

4.2.5 Preventing measures

When the risk was identified we continued the interviews asking how they work to prevent these from happening. For us to answer our second research question these questions was crucial for the continuation of our thesis. The structure of this section will be the same as the section for the identified risk, the reason is to make the connection between the chapters easier to understand.

The first risk refers to the outsourced partners knowing some parts of Company X intellectual capital. INT4 is well aware of the importance of having a strategy for protecting their intellectual capital. They have established a patent strategy on how to act in every stage of the patent, to ensure collective thinking on what they can and what they should do. Company X is making a deliberate choice of taking a patent on their product and doing it as quick as possible. This patent is then extended in some ways by adding new patents on top of the old one to make it more difficult to copy. This overall gives a stronger protection to the patent. INT4 further concludes that all ideas they want to market, they could “input internal resources on the idea, and then look out the day it's finished”. This approach is very expensive which is why Company X is dependent on testing the product with customers and producers before the product is finished. In those situations, they use non-disclosure agreements (NDA) and material transfer agreements (MTA). He also mentions that they are sometimes a bit too careful, because when the patent is approved they don’t need to use MTA. This is confirmed when INT1 mentioned that in collaboration with external parties, they always make sure to have NDA and MTA in place. Further, INT1 explains that there are two parts of the MTA, the first regulate the ownership of results, that if new innovations occur during the trial it belongs to company X. The second part is the limitation on what the customer is allowed to do in the trials. INT4 acknowledge that as a small player in the market, they want to talk about new innovations to external sources. However, this could be dangerous in the way that if a customer knows that they are releasing a new product in one year, they might say “We will wait until next year, and purchase the new product instead”. Company X are careful to only reveal what the other party
needs to know on how to perform whatever task they are doing, even when a MTA or NDA is in place. They are investing a considerable amount of resources to protect their intellectual capital. INT4 states that they are educating the workforce in protecting intellectual capital with workshops and in the introduction for new employees. They have a contact who have been active in patent matters her entire career, who helps them with workshops, education and with advice. As the company grows, INT4 acknowledges that they will have to formulate the guideline to be more standardized. INT3 mention the use of trade secrets as a way to protect know-how and tricks of the trade in the production process. This is something they want to use more if they backsource.

To be able to prevent the uncertainty with producing in-house, INT4 mention how they´ve done for product C. “In the early stages we outsource the production, while we later on take it back”. This strategy is a well-informed strategy amongst the project leaders. However, this strategy creates the risk with reintegrating the intellectual capital, it also reduces the risk for uncertainty. It is important that company X understands the market before fully committing since it might wary between different sectors which can lead to unexpected problems once production takes place. For product C, they are using a new partner whose goal is to find a new component to change from the producer of product A’s patented solution. INT1 states “To solve this, we might have to build up a security stock or secure production from the outsourcing party during the transition phase.”. INT3 means that they will need the manufacturer as an alternative source if needed, because they never know if an accident or other unpredictable events occurs. Meaning that maintaining the established relationship with the producers is important, as it can reduce the uncertainty elements.

Even though the reputational risk with backsourcing is of minor concern for Company X it needs to be considered. Company X values their external partners and will be careful in how the information about them potentially backsourcing that activity is shared. As INT2 states that the producers have assumed that Company X will produce on their own since in their mind it is the logical move based on the situation. A strategy to avoid situations where the other party feel misleads, they´ve partnered up with producers who operates in other markets. “They understand that this market is not for them which is why they are willing to release this production technology in exchange for something else.”. INT3 states that if the cancellation is done in a reasonable time giving the manufacturer time to fill the gap in their production it shouldn´t be a problem.

The big investment needed to backsource have been thoroughly studied by Company X. INT2 explains that to prevent this risk they will start with establishing a pilot factory, in which they will be able to test and manage production in a small scale. If the demand increases they will be able to add more lines to ensure that they have needed capacity. Company X will share the facility with another actor. Furthermore, they will rent the facility instead of owning it. INT3 believes the financial risk will be reduced considering the equipment needed to produce Product C can easily be sold without any substantial loss. When these variables are considered, the sunk cost if they fail will be decreased. As Company X believes backsourcing to be the right path, this is a risk necessary to take.

To be able to reintegrate the intellectual capital, INT4 also talks about bringing in experts to consult regarding what is most optimal to do for the products. It is important to have experience with multiple methods of production. As they grow, they will need to hire people with skills that's not within the company, for example a person to run the pilot production facility. It would be optimal if the person was independent from any vendors or suppliers as well. A middle-man
is needed in order to identify what's best for Company X. Because the biggest challenge for Company X is the transition from developing products to start producing and selling, reintegrating the intellectual capital is important to succeed.

4.3 The observations - summary and result

Since the day it got settled that we were to write our thesis on commission for company X, we have been sitting at their office at least a couple of days a week, writing our thesis. While we were there, we not only got to know the employees better but also see and overhear the daily discussions in their natural context leading to new and valuable insights. As mentioned earlier (chapter 3.6.1) the observations made have been divided into three parts; Before the interviews, during the interviews and after the interviews. These observations have provided additional information enabling us to formulate the interview guideline. They also provided us with a deeper insight enabling us to ask in-depth questions.

4.3.1 Before the interviews

As we began the project at company X, the discussion circulated around whether product B should remain outsourced or they should produce it in-house. The potential risks with the different options and how to handle know-how were also examined. One day at one of the coffee breaks we joined the team of company X having a discussion regarding their respective products. We explained the subject of our thesis and what we hoped to achieve. They explained the products they were in charge of and shared specific details about product A & C. As we realized that the producer was not the same as for product B, we wanted to know more. As they stated that they were in the same decision as for product B, and that product C had the most potential to be backsourced, we decided to add product A & C in the case. By adding additional products, we believed to gain more valuable knowledge regarding the risks related to backsourcing intellectual capital. From the observations, we expanded the case.

During one of the days, we were allowed to come with the employees to the test facility they had where they tested and experimented with their products. This time they were testing product B to verify that it worked. So, they took us to the facility and showed us how the product worked, the difference between their product and competitor’s product and details regarding it. This observation provided a lot of information for us, mainly the comparison between competitor’s product and their product, how the facility is secured from the outside view and the complexity of the different products.

At multiple occasions, we overheard spontaneous discussions where company X employees discussed various matters regarding their different products. During the weeks we sat there, we got to see how different projects evolved and changed with time which many of we were able to observe and discuss on site with them when they occurred. Through the observation the positive supportive relationship amongst them was revealed. The hierarchy was non-existing, all encouraged each other to share their different views and ideas. This is something we have noticed throughout the entire time we spent at Company X.


4.3.2 During the interviews

The interviews were conducted the 2 last weeks of march, after the first interview was done we obtained more knowledge referring to our research questions. This enabled us to discuss and ask more direct towards those.

Because backsourcing is dependent on the activity first being outsourced, the origin for the outsourcing decision came to mind. From our interviews, we got the information about the reasons they outsourced, however we learned from a coffee break that the former CEO had a different exit strategy for Company X. His goal with the company was to develop intellectual properties for selling purposes and therefore outsource it to be able to show what potential products it could bring. The direction of Company X was therefore different than what it is now.

