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OUTSOURCING DECISION-MAKING IN MINING INDUSTRY

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The objective of this research is to describe the nature of an outsourcing in mining industry and the main focus of outsourcing will be in the characteristics of outsourcing decision-making and its implications on outsourcing decision-making process. Mining industry sector is offering interesting facets for outsourcing as a practice due to the remote locations, mine lifecycle, limited and specified supply market and challenging production. The theoretical contribution of this research creates knowledge from the typical elements of the outsourcing decision in mining industry and shows where the motivators and factors are typically encountered in such decisions, and how they affect to the outsourcing process.

In this research qualitative research methods are used. The theoretical framework is created by combining pre-existing outsourcing literature of outsourcing process and outsourcing decision-making. The theoretical framework is used to support the empirical data collection, analysis and formation of the theoretical conclusions. The empirical part consist a multiple case-study with two research cases from a mining industry. Interviews were the main empirical data used.

As a result of this study, outsourcing in mining industry is guided by two contextual factors: the production factors and the capacity-based factors. Production related decisions occur more often in the strategic level of outsourcing decision and capacity-based outsourcing decisions in the tactical level. Therefore the outsourcing decision is the groundwork of firm’s capability base and a risk perspective. The strategic risk assessment is to identify how critical outsourced processes are to the organization. For the capability evaluation, several actors have been recognized to have an impact on outsourcing decision. This research also reveals that in some situations, for example in limited market with high uncertainty, the supplier capability can have an overall impact on outsourcing decision of the company.

This research provides useful insights for outsourcing managers to evaluate their outsourcing decisions. The study reveals that it is important to understand both internal and external environment of the outsourcing decision and the strategic and structural aspects associated with an organization’s decision to reconfigure.

Keywords
Outsourcing management, supplier capability, strategic outsourcing, core business,
CONTENTS

Abstract

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1 INTRODUCTION

The objective of this research is to describe the nature of an outsourcing in mining industry. The main focus of outsourcing will be in the characteristics of outsourcing decision and its implications on outsourcing decision making process.

1.1 Introduction to the research area

Outsourcing is being employed to achieve performance improvements across the entire business. Most organizations outsource some of the functions they used to perform in itself. Since, the early 1990s, outsourcing has been discussed under both academic business studies and operational practice (Kakabadse and Kakabadse 2000). Usually firms have outsourced their non-core activities such as maintenance services or call centers (Quinn & Hilmer 1994). However, outsourcing does not necessary mean that the outsourced function is less important to company’s performance (Holcomb & Hitt, 2007; Lacity, Solomon, Yan & Willcocks 2011). In fact, outsourcing is said to help firms to perform better in their core competencies and mitigate shortage of skill or expertise in the areas where they want to outsource. There are increasing trend among outsourcing also other business processes and in some cases even the actual production or parts of it are bought from outside service providers (Kakabadse & Kakabadse 2005).

The phenomenon has been studied in several fields of academic research from organizational theories to theories of production economics. In general, empirical studies concerning firm boundary decisions or the decision whether to outsource or not, concentrates on the usage of different theories of the firm, e.g. transaction cost theory or resource-based view, to predict and explain existing firm boundaries in practice. In this study the theoretical underpinnings of outsourcing and the traditional perspective concerning firm boundary decisions are submitted. However, the primary focus of this study is on the outsourcing decision itself, not the actual management of the outsourcing action.

Current outsourcing research can be divided for four main focus areas (Weimer & Seuring 2008; Hätoenen & Eriksson 2009): 1) Why to outsource, takes account the
relative risks and benefits of outsourcing. As a prerequisite of the outsourcing decision is the possibility to balance these identified risks and benefits within its own contexts. The questions on why and 2) what to outsource are logically tied together particularly in earlier outsourcing literature which is predominantly dictated by transaction cost theory (TCT) and the resource-based view (RBV) (e.g. Hätönen & Eriksson 2009, Harland, Knight, Lamming & Walker 2005). In consequence, the discussion of the antecedents of outsourcing in general is driven by the core competence-thinking or make-or-buy decisions (Duan, Grover & Balakrishan 2009)

Hence, the cost efficiency and production reorganization are two of the most important drivers for outsourcing (e.g. Franceschini, Galetto, Pignatelli & Varetto 2003). Third research stream is mainly developed by practitioners and deals with the problem 3) how the outsourcing engagement should be conducted (for e.g. de Boer, Gaytan & Arrayo 2006; Power, Desouza & Bonifazi 2006, Sanders, Locke, Moore & Autry 2007). An finally, searching for 4) what are the main success factors with outsourcing, have inspired research activites to try to develop the key factors leading to a succesfull outsourcing project(for e.g. Quinn & Hilmer 1994, Lonsdale 1999, Dekkers 2011; Kremic, Tukel & Rom 2006).

This study discusses the key aspects associated with outsourcing in mining industry. In mining industry outsourcing has evolved from outsourcing peripheral activities like security or cleaning to more strategic activities like drilling, hauling, maintenance and even mining (Kenny & Bezuidenhout 1999). Therefore, this industry sector is offering interesting facets for outsourcing as a practice due to the remote locations, mine lifecycle, limited and specified supply market and challenging production. Furthermore, the growth of the mine industry is important economic factor for Northern Finland and it is important to know what kind of business processes and other services the mine industry will demand in future.

This research is part of the Barents Logistics 2- program, which is a competence development project funded by the Kolarctic ENPI CBC Programme of the European Union. The main objective of the project is to develop logistics competencies and deepens educational cooperation between the universities and educational institutions together with public and business organizations in the Barents Region.
1.2 Argumentation of the importance of the research topic

Hätönen and Eriksson (2009) suggest that the process of outsourcing is the key to understand the outsourcing phenomenon and the strategic changes in it. The question how outsourcing is done has inspired several researches (Greaver 1999, Fransceschini et al. 2003, McIvor 2003 etc.), but the focus in many studies has been on the planning phase or in preparing for the outsourcing (e.g. deBoer et al. 2006). Therefore, regarding the riddle of how to outsource, there still remains a lot to be studied (Hätönen & Eriksson 2009, 147).

Despite the fact that outsourcing is widely investigated topic in practical and academic business studies, not that many studies have been conducted regarding the determinants of the outsourcing decision. In literature, various models of outsourcing process have been proposed (Greaver 1999, Franscheschini et al. 2003, McIvor 2003, Van Weele 2005) but the focus has usually been on the preliminary planning process, on what should be outsourced (Hätönen & Eriksson 2009), not on the whole process. Also, the current outsourcing literature usually focuses on strategic level and provides little insights on how outsourcing decision can be designed at the operational level.

According to Hätönen and Eriksson’s (2009) research review, the future development of outsourcing research can combine multiple questions from previous outsourcing research-streams. In this research, three previous research questions are utilized: Why to outsource, is used by clarifying the theoretical underpinnings of outsourcing decision and to understand more deeply the actual need to do outsourcing. Naturally, analyzing the decision making in outsourcing eventually refers the question what to outsource. And finally, how to outsource, is in the centrum of this research therefore the aim in this research is to understand the decision making characteristics that affects the decision of how outsourcing is done.

Closer to the issues discussed here comes Kremic et al. research review (2006) where they present an outsourcing decision framework for evaluating the organization’s functions for possible outsourcing. Also Fill and Visser’s (2000) composite approach to the make or buy decision, and Handley and Benton’s (2009) research on
outsourcing process models have a touch on the same research gap. However, the decision-making determinants in outsourcing decision is very little explored topic in the context of mining industry. Previous studies concerning outsourcing in mining industry have been performed as quantitative studies and descriptive in their nature. Particularly, in mining industry no empirical investigations and respective results were found to give tools for an in-depth understanding the decision-making characteristics in outsourcing decisions. Closer to this issue comes Baptista (2013) with her research of interaction processes in long-term relationships in metal mining industry. Even though her study did not manage the outsourcing activity itself, her findings are consistent with the outsourcing literature used in this study.

1.3 Aim of the research and the research question

The objective of this research is to describe the nature of an outsourcing in mining industry. The main focus of outsourcing will be in the characteristics of outsourcing decision and its implications on outsourcing decision making process. Therefore the aim is to create knowledge the typical elements of the outsourcing decision in mining industry and show where the motivators and factors are typically encountered in such decisions, and how they affect to the outsourcing process.

The main research question is:

How different decision-making characteristics determine outsourcing process in mining industry?

This focus area provide both a general and comprehensive way of approaching outsourcing, including issues related to its causes, substance and process itself.

In this research the theoretical premise covers academic underpinnings of outsourcing literature but takes it further, towards discussion of a business process outsourcing, strategic outsourcing and different forms of outsourcing arrangements.
1.4 Research methods

This research is performed as a qualitative case study, which provides in-depth analysis to specific problems and seeks to understand complex phenomena (Yin 2003: 2) The case study will cover two operating mines and the empirical data will be collected through semi-structured interviews. The main purpose of the qualitative research method is usually to increase the understanding of the phenomenon beyond the study (Leskinen, Alasuutari, Koskinen, Peräkylä, Pyörälä, Summa & Suoninen 1995: 16). This research has more subjectivist than objectivist approach to the research phenomenon, which indicates that the qualitative method is more suitable for the research.

This research consists of two parts: theoretical and empirical. In the theoretical part, the theoretical frame of this research is created on the basis of pre-existing literature of the outsourcing. In the empirical part of the study two case studies of operating mines are presented. The purposes of the case studies are to empirically evaluate and motivate the tentative theoretical framework.