We got to be part of a major step for Company X, the first produced product C. This was celebrated with cake and applause. This observation highlighted the starting point for having an actual working product C. This increased our understanding about the product and made it easier to see the complexity of producing product C. It also gave us an idea about the current volumes necessary.

Later we were observing a conversation between the project leader for product B and another person at the company in the project leader's office. He explained how the production was managed by the producer for the product. As we listened and got more involved into the production process regarding product B, we learned that the supplier which company X was using, had shown some issues in handling the production. He said that the producer/supplier had delayed the production for a batch of product B which needed to be ready in a few weeks time. This was a big problem since it could lead to customers not receiving their products in time. Based on this observation it seemed as they were not pleased with the relation towards the producer. Later, we learned that the project leader had travelled down immediately to the producer’s facility to sort this issue out. The week after we spoke to him and learned that the issues had been solved and no harm was done to their relation.

4.3.3 After the interviews

After the interviews was done the transcribing started and dividing the different interviews into main themes. By this time, we limited the visits to the company as we had gather the necessary data and were processing it.

This observation that was made during this time from a casual talk after interview 2 was finished. The CEO and INT2 were heading to an international supplier to negotiate the price and volume of one of the raw material used. This confirmed our findings regarding their strive for reaching a lower price of the finished products. Also, that they are doing basically everything regardless of their position.

One morning as we entered the office we met the entire Company X as they were on their way to look at a potential production facility. This did not only confirm that they are serious about backsourcing, but also that everyone is involved. We later found that they decided to rent this
space, which enables them to prevent the risk if the backsourcing proves for to be the wrong direction. Furthermore, the location chosen will be close to their customer which was identified as a one of the reasons for backsourcing the production. This also shows that this is happening now and we got to be in the middle of the action.
5. Analysis

In this chapter, the primary data will be analysed. We will keep the same structure as in the empirical findings and the theoretical framework. This will provide the readers with a structure which is easy to follow, concerning our thought and interpretations. First, the origin for the risks of backsourcing will be analysed to successively be followed by the themes leading to our research questions.

By continuing the thematic approach established by Braun & Clarke (2006), phase 6 is where the final analysis is given. As our theme is represented as the arrows in the theoretical framework, these will be analysed. The themes are knowledge-intensive firm, view on outsourcing, reasons for backsourcing, risks related to backsourcing intellectual capital and preventing measures. The first three themes will provide key insights to the research questions, while the fourth theme will analyse the risks and lastly the fifth theme analyse preventing measures.

5.1 Knowledge-intensive firm

To answer our research questions, the origins for backsourcing must be analysed. From our theoretical framework, it is concluded that it starts from the knowledge-intensive firm. In Company X the source for creating competitive advantage is derived from their intellectual capital, which is the distinctive feature of knowledge-intensive firms (Swart & Kinnie, 2003, p. 60). Company X is well-aware of their core competencies being research & development, but as identified they prove to be dynamic. Meaning that the core competencies can change. Knowledge-intensive firm is characterised by the majority of the workforce is well-educated and highly qualified for the task (Wang & Quinn, 2005, p. 476). In Company X everyone is well-educated and have worked in the industry before, adding to the intellectual capital of Company X. Since knowledge leakage is a becoming a key concern for organizations (Ahmad et al., 2014, p. 27), Company X have to be cautious about sharing their knowledge. However, Kale et al. (2000, p. 217) mentions that for firms to learn know-how and capabilities of other companies, they also need to share knowledge. This is a balance which knowledge-intensive firms should acknowledge, which is identified both from the case and the literature. Depending on the degree of shared knowledge will determine the risk for unwanted knowledge leakage (Ritala et al., 2015, p. 22), and to progress, firms need to share knowledge. As confirmed by our findings, Company X only share what the external party needs to know. This is also the case for their customers, as they are careful not to disclose information about new products, since the customer then might wait until that products reach the market. Therefore, we conclude that the knowledge leakage risk also derives from the customers and not only from the producers and suppliers.

Because all their products except product C now is on the market, they are taking a new direction towards increasing their production capacity. This will need further enhancement of their intellectual capital, which we've identified. The dimensions of intellectual capital are human, structural and relational capital (Yitman, 2011, p. 5; Edvinsson & Stenfelt, 1999, p. 22), these dimensions will change depending on the decision on how to produce. Considering human capital as the sum of the employees knowledge (Wang et al., 2014, p. 234), they either have to learn the required knowledge or recruit a new member who possess it. For the human capital to be interpreted and stored, the structural capital needs to be in place (Stewart, 1997, p. 76-77). Company X have a supportive and encouraging work environment, Cabrera & Cabrera
(2002, p. 704) believes it to be necessary for a rich knowledge sharing. We find the work environment to be very important for how the risk is perceived, especially through the relations established. The relational capital therefore enhances the individual knowledge through network knowledge (2011, p. 6).

To implement backsourcing, an outsourcing must have been made in the first place. Company X have outsourced for various reasons which will be analysed in order to see the potential risks and preventing measures. As mentioned, the source for competitive advantage is their research which derives from the intellectual capital. Therefore, parts of the intellectual capital are outsourced. According to the resource based view (Barney, 1991) resources and capabilities need to be valuable, rare, perfectly imitable and have non-substitutability. When the resources are outsourced, the vendor is in possession of Company X intellectual capital which could affect these attributes. When more actors possess the resource, the rarity disappears causing the sustain competitive advantage to fade (Barney, 1991). Therefore, it is crucial for Company X to consider how knowledge sharing can affect their resources and how to protect them. Because they had another exit strategy earlier, it has resolved in the production of product A & B being outsourced. The outsourcing of product C was made by the new CEO, and for different reasons than product A & B. Concluding that firms should consider every aspect before outsourcing, accounting to the bounded rationality is difficult. Bounded rationality considers to what extent the decision is based on every aspect, and conclude that no decision maker have all the facts (Williamson, 1989). We agree that no one can have all the facts, however the possibility of a new direction for Company X should be considered.

5.2 View on Outsourcing

Starting of with the products that Company X are currently having, Product A and C have their producer outside the Swedish border. Product B is currently being produced and distributed by its producer inside Sweden. Manning et al. (2008, p. p39) speaks about his definition of outsourcing when it is done in another country; “Offshoring refers to the process of sourcing and coordinating tasks and business functions across national borders”. This certainly applies on Company X seeing as they are outsourcing Product A & C to another European country. We use Varadarajan’s (2009, p. 1166) framework where he mentions five different forms of outsourcing which we have stated in chapter 2.2.2. Product B falls under the category of outsourcing to competitors since the producers of Product B also sells similar products onto the same market. Product A & C can be put under the category of outsourcing to strategic alliance partners. Company X and the producer for Product A & C are cooperating to some extent. We argue that they have a form of strategic alliance with them due their collaboration when it comes to developing the production technology for product C but on a short term since they are ending their cooperation once the technology is finished.