A case study is an appropriate research method when the subject of the research is a process or series of events or based on a history (Koskinen, Alasuutari & Peltonen 2005: 157). Since the concept of outsourcing is very broad, this research is focusing only to a mining industry and more specific to the processes outsourced for the needs of operating mines.

1.5 Definitions of the key concepts

Outsourcing:

Outsourcing is an umbrella term that includes a variety of sourcing options with different characteristics and for different business objectives. This research follows Sanders et al. (2007) broad specification of outsourcing, which indicates that “outsourcing involves choosing a third party or an outside supplier to perform a task, function, or process, in order to incur business-level benefits”.
Outsourcing decision:

One the most important questions to the firm’s organizational strategy are what to produce internal and what to buy from external providers (outsource). Therefore, a definition of firm’s boundaries and organizational strategy culminates in the make-or-buy-decision.

Outsourcing process:

Outsourcing as a process is usually assessed as a multistage process. Usually models consist of a three or four phases or steps of the outsourcing process. In first phase company should determine the potential objects of outsourcing. In second phase the transition should be planned and managed. And in final phase, the outsourcing process should be evaluated.

1.6 Structure of the research

The previous chapter presented the research problem, the research question and the aims of this study. Furthermore, the previous chapter shortly introduced the research methodology. It also familiarized the reader with the topic and gave a general idea of the outsourcing phenomenon in mining industry. The second chapter of this study presents an overview on existing literature and previous research of an outsourcing process. In the third chapter, motivators for outsourcing, such as benefits and risks are presented. Third chapter also presents different factors that are typically encountered in outsourcing decision. Based on the theories discussed earlier, the chapter four brings essentials of those theories together and the theoretical framework is created. Chapter five introduces the mining industry in general. Also outsourcing in mining industry is discussed in this chapter. Chapter six presents the different research methods used in this thesis and describe the empirical sources of data collected. Also the case companies used in empirical study are introduced in this chapter. Chapter seven includes the analysis of empirical research and in the end of the chapter seven, empirically grounded theoretical model is drawn together. Finally,
the chapter eight summarizes the theoretical conclusions with managerial implications and the limitations of the research are taken into consideration.
2 OUTSOURCING PROCESS

This chapter presents the theoretical underpinnings of outsourcing and also the different levels of outsourcing engagements. Also different prescriptive models of the outsourcing process are discussed. Furthermore, this chapter discusses critical elements in outsourcing process as well its implications on outsourcing performance, selection of the outsourcing scope and eventually the existence of contractual completeness and relationship management.

2.1 Theoretical underpinnings of outsourcing

There are various research streams underpinning the definitions of the concept of outsourcing. The phenomenon of outsourcing as a practice originated in the 1950s, but it was widely adopted as a strategy in the 1980s. After that, the strategy has evolved from a cost focused approach towards more cooperative nature. Today, cost is not regarded as a biggest decision-making criterion, instead more critical and knowledge-intensive business components are outsourced and often developed in close cooperation with the vendor. (Hätönen & Eriksson 2009).

Outsourcings are nowadays done both domestically and internationally. International outsourcing can also be referred to as offshore outsourcing, and it involves the transfer of both the ownership and the location of the operations. Offshoring is often used synonymously with offshore outsourcing which actually means the strategy of transmitting activities across national borders (Harland et al. 2005).

Outsourcing has three evident types since it first evolved: Manufacturing outsourcing, Information technology outsourcing and Business process outsourcing (Mahmoodzadeh, Jalalinia & Yazdi, 2009). Manufacturing outsourcing is the production of a part, component part or service and IT outsourcing involves the outsourcing of IT resources. Business process outsourcing whereas represents the outsourcing of a whole business process, to which the service provider takes full responsibility. Business process outsourcing differs from traditional outsourcing procedure in that it affects more higher level of expertise than knowledge, which have until recently been ignored by the threats of outsourcing (Duan et al. 2009).
In literature, the most used theoretical perspectives of outsourcing are transaction cost theory, resource-based view, and core-competences. The transaction cost theory has been guided companies on what to outsource and concentrated more typically confine outsourcing to more specialized and repetitive activities, such as manufacturing, logistics and maintenance. Whereas, the theory of resource-based view as well as its’ descendant, core competencies, have directed companies to focus on core competencies and have provided a context to explain outsourcing of more visible and potentially sensitive functions as a strategic arrangements. (Holcomb & Hitt 2007).

2.1.1 Definitions of outsourcing

Outsourcing involves reliance on external skills and capabilities. However, there are many definitions of outsourcing in the literature. Slightly traditional definition of outsourcing is provided by Lei & Hitt (1995) who defined outsourcing as “the reliance on external sources for manufacturing components and other value-adding activities”. In very general level, outsourcing exists when a business function or process is subcontracted to an external supplier, who is then responsible for the delivery of goods and services that would have been produced internally in other case (Kakabadse and Kakabadse 2000).

Outsourcing is similar to subcontracting, joint venturing, and strategic partnering concepts. For example, Greaver (1999: 10) claims that the process of hiring external service provider is referred to as outsourcing. By his definition, outsourcing is: “the act of transferring some of a company’s recurring internal activities and decision rights to outside providers, as set forth in a contract”. However, some scholars argue that outsourcing cannot be used as a synonym for contracting-out because, outsourcing entails a long-term relationships with a high degree of risk sharing, whereas contracting out refers more to work conducted by an outside supplier on job-by-job basis, cost being the practically the only decision making criteria. (Hätönen & Erikkson 2009: 145). Some argue that what separate outsourcing from these similar concepts is the fact that originally “internal” activities are being transferred out (Lei & Hitt 1995). Hätönen & Erikkson (2009) found out in their research review that in the “early-days” of outsourcing, the outsourcing strategy included cost based
contracting out as well. As the practices have developed and increasingly strategic operations are being outsourced, the relationships have evolved beyond the arms-length, purely transactional arrangements. Nonetheless, they state out that “it is not that the theory has become obsolete; it is perhaps the evolution of the practice that has complicated the theory”.

Gilley and Rasheed (2000) made a distinction between substitution-based and abstention-based outsourcing and with that leverage the definition of outsourcing to cover both, existing functions and future ones. With substitution, firms discontinue its production of goods and services and replace it with capabilities provided from outside markets. The firm’s scope is then determined by comparison of the performance differential between existing internal capabilities and those available in external markets (Holcomb & Hitt, 2007). On the contrary, abstention-based outsourcing occurs when firms acquire capabilities from intermediate markets, rather than be involved in the necessary investments to internalize production. Thus, the firm’s scope is also determined by evaluating the difference of costs between internal and external developing of needed capabilities (Gottfredson, Puryear & Phillips 2005). Based on that, Gilley and Rasheed (2000) defines outsourcing as procuring something that was either originally sourced internally (i.e. vertical disintegration) or could have been sourced internally notwithstanding the decision to go outside (i.e. make or buy). With that, Gilley and Rasheed provide clarification for the definitional confusion of the difference between the internal and external outsourcing (Harland et al. 2005: 2).

This research follows Sanders, Locke, Moore and Autry’s (2007) broad specification of outsourcing, which indicates that “outsourcing involves choosing a third party or an outside supplier to perform a task, function, or process, in order to incur business-level benefits”. According to them outsourcing is an umbrella term that includes a variety of sourcing options with different characteristics and for different business objectives.
2.1.2 Transaction cost theory

A one traditional and very popular theoretical approach for firms’ boundary decision is transaction cost theory. Transaction cost theory suggests that the decision of whether the products and services are bought or provided in-house is determined by the most profitable option (Holcomb & Hitt 2007). To put it simple, if using the markets results in lower transaction costs than doing that activity internally, then it should be bought from the market (Hätönen & Eriksson 2009: 145).

Transaction can be characterized with the degree of asset specificity, the complexity of the transactional relationship and the frequency of the transaction (Greenberg, Greenberg & Antonucci 2008). Therefore, transaction costs evolve from three elements: the transaction itself, business environment and the transaction parties. Transaction costs include the costs of selecting suppliers, negotiating prices, writing contracts, monitoring the performance, as well as the potential for opportunism from suppliers (Grover & Malhotra 2003). The potential for opportunism increases if investments have to be made which are specific to a particular relationship.

However, according to Holcomb and Hitt (2007) transaction cost theory implies that all firms facing a similar transactional attributes and a set of exchange conditions will end up with the same internalization decisions. In reality buyers are seeking a broader range of strategic contributions from their suppliers. Beyond short-term cost savings, there are many other motivations for outsourcing, for example acquiring superior resources and knowledge and competences from external providers.

2.1.3 Resource-based view

The resource-based view views the firm as a bundled of assets and resources that if employed in distinctive ways can create competitive advantage. Resource-based viewpoint is based on the theory that companies utilize outsourcing to get resources not available internally. Theory was generated after transaction cost theory lost some relevance in that the cost being literately only decision-making criteria (Holcomb & Hitt 2007). Resource-based view of the firm emphasizes the importance of resources in guiding firm activity.
According to the theory, the management of a firm's collection of capabilities is in central to company’s competitive advantage (Lonsdale 1999; Harland et al. 2005; Handley & Benton 2012). More specifically, the theory contends that the reasons for outsourcing is related to the conditions that enable firms to establish, maintain, and use capabilities more efficiently than markets can do (Holcomb & Hitt 2007). In that, the operational effectiveness is determined by how effectively companies employ their resources: the ones which are internal and the ones which can be procured from external providers (Logan 2000; Hätönen & Erikkson 2009).