Outsourcing is a necessary step that must be done before backsourcing takes place, which makes it important to investigate the outsourcing strategy that the company has in order to understand the full picture of the thinking processes of the company. As we investigated the outsourcing strategy that Company X were using we learned from the observations that the company had a different CEO whose strategy was to focus on creating intellectual property of high value, outsource the production for all the products and eventually get a bigger company to buy the company shares. As we observed, the earlier management strategy meant that the company's focus lied on its core activity, which was its intellectual properties. No resources were given to try make the products themselves. Because of the initial strategy, the company
never had the intentions to produce themselves. Freytag et al. (2012) speaks of three different views on outsourcing, the cost-based view, the competence-based view and the relational-based view which are based upon the research of Williamson’s (1989) transaction cost theory, Barney’s (1991) resource-based view and Dyer & Singh’s (1998) relationship-based view. The cost-based view emphasizes the fact that a company has to choose between markets or hierarchies. Basically, the goal for the firm is to minimise costs and transaction costs to gain competitiveness in the market. This combined with the competence-based view which focuses on keeping the core competences within the firm and letting other firms do the non-core activities. During this period, we identified that the two views matched Company X since they prioritised to develop their IC and let other firms do the non-core activities such as production and distribution which explained their decision to outsource. Further on, it became clear that trust is an important factor for Company X in their decision to outsource an activity, as they sought get Product C to the market as quick as possible.

As we interviewed the different project leaders at Company X, they spoke of several important aspects of the outsourcing decision that they’ve thought about.

**Strategy:** According to Fan (2000) the principles regarding outsourcing varies a lot and companies does it for various reasons. A common one which Fan (2000, p. 213) mentions is costs where companies tends to cease with their own operations and hire others who are specialists and does it for a lower price. In Company X case, this is partially true. Initially they did not have the resources to own the production themselves. They did not consider it a core competence at the time nor did they have the knowledge which led to the decision to make other firms produce for them. Fan (2000, p. 213) also states delivery and service as an important reason for outsourcing. Besides production, Company X are now letting the producer for product B handle the distribution as well. Since Company X are currently in a growth stage, they could not spare the necessary resources towards production. One reason why they decided to outsource to the firm handling product A and C was due to their markets not being shared. This meant they did not have to worry as much when it came to sharing their knowledge and know-how with the outsourced firm. Norman (2001, p. 51) speaks about sharing knowledge and its potential to make companies reach new levels, but which opens for risks in exposing your critical knowledge. This is not a big concern for Company X since they are not sharing the market with the outsourced partner which means that they are not vulnerable to the same degree as they might have been if they did share markets.

**Contract:** INT2 who is responsible for Product C stated during his interview that they currently have a proper contract in place between them and the vendor. According to INT2 the contract clearly states who is responsible for what in different scenarios to ensure Company X safety against negative outcomes such as knowledge leakage. He also stated that they have a department in place which handled these matters, for example hiring lawyers for making templates. This is in line with what Berthelemy (2003) writes in her research about the importance of having a good contract in place to make sure that there is a balance of power between the contractor and the vendor. Berthelemy (2003, p. 90) gives several important factors that a contract should consist of, such as being precise and being complete. These are factors that according to INT4, Company X are fulfilling at the moment. Comparing Berthelemy’s theory to the case, we see similarities. We find that they are aware of their strengths and weaknesses in their contract writing since they are trying to deal with companies of similar sizes. This is overall a good quality for Company X which shows that through earlier contracts have built sufficient knowledge to ensure well-written contracts. For the future success of
 Company X this could be of great benefits, to be able to avoid costly mistakes derived from poorly written contracts.

**Relationships:** The project leaders talk about the importance of having good relationships with the outsourced partners. Company X emphasized the importance to maintain a good relationship with the producers of Product A. They are a small company and sometimes needs to cooperate with other actors in different scenarios to enhance development for things such as production technologies which is the case for product A and C. It is important for Company X to reach the market at a quick paste which these good relationships can offer. As described in the literature by Fill & Vesser (2004, p. 45), one success factor for outsourcing is to establish cooperation with the outsourced actor to reach new heights in terms of technology. Further on, Clarke et al. (2012, p. 102) points out the advantages that can be granted from the relationship-view. Dyer & Sing (1998, p. 661) explains how it allows the firm to be part of a bigger network where knowledge is shared and makes relational rents that can be seen as a relational advantage. These are in turn generated by collaborating firms with relation specific assets, knowledge sharing routines, effective governance structure (Dyer & Sing, 1998, p. 667). To some degree, the relationship based view can be applied to Company X. At the moment, they share ownership with another actor for the pilot factory in order to lower the risks and costs for it. They are also sharing knowledge with the producer of product A, B and C to a large extent. Since the producer for product B is a competitor due to their similar products, no more than what is needed for creating the product is shared. For product A and C, it is more of a cooperation where they are sharing ideas on how to optimize the production technology. This is in line with the stated theory which allowed them to gain advantages which otherwise would not be available to them. However, they are seeing the producing company as a short-term partner and do not seek to partner up with them for future projects, which opposes the relationship-based view.

**Control:** In the interviews, all of the respondents including the CEO stated that the activities they had chosen to outsource was still very important for the company since they, using the CEO words “...are essential for our business since they are linked to our competence and development process”. INT1 stated in his interview as well that it is extremely important since they wanted to maintain their relationship with them while also keeping their reputation healthy towards other actors. This is not exactly in line with what Fill & Vesser (2000) writes in their theory about outsourcing. Fill & Vesser (2000, p. 45) writes that the activities a company should outsource are the ones not considered being core activities for the firm. In Company X case they saw their outsourced activities as core ones as well. The problem was that the resources were so scarce they simply could not do it themselves straight away. In this moment, Company X are better equipped to deal with backsourcing than they were when they initially outsourced Product, A, B, C
5.3 Reasons for backsourcing

When asked about why Company X wanted to backsource the production for their products, the responses were different to some extent depending on which product we asked about. In figure 3., we have summarized the empirical findings regarding reasons for backsourcing, and analysed them against the reasons the literature suggests. Because the reasons for backsourcing will identify the important factors for Company X, risks can be based on those.

<table>
<thead>
<tr>
<th>Product</th>
<th>Empirical finding</th>
<th>Veltri et al</th>
<th>Wong et al</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product A</td>
<td>Closeness to customer</td>
<td>Poor service quality</td>
<td>Strategic directions</td>
</tr>
<tr>
<td></td>
<td>Higher control</td>
<td>Loss of control over outsourced service</td>
<td>Power &amp; politics</td>
</tr>
<tr>
<td></td>
<td>Cost reduction</td>
<td>Know-how mismatch</td>
<td>Outsourcing</td>
</tr>
<tr>
<td></td>
<td>Synergy</td>
<td>Changes in executive management</td>
<td>expectation gaps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recognition of a new role for IS</td>
<td></td>
</tr>
<tr>
<td>Product B</td>
<td>Gain control</td>
<td>Loss of control over outsourced services</td>
<td>Strategic directions</td>
</tr>
<tr>
<td></td>
<td>Increased flexibility</td>
<td>Changes in executive management</td>
<td>Power &amp; politics</td>
</tr>
<tr>
<td></td>
<td>Synergy</td>
<td>Recognition of a new role for IS</td>
<td>Outsourcing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>expectation gaps</td>
</tr>
<tr>
<td>Product C</td>
<td>Finding new IP</td>
<td>Recognition of a new role for IS</td>
<td>Strategic directions</td>
</tr>
<tr>
<td></td>
<td>Closeness to customer</td>
<td>Changes in executive management</td>
<td>Power &amp; politics</td>
</tr>
<tr>
<td></td>
<td>Flexibility</td>
<td>Loss of control over outsourced services</td>
<td>Outsourcing</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td></td>
<td>expectation gaps</td>
</tr>
<tr>
<td></td>
<td>Synergy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Reasons for backsourcing

Of the three reasons for backsourcing established by Veltri et al (2008), two could be identified in the different products for Company X. Wong et al. (2008) divides the reasons to backsource into four main factors. In our case we have identified three of them to be relevant when it comes to Company X reasons to backsource. Both Veltri et al. (2008) and Wong et al. (2008) have similar views on the reasons for backsourcing. We will therefore combine their research when analysing the identified reasons for Company X.

The synergy effect in the production of the products is the main reason why Company X considers to backsource product A & B. This reason is not mentioned in the literature, which makes us consider it as potentially a new finding. This reason could be of great value for companies to consider. Because backsourcing is connected to high investments, the synergy effect could be a reason for firm to consider backsourcing. Due to the possibility to co-produce different products, this could make the backsourcing plan a reality by reducing the high barriers related to backsourcing. However, one could argue for it being a change in the strategic direction of the firm. Strategic direction refers to a new view on an activity, changing from
commodity to a strategic resource (Wong et al., 2008, p. 104). This happened for Company X, due to the development of product C they noticed an opportunity in which they could combine production benefits. The start for considering backsourcing product A & B was on a contingency that they would backsource the production of product C. In alignment with the competence-view (Freytag et al., 2012, p. 101), the firm should maintain their core competencies within the firm. To some extent we agree with Freytag (2012), however it might not be realistic for all companies. As the case revealed, sometimes firms have already outsourced an activity before recognizing its importance. Arguably, the reason is due to the pressure of reaching the market quickly. However, when evaluating our empirical findings, we identified that there were more reasons for backsourcing than the synergy effect.

Veltri et al. (2008) reason Contractual problems or as defined by Wong et al. (2008) outsourcing expectation gap, is identified as a reason for Company X to backsource. This reason occurs when the expected outcomes is not the same as the real outcome in a partnership (Wong et al, 2008, p. 106; Veltri et al., 2008, p. 58). Poor service quality occurs when the service is by a lower standard than what is stated before (Veltri et al., 2008, p. 58; Wong et al., 2008, p. 104). This sub-reason was only relevant for Product A during the first couple of weeks. Otherwise Company X was satisfied with the other producers. This was surprising considering Whitten & Leidner (2006, p. 614) states that firms who experience low product quality are more likely to backsource compared to relational and switch cost aspects. Loss of control is as stated when the focal firm lose control over core competencies to the outsourced firm (Veltri et al., 2008, p. 59; Wong et al., 2008, p. 106). This is identified to be of significant importance for Company X and by backsourcing they believe to achieve the highest control compared to other options. Berthelemy (2003, p. 92) argues that it is easier to control an outsourced activity compared to an in-house activity. We believe that the reason Berthelemy states above mismatch our empirical findings due to the complexity of what is outsourced which in this case is the intellectual capital. Currently the producer of product A is in possession of the production technology for product C and are currently not sharing it with Company X, putting them in a situation where the producer knows “more” than Company X about how to produce. Veltri et al. (2008, p. 60) named this type of situation to Know-how mismatch, which could lead to a power situation where one part is dependent on the other part. This proves to be the case in Company X. However, the strategy of Company X is to let the producer of product A develop an effective production process for product C. When the process is developed, the knowledge will be reintegrated to Company X. Because the producer firstly wants to find applications in their market with this production process, they have not shared the knowledge yet. Even though Company X chose this situation, the producer will still have more bargaining power towards Company X. This proves the know-how mismatch, and that Company X is dependent on the knowledge of their producer.

The next reason identified for backsourcing is power & politics defined by Wong et al. (2008) or internal organizational change defined by Veltri et al. (2008). These reasons refer to the influence top management have, and how an organization can change depending on changes in management (Wong et al., 2008; Veltri et al., 2008). As Company X changed their management, new ideas and experiences Company X changed their management two and a half years ago, bringing in new ideas and experiences. After that they started evaluating earlier decisions to ensure that they are in line with the new direction for Company X. The CEO mention that they want to be seen as a complete firm rather than a R&D firm, and to accomplish that he believes they need to conduct some kind of production. By backsourcing the production Company X can spread their overhead expenses, reducing the cost per product. According to Veltri et al. (2008, p. 61) changes in executive management can be a reason for backsourcing,
because the new management is influenced by past experiences which is shown in new ideas and directions. Through this management change, new opportunities have been identified for Company X. Recognition of a new role for external competencies occurs when an outsourced activity is seen from a new perspective, revealing competencies more suited for internal positioning resulting in a reason to backsource (Veltri et al., 2008, p. 61). This is confirmed by the CEO who states that they want to transition from a R&D company to also incorporate production. This is a result from wanting to change the perception of Company X from a R&D firm to a complete firm.

Wong et al. (2008) and Veltri et al. (2008) acknowledge that the reason for backsourcing rarely is just because of one reason. For Company X this is true and all of the interviewees mentions more than one reason for backsourcing. We agree that before backsourcing, the decision must be well-examined before implementing it. Which is something another firm must consider, to not rush into backsourcing.

5.4 Risks related to backsourcing intellectual capital

The empirical findings related to the risks with backsourcing intellectual capital will be interpreted with our theoretical framework to answer our research questions. As we noticed that the risks are similar for each product, we chose to examine the risks as an entity with some exception. Furthermore, the risks identified is derived either from ex ante backsourcing or during the backsourcing. After each risk, the possible preventing measures related to that risk will be analysed.

5.4.1 Risk 1
The first risk recognized for Company X is that the outsourcing partners are aware of some part of their intellectual capital. This could be problematic for the focal firm, considering the intellectual capital will remain within the vendor. Because backsourcing ends a partnership, this could give incentives for the vendor to act opportunistic. Opportunistic activities refer to when one party acts in a way only beneficial for him, and does so in a deceitful manner (Norman, 2004, p. 611). In other word, the vendor uses the intellectual capital for their own purposes which could damage the focal firm. They could use ideas and know-how deriving from the human capital of the firm. Furthermore, if the vendor possesses the relational capital of the focal firm, they could interact and access their customers. This is something Kale et al. (2000, p. 217) acknowledge, that if the vendor acquires the intellectual capital of the focal firm knowledge leakage is an outcome of opportunistic behaviour. We agree with this statement, furthermore it confirms the risk identified. According to the cost-based view, the goal is to minimize the transaction cost (Freytag et al., 2012, p. 101). Considering the potential increasing transaction cost if the vendor acts opportunistic, this risk is crucial to consider when deciding to backsource.