However, as the transaction cost theory, the resource-based view have been remarked for being too simple approach to describe more complex reality (Dyer & Singh 1998) and also that strategic capabilities and resources are often hard to identify in practice. Despite all of that, the resource-based view subscribed a competitive strategy model rather than a decision model of outsourcing (Dekkers, 2011). Maybe that explains why in recent years, some transaction cost scholars have accepted that transaction-based and resource-based perspectives “deal with partly overlapping phenomena, often in complementary ways” (Holcomb and Hitt, 2007). When resource based view has directed companies to focus core competencies, the transaction cost theory helps the organization to decide which of their non-core functions they should buy and what to make in-house (Logan 2000).

2.1.4 Core competencies

Slightly consistent with arguments of resource-based view, theory of core competencies focuses on strategic decision making itself (Dekkers 2011). According to this theory, focusing on core-competencies (Prahalad and Hamel, 1990) raises the key issue on which areas a company should concentrate to balance their make-or-buy decisions (Gilley & Rasheed, 2000). For example, Dekkers (2011) found out that the core competencies approach has mostly driven the outsourcing decisions made by the companies. His study of manufacturing firms and their outsourcing decisions also reveals that the operational issues had been hardly accounted for during the decision making.
In literature, there is still many ambiguities’ defining what is meant by company’s core competencies. For example, some scholars regard core activities to be core competencies, which are the ones firm is continuously engaged in, whereas peripheral activities are more intermitted and can rather be outsourced (Quinn & Hilmer 1994). Alternatively, some scholars state that core competencies are those activities which provide long-term competitive advantage, and must be kept in-house to secure that (Prahalad & Hamel 1990). Some scholars regard core to be more related to the productive capabilities than governance of capabilities. Jacobides and Hitt (2005, p.1222) examined how capability differences shape the make-versus-buy decision concluding that, “productive capabilities can and do play a major role in the determination of vertical scope”. The focus of their study was stated more to the comparative advantage than competitive advantage of the firm.

2.1.5 Strategic outsourcing

According to Greaver (1999: 8-10) outsourcing initiative becomes strategic when it goes along with the organization’s long-term strategies. When tactical outsourcing is more featured with a problem-solving mentality, takes strategic outsourcing it to a higher level. Strategic outsourcing should take account the whole performance and structure of the organization by asking questions about outsourcing’s relevance to the organization and its vision of its future, current and future core competencies, current and future costs and current and future competitive advantages. (Greaver 1999: 8, 71-125).

One of the ancestors of outsourcing literature, Ansoff (1965: 201) argued that the most important questions to the firm’s organizational strategy are what to produce internal (vertical integration) and what to buy from external providers (outsource). Early scholars adopting the strategic perspective argue that core activities should stay in-house, whilst non-core activities can be outsourced, in order to preserve core competencies (Prahalad and Hamel, 1990; Quinn and Hilmer, 1994; Lonsdale 1999). Therefore, a definition of firm’s boundaries and organizational strategy culminates in the make-or-buy-decision.
Like, Quinn and Hilmer (1994), who claim that outsourcing processes have faced an evolution from traditional to strategic outsourcing. Outsourcing is considered traditional when firms are outsourcing processes that are not considered critical for the organization. For example, activities that do not require specific competencies by the supplier like cleaning or canteen services. In turn, strategic outsourcing happens when companies outsource everything except those special processes and activities which could provide a unique competitive edge to the company (Quinn & Hilmer, 1994). However, by then Quinn and Hilmer (1994) used the term “strategic outsourcing” in order to identify what is the strategic core of the firm and what are those activities which are crucial to attain the strategic goal of the firm (Quinn 1999; Kakabadse & Kakabadse 2000).

Mahmoodzadeh et al. (2009) takes the same direction and divides the outsourcing decision to be either tactical or strategic. Strategic outsourcing looks for overall business improvement rather than simple cutting costs. Therefore, a company could attain its strategic goals by focusing on central activities to organizational success. Tactical outsourcing has a short-term focus on minimizing operational costs or maximizing cost-savings. But according to Gilley and Rasheed (2000) outsourcing is never simply a purchasing decision. The outsourcing decision itself contains a fundamental choice to reject the internalization of an activity. Because of that, outsourcing is a highly strategic decision.

Holcomb and Hitt (2007) draw a distinction between strategic outsourcing and strategic purchasing. Strategic purchasing refers to the ongoing process of soliciting, negotiating, and contracting for the delivery of goods and services from suppliers that involve arms-length transactions with suppliers (Chen & Paulraj, 2004). Companies generally purchase products and services from suppliers on a frequent or repetitive basis for example to the procurement of production inputs or to the purchase of commodities for administrative use. These decisions tend to be based more to the routine and rarely involve the transfer of resources. According to Holcomb and Hitt (2007), strategic outsourcing involves linkages with exchange partners that provide access to desired specialized capabilities which cannot be realized through internalization. Because of that, the strategic outsourcing reflects a primary relational view and cannot, therefore, equate with the purchase of goods and services.
This study follows Holcomb and Hitt’s (2007) idea of strategic outsourcing and the topic is discussed further later in this study.

2.1.6 Levels of outsourcing

Outsourcing can occur in different activity levels (Greaver 1999: 5-6). In the outsourcing spectrum (Figure 1) introduced by Fill and Visser (2000), outsourcing is described as different levels of outsourcing. At one extreme outsourcing is seen in form of hiring temporary labor or machines, and in the other extreme, the complete responsibility of the process is outsourced and the relationships is described as strategic partnering. In the middle are various forms of skills and consultancy providers which according to authors, represents more everything in-between-outsourcing. Time is considered to through the continuum with short-term market change in the rational end and strategic partnership on the strategic end.

The outsourcing spectrum

<table>
<thead>
<tr>
<th>Operational task to relieve capacity overload</th>
<th>Strategic partnership role to supply predetermined assemblies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultancy, Capacity Augmentation, Skills Providers</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. The outsourcing spectrum. Adapted from Fill Visser (2000).

Another way to differentiate outsourcing ventures is introduced by Currie & Willcocks (1998), who distinguish between four types of IT sourcing decision: total outsourcing, multiple-supplier sourcing, joint-venture/strategic sourcing and insourcing. Total outsourcing represents the most traditional type of outsourcing, where service is contracted out for a single vendor who is then completely responsible of the outsourced service. Multiple-supplier is the second type of the outsourcing and it focuses more on creating competition among suppliers by tendering and creating standardized operations for easier comparison. The third type of outsourcing is joint ventures or strategic alliance. In joint ventures, the service
provider and the client company share an ownership of the service or product, and therefore the client company has more influence and control over the service provider. Strategic alliances are very similar with joint ventures, with common goals and targets. The fourth type of the Currie and Willcocks’ (1998) list is insourcing and backsourcing which can exist for example when there are inadequate supplier or market conditions.

2.2 Prescriptive models of outsourcing

In literature, various models of outsourcing process have been proposed (e.g. Greaver 1999, Franscheschini et al. 2003, McIvor 2003, Van Weele 2005) but the focus has usually been on the preliminary planning process, on what should be outsourced (Hätönen & Eriksson 2009), not on the whole process. In consequence, this research focuses on decision making characteristics within the outsourcing process, and covers also the motivators and factors that determines the outsourcing decision-making process.

Outsourcing as a process is usually assessed as a multistage process. Usually models consist of a three or four phases or steps of the outsourcing process. In first phase company should determine the potential objects of outsourcing. In second phase the transition should be planned and managed. And in final phase, the outsourcing process should be evaluated. According to de Boer et al. (2006) common aspects of outsourcing models are: 1) Definition of a core competence/strategy 2) assessment of internal costs, and 3) analysis of suppliers and competitors. Figure 2 collects examples of prescriptive models of outsourcing.
Zeng (2003) depicts the outsourcing process as five stage process model (Figure 3). First stage is investigation and tendering, where organization should identify the non-core and core activities and analyze the possible scope of the outsourcing as well the risks and benefits in it. Second stage is the evaluation where specific supplier selection criteria are developed to identify the list of appropriate suppliers. Also the sourcing strategy is designed and cost models are finalized in this stage. In third stage final suppliers are selected and the negotiation of an agreement is done. Different technical assessments of selected suppliers need to identify due to the possible adaptations and furthermore cost savings. Also the process implementation schedule and timelines are fixed in this stage. Fourth stage is implementation, where a performance analysis should be put in place and finally, in fifth stage, the supplier’s performance is monitored and possibilities for continuous improvements evaluated.
Figure 3. Four-step outsourcing process model. (Adapted from Zeng (2003))

Many authors focus their interest only on some phases of the overall process of outsourcing and concentrated more on to concerns of hidden costs and outsourcing pitfalls and risks (e.g. Lonsdale 1999; van Weele 2005; Kremic et al 2006; de Boer et al. 2006). However, such step-by-step models fail to depict the importance of the specific outsourcing decision and the essential assessment and planning of the outsourcing process (Hätönen & Erikkson 2009). Making the right outsourcing decision requires a distinct understanding of the potential engagement options, risks and benefits, and the expedient of each conceivable arrangement for meeting business objectives (Sanders et al. 2007).

In some cases, the outsourcing mission has been faced from the strategic viewpoint, highlighting the importance of contract and process management and emphasizing the risks and advantages of outsourcing decision (e.g. Lonsdale 1999). Among the five stages of the outsourcing process presented by Zeng (2003), the first three stages, which contains the decision making in outsourcing process, represents big challenges, and therefore, are focus of this research.

### 2.3 Outsourcing process elements

Saxena & Bharadwaj (2009) adopts a perspective, where business processes are the actual building blocks of corporative strategy. According to them, from the previous dominating thinking of company’s core competence as the leading factor of
outsourcing decisions, outsourcing the whole processes is evolving more toward a strategic organizing and improving the value chain. They even go further to announce that the scope of the outsourcing is moving from question of whether to outsource towards a question of how to outsource every process in the value chain. This can be done only when for every process outsourced is possible to find a capable service provider.