To prevent this risk, Company X have for product C divided the production process to first assemble the components in-house while the vendor adds one component and develop the production process. Ensuring they are not aware of the entire production process, but merely the final assembly. They also operate in another market than Company X, further ensuring protected intellectual capital. This makes it more difficult for opportunistic behaviour from the external partners. This is in line with Kim et al. (2015, p. 622) that states that sharing more knowledge than what is needed can lead to unintentional knowledge leakage. However, since the knowledge already has been shared, Company X needs to consider this before sharing the
knowledge. According to Norman (2001, p. 52) two core legal mechanism are used to protect the firm from knowledge leakage, patents and contractual mechanism. Patents is frequently used by Company X, patents are used to secure inventions and processes from being copied (Norman, 2001, p. 52). The impression we got from Company X is that they felt secure if patents are involved. However, Norman (2001, p. 52) further argue that the patents could be the reason for disclosure of critical knowledge. When a patent is published it's accessible for the public. From our empirical findings, we saw that they add patents around the original patent to ensure protection. Another interesting addition was to add incentives for the producer in the contract, Berthelemy (2003, p. 90) mentions this as a way of encouraging the vendor to perform. In Company X licensing the sales was a possibility. We agree this to be an effective way to ensure that the intellectual capital of the firm is protected from opportunistic behaviour. To summarize these preventing measures for the opportunistic behaviour is ex-ante backsourcing to limit the knowledge shared to the vendor, by either performing some of the production in-house or to divide the knowledge into more vendors and by that limiting the shared knowledge to each vendor. During the backsourcing process, adding patents on the original patent and by providing incentives to the vendor potential preventing measures.

5.4.2 Risk 2
The second risk recognized is how Company X will be perceived when backsourcing e.g. reputational risk. INT1 acknowledge that it is important for Company X to care for their relations with the outsourced actors since they need a solid reputation for their future partnerships. INT4 has similar arguments as well. Company X is still a small company which means they need to be careful with their actions to not harm their reputation. The theory about knowledge leakage stated by Ahmad et al., (2014, p. 27) where he writes that knowledge leakage could impact a company in different ways such as reputational damage can be connected to the case of Company X. They are in a situation where their reputation matters a lot and has significant value for them in terms of future deals. If the backsourcing is performed in a manner where the vendor is mistreated, the relationship is damaged which can cause ripple-effects to other external parties. Which could lead to a bad reputation for Company X. Therefore, Company X values their relationships with the outsourced actors so highly. Future deals similar to the one they have struck with the producer of product A might not be possible if their reputation gets damaged which can hinder their progression for reaching out to new markets. Further on, the relationship-based view that Dyer & Singh (1998) writes about can also be connected to this risk. Since the relations are important in order to cooperate with others to gain more value, it might be difficult to create these relations once a company's reputation is damaged. Even if Company X is not seeing their collaboration with the producer of Product A and C as a long-term partnership, they still need it. In the future, more of these types of partnership might occur if new revolutionary products are developed. This makes the reputational risk important to consider for Company X.

The preventing measures for the reputational risk is to nurture the relationship established with external firms. Company X is a firm that currently has outsourcing agreements with two other firms, one for product B and another for Product A & C. For Company X to maintain the relationship on a steady level once the backsourcing takes place, they need to be clear with the producers on their intentions before the process starts. This is something the focal firm can state before entering the relationship, but also during the partnership. Dyer & Singh (1998, p. 661) speaks of the relationship-based view as a way of combining companies resources to create relational rents which translates into relational advantages. If Company X intentions are clear, both parties will be able to gain more competitive advantages, which can be in the form of
production technologies. Company X had a good arrangement with the producer of product A & C due to Company X allowing them to use the production technology in other markets, giving them incentive to nurture the relation as well. Ritala et al. (2015, p. 29) also speaks of knowledge sharing having a positive effect on innovation performance but that it endangers the firm through potential knowledge leakage. This proves that Company X is doing the right thing by sharing their knowledge to grow their business. For the reputational risk the preventing measures are therefore to nurture the relationship, to provide incentives for the relationship to last, and by clearly stating the intentions with the partnership.

5-4.3 Risk 3
The third risk refers to reintegrating the intellectual capital. Company X have acknowledged that the previously seen non-core competence production process is to be considered as a core competence. Therefore, they want to backsource this activity, which will create the risk of not having all the elements in place to fully exploit the opportunity. This is in line with the competence view (Freytag et al, 2012, p. 101), who states that core competencies should stay within the firm. Considering they have not done this before, backourcing brings the technology and volume uncertainty (Falaleeva, 2003, p. 3299-3300. By reintegrating the intellectual capital, the intellectual capital of the firm will change. As identified from Company X, they will hire new personnel which will increase the human capital. The structural capital will therefore change, to be able to support the new core competencies. Who will establish the new production facility also refers to this risk as well. Company X acknowledge that if the outsourced producer helps them, they might be biased and perform for their own benefits. However, a reason for unintentional knowledge leakage can come from temporary and contract workers (Kim et al., 2015, p. 622; Jiange et al., 2013, p. 984). This is something focal firms needs to consider when integrating intellectual capital. Further on, the relational capital will also increase considering the new personnel will add their contacts. For Company X it has been a know-how mismatch, where the producer knows more about the production process than the focal firm (Veltri et al., 2008, p. 60). This also refers to this risk, seeing they will have to learn the know-how established. To be able to reintegrate the know-how it needs to be interpreted and then shared to the focal firm. Revealing the complexity with this risk. Seeing both the literature (Veltri et al, 2008, p.60) and the case mentioning this issue, we believe it to confirm the importance of considering this risk.

In terms of preventing this risk, there are measures that can be taken. As the core competencies of Company X will enhance with this transition, the intellectual capital will change. This will lead to organizational change and reproducing the infrastructure to be able to support the function in-house (Tadelis, 2007, p. 265). From our case, we identify that this will result in new recruitments and learning the workforce about the new activity. INT4 mentions that they will use someone not affiliated with the vendor to prevent them from establishing the production facility in a way that makes company X dependent on them. If the vendor forms the production facility, Company X could be dependent on them if issues arises which is something they want to avoid. Bhagwatwar et al. (2011, p. 168) mentions that competent employees are either transferred from the vendor or new ones with the right experiences are hired. Company X will acquire the knowledge from hiring new personnel with experience from production. Norman (2001, p. 52) mentions the use of alliance information manager. A person in that role oversees monitoring, surveillance, compliance, and advising. We believe this to help Company X in a successful transaction, by assigning an employee to ensure a smooth reintegration. Combined with the use of non-disclosure agreements, the risk will be mitigated.
5.4.4 Risk 4
The fourth risk refers to potential losses during the backsourcing process. INT4 mentions that there is a risk that they might not be able to produce for the right price. Furthermore, they must ensure that the quality of the products is satisfying for the customers. Considering they are backsourcing an activity they’ve only done at a lab-scale, this will be challenging. To backsource the production requires a large investment, resulting in a greater risk. This identified risk is in line with Chapman & Andrade (1998, p. 56-57), who states that backsourcing requires a major investment and is often very time consuming. However, that is a risk that Company X needs to take to bring the company forward, otherwise progress will not be made at the necessary speed. This is something we found interesting, that they need to balance the risk with being fast versus slow. Both directions possess risks, but from Company X, they consider the risk of being slow larger than being fast. Company X does have investors backing them. What they need to provide is a bulletproof calculation that shows the pilot factory’s profitability. INT3 emphasis on the potential sunk cost which can come from the backsourcing, however he mentions that most of the investment is sellable later. Whitten et al., (2010, p. 168) consider sunk cost as an important factor to consider in backsourcing. We agree with the theory as to INT3, the potential losses which could occur when backsourcing is sufficient. However, there are preventive measures to consider which could reduce the impact of backsourcing.