Holcomb and Hitt (2007, explain the existence of strategic outsourcing through a model which based on extending transaction cost theory (TCT) and resource-based view (RBV). They describe strategic outsourcing as follow, ‘The organizing arrangement that emerges when firms rely on intermediate markets to provide specialized capabilities that supplement existing capabilities deployed along a firm’s value chain.’ It means, that strategic outsourcing enhances the company’s whole portfolio of capabilities and value creation potential, not only allows firm to reduce costs. In other words, an addition to cost savings, by outsourcing companies rely on intermediate markets to achieve more specialized capabilities that intermediate markets can offer. Within their model (Figure 4), Holcomb And Hitt (2007), integrated conditions for value creation with economizing arguments for strategic outsourcing, which uses transaction- and capability-based factors to examine a firm’s decision to outsourcing.

**Figure 4. Strategic Outsourcing model. Adapted from Holcomb & Hitt (2007)**
In their model, transaction-based view depicts the basic assumptions of efficiency which transaction cost theory classically drives the reasoning of strategic outsourcing. In this view, transaction costs evolve through difficulties that emerge from market-based exchanges. Costs like that contain negotiating, contracting, monitoring and enforcement costs. According to this perspective, the alignment of different governance structures with attributes of the exchange and the underlying contracting environment, are the basis of the performance implications of outsourcing and the decision criteria firms use. Transaction cost theory implies that all firms with similar exchange conditions will end up with the same decisions about strategic outsourcing, but according to resource-based view, resource heterogeneity leads to otherwise similar firms displaying significant different ways, by the use of different capabilities. To fill up the incompleteness of transaction cost theory, they combine it with resource-based view to explain the resource heterogeneity between companies. For example, in their model, capability complementarity refers the situation in which specialized capabilities enhance the value creation potential of company’s own capability endowments. However, these kinds of special complementarities can be hard to find from intermediate markets, and sometimes strategic outsourcing can provide access to them.

Handley & Benton (2009) lists three critical elements of outsourcing process (Figure 5): Strategic evaluation, contractual completeness and relationship management. According to them, strategic evaluation of an outsourcing decision is simultaneously reflected by firm's evaluation from a capability perspective and from a risk perspective, which supports the combination of resource-based view and transaction cost theory above (e.g. Holcomb & Hitt 2007). Capability evaluation contains the evaluation of the strategic value of the capabilities and resources associated with the business activity to be outsourced. Strategic risk assessment, in the other hand, represents the degree to which the company evaluates the multitude of strategic risk associated with outsourcing. In their study, they found evidences that extensive strategic evaluation plays a significant role in determining the success of outsourcing initiatives and performance. However, the effect of strategic evaluation was characterized as indirect rather than direct.
2.4 Outsourcing governance: criticality and scope

2.4.1 Scope of outsourcing

Similar concept with the level of outsourcing is the scope of the outsourcing. The scope is the level and breadth of the function assigned to an outside provider. After all, the outsourcing governance including contract management and relationship management is predominantly determined through the decision of the scope of the outsourcing.

Scope of the outsourcing can vary greatly. Outsourcing can refer to simpler contracts like hiring contractors for a building site or large and complex like outsourcing whole IT operations of a multinational company. For instance, Lacity and Willcocks (1998) suggest that when choosing between total outsourcing and total insourcing, the selective outsourcing seems to better achieve expected costs reduction targets.

Weimer and Seuring (2008) take a wider look into the scope of outsourcing in their study in respect of information needs in the outsourcing lifecycle. In their research they recognized six steps on how to define the scope of an outsourcing project, from the selection of an outsourcing-type to the decision how the outsourcing performance is con (Figure 6).

The initial scope of the outsourcing regards the overall type of the outsourcing performance. As listed before, in literature there are three evident types of

Figure 5. Critical elements of outsourcing process. Adapted from Handley & Benton (2009).
outsourcing: business process outsourcing, manufacturing outsourcing and the information technology outsourcing. However, the recent trends in outsourcing have been toward more complex services that are more near to the central management function (Lacity et al. 2008). The functional scope is the extent of functions involved in the outsourcing, for example whether the outsourcing concerns just an individual task or a whole process. The organizational scope of outsourcing concerns the different organizational units and departments that are involved in the outsourcing process. The geographical scope pays attention to national limits of the outsourcing performance. Service procurement from abroad has been growing phenomenon from the early 90’s. This phenomenon, which is also called offshoring or an offshore outsourcing, has been focusing especially outsourcing to countries with low-cost-labor, such as India or China. Today’s outsourcing projects typically involve offshoring, which creates additional complexity for the outsourcing performance. (Kakadabse & Kakadabse 2000).

Fifth phase in Weimer’s and Seuring list (2008) is the complexity of the service itself. Complexity of the outsourced service can affect several ways for the outsourcing scope. For example, outsourcing can lead companies’ to be “locked-in” with one or two specific supplier (Dekkers 2002) or service complexity can be causing high switching costs (Barthélemy & Quelin 2006). Furthermore, more important the function is to organization, the more increase the requirements of controlling and monitoring the service performance. The final step is the decision of the transfer of employees which is the significant differentiation of the outsourcing ventures (Weimer & Seuring 2008). In Weimer & Seuring’s model (2008), transfer of employees’ answers the question is the outsourced service a completely new business, does it require multiple suppliers or does it contain the transfer of the existing employees.
A slightly more practical insight is described by Sanders et al. (2007). In their study of outsourcing arrangements, Sanders et al (2007) identify four broad categories of outsourcing engagements that differ in terms of scope: Out-tasking, co-managed services, managed services and full outsourcing. Out-tasking is the simplest form of outsourcing where the responsibility for the performance of a specific task (not a whole function) is assigned to an outside supplier. Co-managed services then involve a larger scope of tasks or function but keeping the control still in the client company. In managed services the responsibility assigned to supplier is often larger in scope, and the supplier is usually responsible of all aspects of function: equipment, facilities, staffing, software etc. Here, the outsourcing company typically takes part to design, implement and management in some level. Final stage is full outsourcing, which assigns the total responsibility of the function to the supplier.

Scope and criticality of the outsourced service are usually interrelated concepts. The criticality of the outsourced task or function corresponds with the scope of the outsourcing function. The scope and the criticality together present the two key categorical dimensions which differentiate the outsourcing engagements (Sanders et al. 2007), and eventually, design the outsourcing governance. For example, out-tasking represents the simplest form of outsourcing and therefore it often involves...
assigning to the supplier responsibility of more tactical task of function rather than a strategic function (Sanders et al. 2007). In consequence, more strategic and critical functions are usually fully outsource, which represent the other end of the scope spectrum. However, some exceptions do exist in the relationship between scope and criticality. Based on previous literature in respect of outsourcing ventures, organizations use total outsourcing to functions that are not regarded highly critical or strategically important (e.g. Lonsdale 1999). However, usually these functions are very extensive within their function scope (Sanders et al. 2007).

Sanders et al. (2007) draw a more extensive framework of different engagements in outsourcing engagements by combining criticality and the task scope together. This framework is illustrated in figure 7. According to them, high criticality coupled with large scope of outsourcing activity, leads to more comprehensive outsourcing engagements, and therefore, requires different types of managerial implications than the outsourcing of smaller scope or less critical tasks. For a successful outsourcing venture, it is important to form contracts so that both parties stand in the same level. These agreements are the link between the specifications fixed set in the contract and the delivery of the service. Fundamentally they provide the legal framework under which the performance of the provider is eventually measured.

![Figure 7. Framework for different outsourcing engagements. Adapted from Sanders et al. (2007)](image-url)
2.4.2 Contract management

Lack of proper contract management has been identified as a significant risk factor that can lead to increased cost of services and inability to meet cost reduction targets (Yao, Jiang, Young and Talluri 2010). Transaction cost theory implies that the contracts between client and vendor are always incomplete, due to the existence of bounded rationality (Greenberg et al. 2008). Bounded rationality refers the visibility of the outsourcing relationship in the matter that all contingencies concerning the transactional relationship cannot be foreseen and that is causing failures to the relationships.

Quinn and Hilmer (1994: 50) propose a “potential contract” relationship model, which addresses the organizational needs of control and flexibility. According to them, short-term contracts are suitable when the need for control is low and need for flexibility is high, and on the contrary, when the flexibility need is low and control need is high, they suggest turning to full ownership. In between these extremes lie alternative arrangements involving partial ownerships, joint developments, retainers and long-term contracts. (Quinn & Hilmer 1994; Kakabadse & Kakabadse 2000: 14).

Slightly more recent study proves differently. Yao et al (2010) investigate differences between three commonly used types of outsourcing contracts: fixed-price, cost-plus and gain-sharing contracts. Fixed-price contract covers all the costs and fees for predetermined services. By using fixed-price contract the outsourcing company can avoid vendor’s overcharges, however, it may diverge significantly from the market price during the contract duration. Cost-plus contract model is more tailored to a certain service delivery. The cost-plus contract requires usually vendor service levels and performance metrics, penalties for non-performance, pricing mechanisms and others client specify requirements. However, it is sometimes very difficult to define client’s clear requirements, and these additional and undocumented needs can raise service provider’s operational costs to another level. As a result, there is a big risk for unexpected increase of outsourcing expenses. Third commonly used contract model is a “gain-sharing” contract model, costs savings and cost overflows are shared with both parties. This type of contract can be used for protecting outsourcing firms from financial and technological risks, however, it is not that
commonly implemented mainly because the difficulties of assessing the mutually shared costs.