To prevent this risk, Company X are carefully preparing by renting the facility where the pilot factory will be located. The equipment needed also has multiple areas it can be used for, making it easy to sell if necessary. This is due to standardized equipment, which is useable in more industries than their resulting in more potential customers. Instead of buying the facility they will rent it, and share it with another actor. Instead of establishing a full-capacity production facility, they will start by building a pilot factory which can be scaled up if necessary. These choices are a prevention to the major investment risk other firms should consider. Company X also have the necessary funds to be able to achieve this with investors backing them up. As Chapman & Andrede (1998, p. 57) mean that backsourcing is a major investment requiring a lot of capital, our findings suggest a potential solution. As explained from Company X, a pilot plant reduces the capital risk associated with starting production. Our finding suggests that the barrier to backsource the production can be overcome by starting with a scalable pilot factory, and if sales grow the factory can scale with it. The choice of renting the space and having standardize equipment are aspects that needs to be considered for other knowledge-intensive firms as well, as it could reduce the barrier to produce in-house. The final preventing measure for this risk is to carefully plan for the implementation.

5.4.5 Risk 5
The fifth and last risk refers to the contractual arrangements. Depending on how the exit strategy is negotiated in the contracts will affect how the focal firm can leave the partnership. Therefore, the risk derives from the contracts written when entering an outsourcing agreement. As mentioned by Berthelemy (2003, p. 94) when not considering the end of an outsourcing relationship, there are tendencies to not include clauses about material and human reversibility. If not in place, the bargaining power of the focal firm is low and the option to backsource will be more difficult. This situation has occurred for Company X, and since the previous CEO wanted to sell intellectual properties these were not in place. However, from this they have learned the importance of a well written contract. This is confirmed through their contract with the producer of product A & C. Barthelemy (2003, p. 90) mention that in general good contracts are precise, complete, incentive based, balanced and flexible. As the vendor will be able to use the production process for other market, the contract is incentive based. This part we think is
the most important aspect of the contract, because if both parts are satisfied issues will not arise. Company X mentioned that they rarely check the contract because without issues, there is no need. This risk can be related to the cost-based view (Freytag et al. 2012, p. 101), as the transaction cost will be greater if the contract is not well written which can harm them in the future.

Furthermore, the contractual arrangement risk is identified to be very difficult to prevent when the backsourcing decision is taken. If the contract is written poorly, the ending of the contract could be costly. Therefore, to prevent the risk, firms should conduct a solid contract with a clear exit clause before outsourcing. We find it most important that the contract to be complete, as Berthelemy (2003, p. 90) states if complete the risk for costly renegotiations are prevented. Also, the contract should be balanced, as it preserves good relationships. Company X mention that it is easy to sign exclusivity deals, and it is something they are avoiding. This is something we believe other knowledge-intensive firms should consider, as they otherwise will have a harder time to backsource as exclusivity deals will cause the firm to be locked-in with the vendor for the contracted period. However, there is one option identified to prevent this after the outsourcing is implemented, which is renegotiation of the contract. This also refers to the relationship established with the vendor. If the relationship is good, the renegotiation should be easier to achieve. Otherwise it could be both costly and time consuming.
6. Discussion & conclusion

This chapter aims to discuss the risk identified and how these possible can be prevented. To help the readers the structure will be to discuss one risk and how to prevent it. The conclusions will then be presented. Furthermore, the theoretical, practical and societal contribution from our thesis will be presented.

6.1 Discussion

As understood from the case with our theoretical framework when sharing knowledge, the risk with opportunistic behaviour must be considered when entering and leaving a partnership (see 5.4.1). Kale et al. (2000) mentions that opportunistic behaviour can be the reason for knowledge leakage. As the key resource for creating value for knowledge-intensive firm is knowledge (Swart & Kinnie, 2003, p. 61; Wang & Quinn, 2005, p. 476), opportunism is something that needs to be considered to prevent key resources from being possessed by competitors. This further relates to the resource-based view (Barney, 1991), who argues for that the resources who adds to the sustained competitive advantage should stay within the firm. Therefore, if this risk is managed, it could further add to the decision whether to backsource or not. To prevent this risk the use of patents and contracts have been identified. Since both patents and contracts are legal mechanisms to protect from knowledge leakage in a partnership (Norman, 2001), it can be a way for the firm to prevent opportunistic behaviour when backsourcing. We also examined whether just trusting the vendor is enough, however Berthelemy (2003, p. 90) mentions that trusting the vendor often leads to future trouble. From our findings, we disagree to some extent to the claim, because sometimes you need to take a leap of faith to progress. As the producer of product C have not yet shared the developed production process, Company X is certain it will be revealed. This comes from the notion that they are in different markets and the vendor wants to find use of their developed process before handing it away. So, in this scenario we think the risk for opportunism is so limited, trusting the vendor is appropriate.

This finding means that the relationship with the vendor is crucial, even after the partnership is ended (see 5.4.2). Because you never know when you might need a favour. Further you risk getting a damaged reputation if ended badly for when entering other partnership. This is something managers must be aware of, and due to the knowledge-intensive firm usually is small and resources, it is even more important for continuing the knowledge increase. Dyer & Singh (1998) relationship-view is a way for companies to use relationships as a tool to create additional value. For Company X to prevent this risk they must be clear about their intentions with the producers and about the terms they are having between them. If this is not done properly for future deals, difficulties might arise as the deals moves forwards which prevents the firms from creating relational rents, leading to neglected value generated for both sides. If Company X can negotiate terms in which both sides receive a clear reward from, like they did with the producer of product C & A who is allowed to use the production technology in their own market, in combination with a clear contract that states what both parties obligations and restriction are. A relationship can be built where the risks of knowledge leakage is low.