Despite that different contract types do exist, in their research Yao et al. (2010) find out, that no contract type is necessarily superior to others if the client has enough information. According to them, in reality the outsourcing company does not have access to all the required information for effective negotiation, and that can explain the popularity of some contract type among others.

However, making a proper contract for the outsourcing situation is an important mechanism for dealing with the existence of opportunism. Outsourcing companies need to consider which contractual models can be employed to protect from opportunism and what collaborative practices can be developed in order to deal with contingencies occurring during the venture (McIvor 2003, Greenberg et al. 2008). For example, Handley & Benton (2009) proved that strategic evaluation has a significant positive effect on contractual completeness. According them, contractual completeness is the extent to which the partners of outsourcing agreement develop a contract which effectively coordinates resources and addresses identified organizational risk. The main purpose of contractual completeness is to make the outcomes of outsourcing performance more predictable. A more detailed and extensive strategic evaluation can provide to the outsourcing firm more detailed insights on the strategic implications associated with outsourcing, These insights from strategic evaluation, can then be used to develop a more effective contract to address the identified control and coordination requirements of the outsourcing performance.

2.4.3 Relationship management

According to Hätönen and Eriksson’s (2009) research review, cooperation, collaboration and co-development have become key issues in managing outsourcing relations which all are enabling decomposition of knowledge-intensive and creative-in-nature activities. Hence, the future competitive edge is seen to lie in flexibility that can be achieved through tight operational focus and leveraging external core competencies outside of this area. Partnership arrangements vary considerably in
their operations, from flexibly defined formal contacts, to more strategic initiatives. (Quinn 1999).

Sometimes outsourcing can lead to conflict of interests between the outsourcer and outsourced, for example situation, where supplier has to act contrary to their other interests (Logan 2000). Disconnected goals can prevent cooperation and make it difficult to leverage specialized capabilities through strategic outsourcing and lead to early termination of these relationships. Nonetheless, collaboration and mutual investments in capabilities can prevent from opportunistic behavior and risks of high transaction costs. For example, Holcomb and Hitt (2007) suggest that a cooperative experience with specialized firms increases information symmetry and reduces opportunistic behavior, and therefore enhances the potential benefits of strategic outsourcing.

According to Hanley and Benton (2009) strategic evaluation has significant positive effect on relationship management. According to them, by creating the relationship as a partnership with tightly integrated incentives and goals can diminish inherent strategic risks of outsourcing, such as shirking and opportunism. They divide relationship management to two facets, relationship commitment and cooperation, even though they address that commitment and cooperation act in a complementary manner. Relationship commitment is the level where the outsourcing firm feels obligated to the maintenance and development of a stable relationship with the supplier or vendor. Whereas, cooperation is the extent to which the outsourcing firm works with the supplier to maintain the relationship. For example, maintain the flexibility, plan collaboratively and work through together problems when they arise. Cooperative experience represents those ties, direct and indirect, that is formed with specialized firms from intermediate markets and effective cooperation demands usually investments in relationship specific procedures, processes and technologies (Dryer & Singh 1998).
3 OUTSOURCING DECISION

The purpose of this chapter is to consider the principal factors listed in literature, which are associated with the decision to outsource. First the typical motivators for outsourcing, such as risks and benefits of outsourcing are presented. Second the different factors that have an impact on outsourcing decision are discussed. The aim is to create knowledge the typical elements of the outsourcing decision and show where the motivators and factors are typically encountered in such decisions, and how they affect to the outsourcing process.

3.1 Risks and benefits of outsourcing

In the literature, many potential benefits of outsourcing have been identified. Improved financial performance (cost benefits) and various performance effects, such as an additional focus on core-competencies are the most often discussed (Gilley & Rasheed 2000: 765; Hätönen & Eriksson 2009: 146-149). The main drivers for outsourcing appear to be shifting from cost benefits to strategic issues, such as core competence and flexibility (Quinn 1999; Kremic et al. 2006; Holcomb & Hitt 2007). The expected benefits may include the lower overall cost by doing the same or better service, increased quality and flexibility and access to the latest technology.

Inherently related to the theoretical heritage of transaction cost theory, the cost advantages are the most common investigated and presented drivers for outsourcing decision (Kakadabse & Kakadanse 2000; Hätönen & Eriksson 2009; Lacity et al. 2011). In their research review, Kremic et al. (2006) even claim that in many cases, the desire to save costs act as an explanation for why outsourcing occurs. Firms that outsource achieve often cost advantages relative to vertically integrated firms (Quinn 1999; Lei & Hitt 1995; Gilley & Rasheed 2000).

Through outsourcing companies can decline their manufacturing costs and investments in plants, equipment and skilled labor can be reduced (Gilley & Rasheed 2000; Kakadabse & Kakadabse 2005). For example, selling assets to an outsourcing vendor can turn company’s fixed costs into variable costs (Kakabodse & Kakabadse
Focusing on fewer and manageable activities, organizations can decrease the costs and complexity of their own operations. Especially in the short run, outsourcing may be an attractive method of improving company’s financial performance (e.g. Gilley & Rasheed 2000; Fill & Visser 2000; Kremic et al. 2006; Dekkers 2011). A desire to save indirect costs may also drive outsourcing. For example, having fewer employees requires fewer investments in infrastructure and support systems. This reduction in coordination costs require an “unbundling” of functions rather than maintain in-house ownership (Kakabadse & Kakanadse 2000).

Although cost savings might be the main driver to outsource, there are no guarantees that expected savings will be realized (e.g. Fill & Visser 2000; Kremic et al. 2006). Sometimes companies overestimate the benefits from outsourcing or in contrast underestimate the transaction costs (Gilley & Rasheed 2000; Hätönen & Eriksson 2009; Dekkers 2011). Outsourcing causes always some coordination costs because the customer needs to monitor the service provider, at least in some level (Greenberg et al. 2008). Besides, outsourcing may occur in increased indirect and social costs. Indirect costs can evolve for example through transition costs, contract monitoring and oversight and contract generation and procurement (Kremic et al. 2006). Furthermore, social costs may be difficult to quantify, but sometimes outsourcing can result in lower productivity or high absenteeism (Kakabadse & Kakabadse 2000). Expenses related to the outsourcing relationship should be also calculated (Logan 2000; Kakabadse & Kakabadse 2000).

Outsourcing can create other advantages as well. For example, outsourcing can provide companies with greater capacity for flexibility when firms focusing on outsourcing can switch supplier as new, more cost effective technologies becomes available (Quinn & Hilmer 1994; Greaver 1999; 4-5; Harland et al. 2005). In contrast, internal production increases always a commitment to a specific type of technology and knowledge (Gilley & Rasheed 2000) and may restrict flexibility in the long run. Slightly consistent with that, today, increasingly critical and knowledge-intensive business components are outsourced, and often developed in close cooperation with the vendor (e.g. Holcomb & Hitt 2007; Hätönen & Eriksson 2009; Logan 2010).
There are a number of ways in which dependency can emerge in outsourcing relationships, for example outsourcing into a limited supply market (Quinn & Hilmer 1994; Lonsdale 1999), contractual incompetence (Logan 2000; Kakabadse & Kakabadse 2000) and poor internal alignment (Dekkers 2002). The more unique the resources and capabilities are, the more the buyer will become dependent on that supplier (Dekkers 2011).

Mistakes in identifying core and non-core activities can lead companies to accidently outsource their competitive advantages (Quinn & Hilmer 1994; Harland et al. 2005; Kremic et al. 2006). For example, applying the traditional core competence tests in highly developed and integrated technologies may result in outsourcing too many of the wrong functions (Quinn & Hilmer 1994). Literature also suggests that there is risk for losing internal synergies, especially when outsourcing functions in industries with complex technologies and systems. That could result in less efficiency and productivity among the remaining functions. (Kremic et al. 2006; Hätönen & Eriksson 2009). Also, the constantly changing competitive environment can cause that what is core today may not be it tomorrow (Harland et al. 2005). For example, Wu and Park (2009) show in their study that inward-looking core-competence view that rely on keeping “core” activities inside, can result in a discrepancy of company’s capability and competitive priorities. Moreover, some scholars’ state out that at least in some level, the outsourcing decision is irreversible (e.g. Quinn & Hilmer 1994: Greaver 1999) but it is evident, that once organizational competence is lost, it is difficult to rebuild (Harland et al. 2005).

Loss of control is one of the most highlighted risks in outsourcing decisions. For example, Dekkers (2011) found out that while cost acted as a main driver in outsourcing decision in manufacturing firms, the erratic decision making resulted in loss of control over the outsourced activities. These results are consistent with Lonsdale’s suggestions (1999) that some outsourcing failures occur because of the lack of guiding methodology for manager, not due to the inborn problems of outsourcing. It is evident, that literature of outsourcing is rich in terms of the possible risks and benefits, and strategic issues of outsourcing, yet it is lacking in terms of guidelines, decision support and management tools for outsourcing decision and
implementation. (Kremic et al. 2006; Häitönen & Eriksson 2009; Dekkers 2011; Lacity et al. 2011)

Kakabadse and Kakabadse (2000) claim that perhaps the greatest advantage of outsourcing is the full utilization of external suppliers' investments, innovations, and specialized professional capabilities than otherwise would have been difficult and expensive to replicate. However, outsourcing can lead in some cases to a loss of research and development competitiveness (Hoecht & Trott 2006; Mahmoodzahel et al. 2009) because it is often used a substitute for innovation (Gilley & Rasheed 2000). Due to that, firms that outsource are likely to lose touch with new technologies that might offer opportunities for product and process innovations. There are also concerns of organizational learning and knowledge creation. If company outsources “the wrong” function they might accidently develop gaps in their knowledge and learning base which may prevent them from future opportunities (Prahald & Hamel, 1990). For example Lei and Hitt (1995) show that competitive disadvantages for virtual organizations include a reduced ability to learn.