The third risk highlight the difficulties to reintegrate the knowledge shared to the focal firm (see 5.4.3). This is further argued by Bhagwatwar et al. (2011, p. 167), who means that due to explicit knowledge about the business domain and the implicit know-how the transfer incorporates it is difficult. Because the case will backsource an activity never performed, the reintegration will be a challenge. Considering that the transfer will affect every department of
the firm and everyone in those (Chapman & Andrade, 1998), this further argues for the risk identified. It is valuable for organisations to examine this risk as it will determine the success with the backsourcing. To prevent for this risk organisations, need to carefully plan for how to backsourse and how it will affect the organisation. To understand the activity is also important as it will provide insight on how to perform optimally. Bhagwatwar et al (2011, p. 168) the knowledge is linked to the ones performing the task, and that these should be transferred or hired experts from that field for a successful transfer. By using external help the transfer risk can be prevented, considering they have the experience necessary. This could be of great value for firms who want to backsourse, to ensure the right actions are taken from the start. As the backsourcing process is seen as time consuming (Bhagwatwar et al., 2011, p. 168), this factor could be reduced if both carefully planned and with help from external experts. Furthermore, Norman (2000) mention the use of an alliance information manager to ensure both parties receive the knowledge necessary in an alliance. We interpreted this to also be used in the reintegration of the knowledge, to monitor and ensure it to occur. We found it important for preventing the risk, that firms assign this position.

The fourth risk considers the huge investment backsourcing is perceived to be since it can lead to large capital losses if the backsourcing does not work out (see 5.4.4). This is valuable for the firm to consider when putting the necessary capabilities in place in-house, to have planned for the expenditures. Company X plans to build a pilot factory will give them the ability to produce Product C initially at a small scale which will also come with the option of adding on small extra features, giving the factory the potential to scale up the volumes if Company X predicts an increase in demand. As Chapman & Andrade (1998, p. 56-57) wrote, the costs of backsourcing can be very expensive and time-consuming activities. By backsourcing to a pilot factory, Company X will lower their investments needs and be in control of the production process which means taking part of efficiency as they eventually scale up the volumes. Whitten et al (2010, p. 168) discusses about the sunk cost as a hinder to backsourse. As it is a pilot factory, the potential loss will not be as large as if it was a full-scale factory. And since the equipment can easily be sold according the sunk costs will not be that large if the backsourcing turns out to be non-profitable.

As time to market was a key factor for Company X, the contractual arrangement made was identified as a risk (see 5.4.5). As detailed contract is essential for a successful outsourcing (Berthelemy, 2003, p. 90), this will ensure the means necessary for backsourcing. If the contract is not detailed the risk of not being able to leave the vendor when wanted and needed arises. Berthelemy (2003, p. 94) argues that many managers unwillingness to anticipate the end of an outsourcing contract results in the absence of an exit strategy. We argue this unwillingness creates this risk, and that managers must consider the end of the partnership. Otherwise it could have the consequence of not being able to capitalize on newly found opportunities. In Company X, the contract was written in a way which made it possible for the vendor to use the developed know-how in other markets than Company X. The contract was therefore incentive based, which Berthelemy (2003, p. 90) states as effective way to ensure superior performance from the vendor. As analysed, preventing this risk was found to be difficult. Because the contract is already in place when the decision to backsourse is taken, the only contractual changes are made through renegotiations. This further adds the realization that the vendor is in a good bargaining position, considering they are in possession of the means necessary for the focal firm to backsourse. Therefore, we highlight the importance for firms who are about to outsourse to conduct a detailed contract and to always discuss an exit strategy. The exit strategy should be included in the contract with clauses about material and human reversibility (Berthelemy,
2003, p. 94), combined this will ensure an easier transition if the firm wants to backsource in the future.

As we have found it difficult to see any preventing measures for the perceived risk, all of them is related to the contract one way or another, also that the firm should be cautious with what they share, the patents is a good way of preventing opportunistic behaviour and also the use of NDA. Another thing is the importance of trust and maintaining a good relationship even after the partnership is ended. Partly because you never know when you need the vendor again, and to ensure a good reputation from them when entering other collaborations. As knowledge, intensive firms are dependent of finding new knowledge, which can be found through relation clusters

6.2 Conclusion
Through our analysis and discussion, we have formulated five risk who relates to the first research question. These will be presented by a bulleted list as they have been explained in the previous sections. We've also given them numbers to make the connections to the preventing measures easier to follow. As the preventing measures identified can solve more than one of the risk, they will be presented separately.

Q1: What are the risks related to intellectual capital when backsourcing?

- Opportunistic behaviour with the shared intellectual capital (1). Thoroughly explained in 5.4.1 and discussed in 6.1
- Reputational risk (2). Thoroughly explained in 5.4.2 and discussed in 6.1
- The risk with reintegrating intellectual capital (3). Thoroughly explained in 5.4.3 and discussed in 6.1
- The investment risk (4). Thoroughly explained in 5.4.4 and discussed in 6.1
- The risk from earlier contractual arrangement (5). Thoroughly explained in 5.4.5 and discussed in 6.1

Q2: How can these risks be prevented?

Most of the risks can be prevented for Company X by having a well-written contract with the partners. If the contract is incentive based and includes an exit strategy they can backsource with limited risk for opportunism (1,2). As the contract will also ensure a good cancelation, the reputation of the focal firm will be secured (2). If the contract includes clauses for human and material reversibility, and the exit strategy is clear will reduce the risk of reintegrating the intellectual capital substantially (1,3).

Furthermore, patents are identified as a way of preventing the risks. Considering that if they are violated, the focal firm are entitled to take legal remedies towards the external party (1). This could also solve the risks arising from the earlier contract (5). By further adding patents on the original patent, the risk with inventing around the intellectual capital is reduced (1).

The use of external experts in the domain of the backsourced activity is an additional solution for knowledge-transfer, considering they have experience which the focal firm lacks (3). This should also reduce the time to finish the backsourcing process (3). Additionally, careful planning is important (3)
The focal firm can assign an employee to act as an alliance information manager, who’s responsible for ensuring that all the intellectual capital is transferred back when backsourcing (3). Establish a pilot factory instead of building a full-scale production facility (4). Renting space and using equipment transferable to other industries resulting in low sunk costs (4). If possible, outsource to vendors operating in other markets (5). By doing so the focal firm can prevent the creation of a competitor.

- Well-written contracts.
- Patents
- Hire experienced help
- Careful planning
- Alliance information manager
- Pilot plant
- Renting space & using transferable equipment
- Use partners from other industries

6.3 Theoretical, practical and social contributions
As mentioned in the research gap, a more in-depth understanding of the phenomena backsourcing is requested. As argued by scholar’s research regarding the risk with backsourcing production is identified as a potential contribution to the current research. Furthermore, by linking the concept intellectual capital adds to understanding how these two interacts. This thesis has explored the current researched risks for backsourcing IT and IS services and used them in backsourcing production, also acknowledging the intellectual capital that is shared. By examining the existing risk through our case study, we see tendencies that these risks also are applicable for backsourcing the production. By further adding the intellectual capital concept combined risk was found, which proves these concepts to be combined. Through this case study preventing measures for the risks are suggested and are believed to be a contribution to the backsourcing phenomena.

As for the practical contributions, we have come up with the risks that Company X faces regarding the risks of backsourcing their intellectual capital and tried to see how to they can prevent these risks. Although the company has a special context, we believe some of the contributions can be applied to other companies as well. The risks that we managed to identify had a lot to do with making sure that the relations between the company and the producers were nurtured and taken care of since Company X relies a lot on working with others, as with Product C to develop their inventions to reach the market. As seen in the literature, knowledge sharing is a way for firms to learn from each other. When they are sharing their intellectual capital with the other firms it comes at a risk of letting the producer know of the company's know-how. Further on we recommend the company to enhance their procedures regarding the contractual framework with things such as penalty fees or other types of compensation when things go wrong since the company can gain a lot of value in terms of time and risk reduction. As the company chooses to backsource a large investment will be required for the pilot plant and they will need to make sure that they have accounted for all factors such as human and structural capital which will be need once the plant is finished. Relational capital can easily be damaged if delays and quality issues occurs which the company should avoid at all cost.

The concept backsourcing basically means to end a collaboration and bring the activity back in-house. By backsourcing, the external party will lose a customer, which potentially could lead
to less work for them. Resulting in lay-off for the vendor but as the case company are buying small quantities, the probability for lay-offs to occur we believe as low. Because of this backourcing the production rather creates new job opportunities in the local area. Partly for setting up the production facility, and for running the production facility. Another effect which is beneficial for the society is services and other equipment related issues will probably be bought locally. Basically, because it seems highly unlikely that they will buy services elsewhere. This study has therefore some societal contributions as well.

6.4 Future research
There are several areas within our exploratory study that can be discussed for future research. In our case, the company had outsourced their production to companies which were small to medium in size. According to Company X, this factor played an important role in their choice of vendor. It would therefore be interesting to see how a company similar in size to Company X would handle their relation and contract agreements with a larger sized company. Could factors like opportunism still be important or are they neglected. Would a company be more intimidated to lock themselves in with them or would they embrace it.

Seeing we have done a single case study, a quantitative study of our research questions would be interesting for future research. To find other knowledge-intensive firms who want to or have backsources in the past and identify which were the most influential risks on the backourcing decision would be an interesting study. Further on, it would be valuable for other firms who considers backourcing to be able to see activity specific risks with backourcing. For example, if the sales department is outsourced, would the risk of backourcing that activity still be the same. Can they be prevented in other ways, or are contracts still an important resource for controlling the vendor. We also identified a potentially new reason for backourcing (see 5.3), namely synergy effects. It would be an interesting reason to further research, whether it significantly change the decision to backsource or not.

As this is a single case study, the results are hard to generalize. Therefore, more research should be done on backourcing and intellectual capital to get an established theoretical foundation which can be used as a cornerstone in future research in the area.
References:


Charles R. Perry, (1997), Outsourcing and union power, *Journal of labour research volume 18, Number 4, p. 521-534*


Appendix

Interview guideline 1 (INT1, INT2 & INT3)

General questions
1. What is your position in company X?
2. What are your work task?
3. How long have you been employed at Company X?
4. Which of the products are you responsible for?

Knowledge-intensive firm
5. What is your background?
6. What do you believe Company X core competencies to be?
   Why?
7. What are the biggest challenges for Company X?
8. Do Company X have any strategy for protecting intellectual capital? (Like for instance Patent and tradesecret?)
   If yes, what?
   If no, why?
9. To what degree do Company X share knowledge with external parties?
10. In those cooperation, how do Company X handle the possible knowledge leakage?
11. Do Company X have a specific policy on how the communication with external parties should be managed?

Product
12. What phase is the product you're responsible for in?
13. Is the product difficult to produce?

Contract
14. Who conducts the contracts?
15. What are the most important areas to cover in a contract with the outsourced partner?
16. How does the power situation look in your current contracts?
17. Is it possible for Company X to influence the current power situation in a contract and renegotiate it?
18. How thorough is the contracts? Do you believe every potential loophole is covered?

Outsourcing
19. What activities regarding the product is outsourced?
20. Why did Company X outsource that/those activities?
21. Could the manufacturer produce the product in a better way than Company X?
22. Are you satisfied with the partnership?
   If yes, why?
   If no, why?
23. Have there been any problems with the outsourced company?
   If yes, in what way?
   If no, Move on
24. Do you think that the outsourced activity is important for Company X?
25. Do you believe Company X is seen as an important customer from the outsourced companies perspective?
   If yes, why?
   If no, Why not?
26. Do you believe to be in control over the outsourced activity?
Backsourcing
27. For what reason do Company X want to backsource?
28. How will the suppliers receive the information about your backsourcing decision? And at what stage?
29. Can you terminate the contract without any major consequences?
30. Do you believe that your relationship with the outsourced actor will get worse by quitting your cooperation?
31. Is it important to maintain a good relationship with the vendor you once outsourced to?
32. Is an increase in control an important factor in your decision to backsource?
33. Do you believe backsourcing is the right way to go for you?

Risks
34. Does the outsourced actor have sufficient knowledge about your product to act opportunistic?
35. Is it problematic that the company are aware of your intellectual capital?
36. Do you believe there is any risks with taking the production back in-house?
   If yes, what?
   If no, why?
37. How can these risks affect you in the long/short term?
38. Can you prevent that these risk will occur?
   If yes, how?
   If no, why?
39. Is the relation with the supplier important when backsourcing?
Interview guideline 2 (INT4)

General questions
1. What is your position in company X?
2. What are your work task?
3. How long have you been employed at Company X?
4. Which of the products are you responsible for?

Knowledge-intensive firm
5. What is your background?
6. What do you believe Company X core competencies to be? Why?
7. What are the biggest challenges for Company X?
8. Do Company X have any strategy for protecting intellectual capital? (Like for instance Patent and trade secret?)
   If yes, what?
   If no, why?
9. Do you believe Company X outs enough resources at protecting the knowledge?
10. To what degree do Company X share knowledge with external parties?
11. In those cooperation, how do Company X handle the possible knowledge leakage?
12. Do Company X have a specific policy on how the communication with external parties should be managed?
13. How do Company X educate the workforce in protecting knowledge?

Contracts
14. Who conducts the contracts?
15. What measures do Company X use to secure the extent of the contracts?

Outsourcing
16. Why did Company X outsource that/those activities?
17. Are you satisfied with the partnerships?
   If yes, why?
   If no, Why?
18. Have there been any problems with the outsourced companies?
   If yes, in what way?
19. Do you think that the outsourced activity is important for Company X?
20. Do you believe to be in control over the outsourced activity?

Backsourcing
21. For what reason do you want to backsource product B and A?
22. Do you believe that your relation with the outsourced actor will get worse by quitting your cooperation?
23. Is it important to maintain a good relationship with the vendor you once outsourced to?
24. Is an increase in control an important factor in your decision to backsource?
25. Do you believe backsourcing is the right way to go for you?

Risks
26. Does the outsourced actor have sufficient knowledge about your product to enable?.
27. Is the relation with the supplier important when backsourcing?
28. Is it problematic that the company are aware of your intellectual capital?
29. Do you believe there is any risks with taking the production back in-house?
   If yes, which?)
   If no, why do think so?
30. How can these risks affect you in the long/short term?
31. How can you prevent that these risks will occur?
If yes, why?
If no, why?
32. Is it expensive to add patents on the original patent?