Outsourcing may also reduce the organization’s risk by sharing it with suppliers. This partnership between the outsourcer and supplier may benefit in the organization’s competitive advantage and enable the organization to be a world-class performer by itself (Kremic et al. 2006). This strategy is also described as a so called “virtual organization”, where functions are outsourced to multiple vendors.

According to their research review, Harland et al. (2005) suggest that the most remarkable risks in outsourcing decision lie in the need to develop whole new decision-making process and new management of competencies and capabilities. These include decisions on which activities should outsourced and which should remain within the organization, but also decisions whether the all or part of the activity should be outsourced. Final question is how to manage relationships rather than internal functions or processes.

It is impossible to list exhaustively every conceivable benefit or risk of outsourcing, but many of these listed things above, are general enough that they are shared across industries. Table 1 collects risks and benefits together.
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3.2 Factors of the outsourcing decision

In addition to possible risks and drivers of outsourcing, there are also discussions of factors which may impact to outsourcing decisions. Factors of outsourcing decision evaluates the organization’s functions for possible outsourcing and help organizations to select the ones (if any) to outsource. As stated earlier, one of the most remarkable risks in outsourcing decision lie in the decision-making process and company’s capability to identify which activities to outsource and which activities not (Harland et al. 2005). Moreover, evaluation of an outsourcing decision is simultaneously reflected by firm’s evaluation from a capability perspective and from a risk perspective, which supports the combination of resource-based view and transaction cost theory above (Holcomb & Hitt 2007; Handley & Benton 2009). Capability evaluation contains the evaluation of the strategic value of the capabilities and resources associated with the business activity to be outsourced. Strategic risk assessment, in the other hand, represents the degree to which the company evaluates the multitude of strategic risk associated with outsourcing.

Fill and Visser (2000), claim that the outsourcing decision cannot be evaluated through cost and strategy alone. It is important to consider the internal and external environment within which an organization operates. According to them, the decision of what to outsource culminates with those elements that differentiate the organization from others, especially in the areas of value and quality. These are the contextual factors represented by an organization’s particular internal and external conditions. By using these key aspects they propose a composite outsourcing decision framework (CODF) to depict the complexity of the issues that affect the decision to outsource. From this review of the factors driving and influencing outsourcing decisions, they found three following aspects:

1) The contextual factors represented by an organization’s particular internal and external conditions,

2) The strategic and structural aspects associated with an organization’s decision to reconfigure and,
3) The costs associated with the activity under review.

In their research review Kremic et al. (2006) groups these factors into four categories, strategy, cost, function characteristics, and environment.

Figure 8 (Kremic et al. 2006), represents typical elements of the outsourcing decision. In the picture, elements of outsourcing decision are set to depict normal encounter of phases in such decisions. Motivation for outsourcing is evaluated by the possible risks and benefits of outsourcing, and the sum amount of those attributes finally guides the decision to outsource or not. However, no matter how desirable outsourcing might seem, the decision should be evaluated through more firm-specific attributes (Kremic et al. 2006). Through these factor’s listed above, firms evaluate which functions are possible for outsourcing.

Figure 8. Outsourcing Decision Framework. Adapted from Kremic et al. (2006)

3.2.1 Cost

There is some literature suggesting that the decision to outsource is primarily motivated by the possible cost savings (Harland et al 2005; Kremic et al. 2006). When the function is to be outsourced for cost reasons, then it is assumed that the
production in-house would be more expensive than the expected costs for purchasing the service (Kremic et al. 2006). Contrariwise, it is assumed that the outsourced function is less costly when it is purchased from external providers.

Increased number of suppliers and agreements can of course result in an additional layer of overhead costs, but the explanation for expected benefits are largely based on specialization and economics of scale. Scale economics emerge when company use more focused and larger-scale specialists for activities it cannot produce in-house. However, economics of scale can normally be obtained through standardized products and with a high degree of customization these production costs may not be so easily reduced (Fill & Visser 2000). In the other hand, small specialist suppliers may offer greater responsiveness and access to new technologies, which the outsourcer lacked the necessary volume or know-how for current technology (Quinn & Hilmer 1994). A network of suppliers have diminished the need for the vertically integrated organization and helped achieve economies of scale (Kakabadse & Kakabadse 2000). Scope economics, in turn, would be gained through exploiting a wider range of services, provided by niche specialists (Harland et al. 2005).

3.2.2 Strategic factors

Strategic factors which have an impact on outsourcing decision are core competence, quality impact and flexibility (Kremic et al. 2006).

As stated earlier, core-competence based thinking (Prahalad and Hamel 1990) raises the key issue on which areas a company should concentrate to balance their make-or-buy decisions (Gilley & Rasheed 2000). There are a difficulties in literature to define what is core and how “close to core” outsourcing should be (Prahald & Hamel 1990; Quinn 1999; Kakabadse & Kakabadse 2000; Dekkers 2011). Quinn determines “core” to be “those activities”—usually intellectual based service activities or systems—that the company performs better than any other enterprise” (Quinn, 1999). Therefore, a function that is more “core” to the organization is less likely to be outsourced when comparing it to un-core functions (Kremic et al. 2006).
However, Kakadbase & Kakadabse (2000) argued that it is an academic debate to distinguish between “what is core and what is peripheral”. According to them, outsourcing decisions should be driven by the contractual and informal relationships between the purchaser and supplier, by the nature of the outsourcing contracts. This didn’t go unnoticed with Kremic et al. (2006), and with their impact factors they detected different relational and functional differences between outsourced functions. However, these weren’t listed as strategic factors.

Weimer and Seuring (2008) suggest that “quality control” is the most important information needed to govern and to control the external provider in the operation phase. The impact of quality is important especially, when the organization is recognized in the industry for a high level of quality, there might arise some concerns by decision makers or customers, that outsourcing the function could harm the quality. In the other hand, according to the resource-based view and core-competence based thinking outsourcing the function may be seen as a potential improvement of the quality level. Therefore, quality is a relevant factor that can be either a positive or negative impact on outsourcing decision (Kremic et al. 2006).

Flexibility is the last factor identified in the strategic category. Flexibility in here is described to include operational flexibility, resource flexibility or demand flexibility. It can also be intended to include number of other strategic elements. Likewise quality, flexibility can also be regarded as a relevant factor that can be either a positive or negative impact on outsourcing decision (Kremic et al. 2006). For example some scholars claim (Kakadabse & Kakadabse 2005; Lacity et al. 2011) that outsourcing is regarded as a strategic toll that allows firm to concentrate to their own core competencies and simultaneously build flexible capabilities by using external markets.

Based on previous, in addition to cost related reasons, outsourcing decision should be evaluated through strategic implications. However, no matter how desirable outsourcing might seem in paper, the decision should be evaluated through more function-specific attributes. According to Kremic et al. (2006) some function characteristics, such as complexity, degree of integration and structure are generally not unique to an organization, unlike the strategy and cost factors. However, these
characteristics act in a major role when evaluating the questions, whether or not to outsource and how it should be conducted.

3.2.3 Function characteristics

Some functions are inclined to outsource more easily than others and it is usually relates to the function characteristics (Dekkers 2002, Kremic et al. 2006). Typical functions characteristics represent in outsourcing literature are asset specificity and complexity and the structure of a function.

Specific assets are the principal factor giving rise to transaction costs (Grover & Malthora 2003, Greenberg et al. 2008), mainly because they are usually costly to redeploy to alternative uses. That can happen for example if the assets are highly specific and tied for certain production process of parts of it. That might include investments in facilities, equipment, personnel, and training associated with the production of goods and services (Grover & Malthora 2003).

Franceschini et al. (2003: 250) use meanings of complexity and specificity of outsourced processes to analyze the actual relationship between the “outsourcer” and “outsourced”. Specificity refers to the level of reutilization of the considered goods/processes for many different uses. “Specificity” can depend on physical location or unique skills in terms of resources and techniques. Outsourcing relationships of processes that need specific assets can cause hidden costs. Specific assets are the principal factor giving rise to transaction costs, and under these conditions outsourcing can lead companies’ to be “locked-in” with one or two specific supplier (Lacity & Willcocks 1998; Dekkers 2002; Holcomb & Hitt 2007; Greenberg et al. 2008). That is why transaction cost theory guides organizations to outsource into markets where the transaction has low asset specificity.

“Complexity” refers to the difficulty of monitoring and defining contract terms and conditions of the outsourcing process (Franceschini et al. 2003). If company chooses to turn to external provider, complexity becomes an issue when parties negotiate the service agreement (Logan 2000, Holcomb & Hitt 2007). The outsourcing is a purchasing of a service, and it is important that both the outsourcer and supplier
know what is to be delivered and under what terms. For complex functions, it may be more difficult to articulate the requirements and terms for the contract, and it can also require a greater investment by a supplier to learn to perform complex functions. (Kremic et al. 2006).

Also service complexity can be causing high switching costs to outsourcing company. For example, Barhaland and Quelin (2006) found out that outsourcing near-core activities can cause a higher vendor switching costs. Being “locked-in” can result with internal investments of specific assets, and in other words, to increased internalization (Holcomb & Hitt 2007) However, in some cases function characteristics can increase the likelihood a firm will pursue strategic outsourcing. Producing specific assets internal can turn out to be difficult or even impossible, and those situations increase the likelihood a firm will pursue strategic outsourcing.

In the other hand, some functions are as a rule easier outsourced than others. According to Kremic et al. (2006) the more complex function is the less of a candidate it is for outsourcing, therefore the simpler the function is more likely it will be outsourced. As stated earlier, originally outsourcing was considered to concentrate only non-core activities (Prahalad and Hamel, 1990; Quinn and Hilmer, 1994; Lonsdale 1999). Especially in early-stage outsourcing literature, the most often mentioned functions “suitable” for outsourcing have been a non-core or supportive activities, such as facility-maintenance or janitorial services. Also the structure of a function impacts the decision to outsource it (McIvor 2003). The more structured a function it is more likely to be outsourced because it is easier to perform and will not need complicated instructions to use. For example, high technological uncertainty may serve as a disincentive to internalize, because it often requires bigger investments and greater resource commitments (Holcomb & Hitt 2007).

3.2.4 Environment

The final category of factors in a Kremic et al. (2006) list relate to the internal and external environment faced by the organization. According to Fill and Visser (2000), it is important to consider the internal and external environment within which an organization operates when deciding whether to outsource or not.
Sometimes there may be only a few if any outside supplier possessing needed skills, especially for organizations with unique missions and specialized skills. Situations of small numbers of bargaining can create market inefficiencies as well and it affects the distribution of bargaining power in outsourcing relationships and increases the likelihood of opportunistic behavior. Bargaining power here is defined as the ability to influence the outcomes of negotiated relations (Logan 2000), and firms with high bargaining power can achieve more favorable outcomes. Companies, with a high bargaining power have an ability to influence the negotiating of relationships and achieve more favorable outcomes. For example, according to Holcomb and Hitt (2007), when the degree of competitiveness is low, specialist firms acting opportunistically and may be less willing to cooperate, transaction costs will increase and the likelihood to pursue outsourcing stays low.

The degree of uncertainty is the last factor related in the environment impact of outsourcing decision (Kremic et al. 2006). The degree of uncertainty can manifest itself with several ways. If the environment of outsourcing function is a highly uncertain it may be difficult to assess the requirements or costs associated to outsourced function. That may result with the supplier’s difficulty to assess the relevant price of the performance. And by the same token, greater uncertainty may also make it more difficult to define the requirements and expectations of outsourcing performance. (Kremic et al. 2006).

Uncertainty can produce difficulties also through communication problems, differing cultures and diverse legal issues (Greenberg et al. 2008). However, even cooperative relationships are sometimes described by significant levels of uncertainty (Handley & Benton 2012). This situation is resulting from intermediate markets, where high density of specialized firms increase the competition among them and by that, increase their willingness to collaborate and it is more likely that strategic outsourcing will emerge. However, large amount of suppliers can pose the larger information deficits, making it costly to handle exchanges through intermediate markets to prevent opportunism. (Holcomb & Hitt 2007).

Despite that Kremic et al. (2006) work is based on research review and not on empirical investigation, their framework is more an advocate for headway of
outsourcing decision than a strategic tool for evaluating the elements in it. Since outsourcing decisions can involve strategic, tactical and operational implications (Wu & Park 2009), purely strategic approaches might indicate to be inadequate in describing outsourcing’s slightly practical nature.
4 DECISION-MAKING CHARACTERISTICS IN THE OUTSOURCING PROCESS

This chapter summarizes the whole theoretical discussion of the research phenomenon, i.e. the outsourcing decision and the outsourcing process. Based on the theories discussed earlier, the essentials of those theories are drawn together as a theoretical framework. The theoretical framework combines all the components discussed previously to a timeline which depicts the progression of an outsourcing decision through outsourcing process and shows where the motivators and factors are typically encountered in such decisions.

This tentative model makes a distinction between the tactical and strategic level of an outsourcing decision, but these levels do not, however, act separately in the course of decision making. Instead, in every decision making path, there are aspects of both strategic and tactical level which influence the final outcome of the outsourcing decision. According to the literature, a definition of firm’s boundaries and organizational strategy culminates in the make-or-buy-decision, which implies that the decision of whether to make-or-buy is always strategic to some extent (Prahalad and Hamel 1990; Quinn and Hilmer 1994; Lonsdale 1999; Kakadabse & Kakadabse 2000). Nevertheless, the motivation to outsource can be both strategic and tactical.

4.1.1 Outsourcing process continuum

Outsourcing process is depicted in the model as a continuum which circles around the decision-making model. This step-by-step model follows the Zeng’s (2003) five-stage model of outsourcing process. The first stage is the investigation and tendering, in which the organization should identify the non-core and core activities and analyze the possible scope of the outsourcing, as well as the risks and benefits in it. The second stage is the evaluation where specific supplier selection criteria are developed to identify the list of appropriate suppliers. The sourcing strategy is also designed and cost models are finalized in this stage. In the third stage final suppliers are selected and the negotiation of an agreement is made. Different technical assessments of selected suppliers need to be identified due to the possible adaptations and further cost savings. The process implementation schedule and timelines are also
fixed in this stage. The fourth stage is implementation, in which a performance analysis should be put in place and finally, in the fifth stage, the supplier’s performance is monitored and possibilities for continuous improvements evaluated.

After analyzing the results from the performance measurement, the company should return to the decision make-or-buy. For example, which actions should be done if the supplier’s performance turns out to be inadequate? Some researchers claim that outsourcing decision is somewhat irreversible (Harland et al. 2005). However, according to research review in this study, outsourcing is considered to be very function-specific and can occur in different activity levels (Greaver 1999; Fill and Visser 2000; Sanders et al. 2007) Therefore outsourcing suppliers are usually replaceable, or in extreme situation, the outsourced task or function can be insourced back to the custody of the outsourcing company (Greaver 1999).

The focus of this research is the outsourcing decision itself, rather than the actual management of the outsourcing effort. However, performing a comprehensive evaluation of an outsourcing occasion not only simplifies the outsourcing decision, but also creates a clear understanding of the risk and coordination implications of outsourcing (Handley & Benton 2009).

### 4.1.2 Determinants of the outsourcing decision

This research follows Handley and Benton’s (2009) model of critical elements of outsourcing process. According to them, the outsourcing decision is the groundwork of firm’s capability base and of a risk perspective which are depicted in the middle of the theoretical frame. Capability base contains the evaluation of the capabilities and resources associated with the business activity to be outsourced and a risk assessment represents the degree to which the company evaluates the multitude of strategic risk associated with outsourcing. Strategic risk assessment in this research contains the decision to make or buy, as well as the expected risks and benefits of outsourcing activities. Moreover, the purpose of the strategic risk assessment is to identify how critical the outsourced processes are in the organization. However, as mentioned before, the decision should be evaluated also through function-specific attributes.
Capability evaluation takes a more operational perspective to the outsourcing decision, including the factors which help organization to evaluate its functions for possible outsourcing. According to Kremic et al. (2006), some function characteristics, such as complexity, degree of integration and structure, are generally not unique to an organization, unlike the strategy and cost factors. Furthermore, the decision to outsource a function or process should be evaluated individually, to depict its implications to other functions and to the entire production. These characteristics play a major role when evaluating the questions, *whether to outsource or not* and *how it should be conducted*. For the capability evaluation this framework follows the list made by Kremic et al. (2006) of factors that have an impact on the outsourcing decision. These factors are cost, strategic factors, function characteristics and environment, and they contain both general and organization specific information of outsourcing implications, though the focus is more on the impact that the outsourcing has on an individual function, process or task. These determinants of the outsourcing decision are in the centre of this research. Understanding the characteristics of different factors that affect the outsourcing decision plays an important role when seeking the answer to *what is outsourced* and *why*. Summation of these factors reviews the criticality of the outsourced function and therefore affects the form of the appropriate outsourcing engagement.

The determinants of the outsourcing decision are presented threefold in the model. First, the strategic question of make-or-buy is evaluated by comparing the drivers and risks of outsourcing. Second, the factors that impact on the outsourcing decision are evaluated. After that, the outsourcing process elements are used to dictate the appropriate level of the contractual completeness and relationship management.

4.1.3 Outsourcing scope

In the end, the level of outsourcing is determined by the level of the decision making criteria. It also discloses the question *how outsourcing is done*. When the outsourced function is connected with more daily-basis problem solving and with practical and simpler know-how, it would be more likely to be outsourced as a short-term, transactional activity. However, when the outsourced function is considered as critical to the organization and when it contains complex and specific characteristics
and requires a lot of know-how or specialized skills to conduct, it is more likely to be outsourced in a strategic level.

This tentative model (Figure 9) combines all the components discussed previously to a timeline which depicts the progression of an outsourcing decision through outsourcing process and shows where the motivators and factors are typically encountered in such decisions.

![Figure 9. The process of outsourcing decision-making](image-url)
5 MINING INDUSTRY

This chapter details the industry context of the study and its links to the outsourcing theory and practice. First sub-chapter presents the general information of mining and mining industry is discussed and after that, mining industry in Finland is discussed further. In the end of this chapter, the application of outsourcing in mining industry is presented and some previous studies introduced.

5.1 General definition of mining and mining industry

According to Finnish national minerals strategy (2010), the success of a new mining operation requires both adequate mineable reserves and the availability of an appropriate technology for ore processing. Future mining operations will have to be increasingly based on exploiting deposits with lower mineral concentrations.

A junior mining company is an exploration company that looks for new deposits of gold, silver, nickel or other precious minerals. These companies target properties that are believed to have significant potential for finding large mineral deposits. A senior miner generates revenue from its mining operations whereas junior miner makes profit by capitalizing new deposits. Usually junior mining companies seek and find promising properties, prove the resources, make necessity preparations (legal and financial) and try to sell the deposit to a senior mining company (Hakapää & Lappalainen 2011: 14). The empirical part of this research concentrates only on senior mining companies and their outsourcing activities.

In simple terms, mining is the removal of valuable raw materials or other geological materials from the earth and the removal of soil. According to Heavy Equipment online community (2013), mining techniques can be roughly divided into two common excavation types: open-pit mining and underground mining. Open-pit mining, or surface mining, is performed by removing surface vegetation, dirt and, if necessary, layers of bedrock in order to reach buried ore deposits. The specific type of enrichment and refinement process required may vary considerably from mine to mine. Therefore, a broad range of expertise and adaptability is needed. According to
Finnish national minerals strategy (2010), today processing technologies are also increasingly driven by the need to be more energy-efficient and environmentally compliant.

Techniques of open-pit mining include recovery of materials from an open pit in the ground and quarrying or gathering building materials from an open pit mine. Underground mining consists of digging tunnels or shafts into the earth to reach buried ore deposits. Ore, for processing, and waste rock, for disposal, are brought to the surface through the tunnels and shafts. (Särkkä & Suomela via. Hakapää & Lappalainen 2011: 24).

Even though mining is considered as a major primary industry, contemporary mining techniques are highly mechanized. The earthmoving, transportation and extraction are done with massive, specialized equipment and the operation is usually controlled by computers from the beginning to the end. Explosives are used to break up rock into manageable chunks for extraction. Underground mining is more labor intensive due to the close absence environment, but can still be highly mechanized. (Särkkä & Suomela via. Hakapää & Lappalainen, 2011: 13-25).

Mining industry differs from other industries in its competitive environment. Because the prices of the products are not exactly given in the markets, the competitive edge lies more in the production efficiency and in the nature of the ore deposit. But according to CEO from one of the case companies interviewed for this study, it is not so relevant to compare mines with each other in a competitive way, because the ore deposits are fundamentally unique and linked to the environment in which they operate. This is why it is impossible to compare one mine to another, even though they would operate with the same minerals and with the same methods.

The mine life cycle is usually described using the following steps or phases. These phases and the associated key activities are illustrated in Figure 10, and consist of the exploration and feasibility phase, the planning and construction phase, the mine operations phase and the mine closure phase. This figure illustrates the main activities of the mine life cycle. The first phase is exploration and feasibility, where activities include reconnaissance, locating mineral anomalies, discovery, sampling,
and economic feasibility decisions. The second phase is planning and construction, where activities include mine planning, environmental/social planning, closure planning, environmental and other permits, clearing, stripping, blasting and infrastructure. The scope and complexity of the works to be completed during this phase vary considerably from project to project. However, some elements are common to all mine construction projects. Undisputable, this phase requires the most of the services procured during mine life, including the biggest amount of staff and contractors. The third phase is operations, where activities include ore crushing, grinding, concentrating, waste rock, tailings and wastewater management, and progressive reclamation. The final phase is closure, where activities include site clean-up, reclamation, rehabilitation, maintenance, and environmental monitoring.

Figure 10. The mining life cycle. Adapted from Environmental Code of Practice for Metal Mines.
5.2 Finnish mining industry

The minerals sector differs from other industries in that the location of operations is dictated by geological factors. Therefore, operations cannot be relocated to countries with low-cost. Conversely, the mining industry has the potential to create long-term employment opportunities, which can be currently seen in eastern and northern Finland (Finnish national mineral’s strategy 2010).

Finland has a long tradition of mining industry, and from a European perspective Finland is one of the leading mining countries. In 2013 there were 52 mines and quarries operating in Finland and the number will keep growing. Finland’s natural resources, including gold, copper and nickel, have become lucrative as global demand for metals drives up prices. According to survey conducted by Fraser Institute (3/2013) Finland is the most attractive mining country mainly due to the strong infrastructure, political stability and transparency.

Mining activity is currently concentrated to gold, platinum group metals, base metals, diamonds and industrial minerals. More than 500 mining claims and 60 mining permits were being processed by Finnish authorities in September 2011, according to a government report (Työ ja elinkeinoministeriö 2011). Moreover, the potential to find new ores from the so called Fennoscandian shield is considered to be good. In Finland, most of the already operating mines and future ones are located in Northern Finland. Also, there are several mines already operating or in the works in the vicinity of Northern Finland, in Sweden, Norway and Russia. There has always been lack of capital in the Finnish mining industry and the state has had a great influence in it. Today, majority of the exploration and mining companies are owned by foreign companies. (Finland’s national mineral strategy 2010).

5.3 Application of outsourcing in mining industry

In mining and mineral business the worldwide usage and importance of outsourcing has grown dramatically over the last decades. According to a survey conducted by Fraser Company (2013), the mining companies worldwide will increase their
procurement spending at least 15% during the next 2 years and most of it to outsourcing business services.

The “value chain” in mining sector is made up of numerous actors who all participate in a range of activities to bring a particular product or service from extraction to production and from delivery to the final consumer (Hanlin & Hanlin 2012). The coordination of these chains is determined by the nature of chain governance. It is suggested that there are perhaps only two “core competencies” required for the mining industry financing and managing, and that all other activities could be outsourced (Stacey, Steffen & Barret 1999). For example, a mining company can outsource their exploration, mine planning, process design, process and reduction plant operations and all the supportive functions and just keep the financing and management internal. One of the interviewees told us a story about a mine, which employs only three people within the mining company: general manager, financial manager and safety manager. Everything else was outsourced to the external contractors.

A clear example of an outsourced activity in mining is subcontracting non-core functions, like cleaning, catering and security. Subcontracting has taken place both on the surface and underground mining. In the surface mining, typical non-core functions such as catering, cleaning, security, and maintenance of hostels have been subcontracted. Construction work has also been subcontracted. Traditionally certain specialized underground work has also been subcontracted, for instance, the sinking of shafts and other forms of underground construction. (Kenny & Bezuidenhout 1999). It is obvious that a mining operation does not necessarily have an on-going requirement for conducting these services in-house and therefore cannot justify these services for in-house production, because of the specialist personnel and equipment required. These kinds of services are clearly distant from the core-business of mining, and can be therefore contracted out to specialist contractors with the experience and expertise to handle such an activity safely and efficiently.

Mine sites are usually located in rural areas and isolated from big cities and economical areas. This can affect the outsourcing decision in several ways. There might be geographic dispersion with the location of service providers, which can
cause problems with availability, applicability and flexibility. For example, rapid capacity-related needs can be problematic to fulfill, if there are not enough operators nearby, for example skill-full workforce or additional transportation. However, keeping additional capacity in-house “just in case” cannot be seen as a very cost-effective arrangement (Hanlin & Hanlin 2012).

Outsourcing in mining industry is not a commonly investigated topic in academic literature, but some studies can, however, be found especially from the “old” mining locations. For example, Kenny and Bezuidenhout (1999) investigate the changing nature of subcontracting in the South African mining industry and Hanlin & Hanlin’s (2012) article represents the younger research stream within same geographical location. Their study investigates the linkages between local suppliers and the mining company in South African gold mine. Stacey et al. (1999) investigate the outsourcing of professional services in mining industry. According to them, several benefits can be assessed through outsourcing in mining industry, such as quality improvements, reduced overhead costs, substitutability of vendors, and continuity (long-term “partnering relationships). In contrast, possible risks of outsourcing in mining industry were regarded to be availability problems, confidentiality issues, unrealistic cost targets and perceived lack of accountability and commitment (supplier opportunistic behavior).

Closer to this research’s geographical location, Cristin Baptista (2013) looked into the development of the relationship between customers and suppliers of capital equipment in the mining industry in Portugal. According to her study, the inter-organizational relationships were characterized with three sets of variables: context, task characteristics and interaction process. Understanding the context, within which a buyer and seller operate allows the identification of issues that are specific to the evolvement of a particular relationship. Furthermore, she found that mine cycle-stage was one of the variables which can describe the context in a more insightful way.
6 RESEARCH DESIGN

The purpose of this chapter is to describe how this research was done. The methodology and the structure of this research were shortly submitted in the first chapter, but this chapter presents the methodology of the research in more detail and thereafter describes the empirical part of the study. First, the qualitative research method is elaborated and justified. Secondly, the case study as a research method is presented, and thirdly, the data collection and analysis method of the empirical research are discussed. Finally, at the end of this chapter the two case companies are introduced.

6.1 Research methodology

The research paradigm in this study is realism. In research paradigms, there are three guiding elements: ontology, epistemology and methodology. Ontology is the “reality” that researcher look into, epistemology is the relationship between the researcher and that reality and finally, methodology is the technique that is used to investigate the reality. According to Perry (1998: 787-788) positivism usually requires an observable phenomenon, which is not possible in this research. Realism researchers believe in turn, that there is a real world to discover. Even if it is only imperfectly understandable and more as a researcher’s own perception. Realism is more suitable for qualitative case study, when the research phenomenon is contemporary and pre-paradigmatic such as inter-organizational relationships (Healy & Perry 2000). This perspective is valid for this research since the outsourcing is understood as a set of pre-arranged activities between two or more organizations. In addition realism was chosen since it is the closest to the researcher own view of the world.

The theory building position in this research is abduction which can be described as a mix of deduction and induction (Perry 1998: 78). In deduction the starting point of research is the pre-existing theory, and in induction the starting point is the perceptions of the real life (Uusitalo, 1991: 36-37). Pure induction might impede the researcher from using existing theory, just as pure deduction might impede the development of a new and useful theory (Perry 1998, 788-791). In abduction,
Theoretical and empirical parts of the research are complementary and evolve simultaneously.

The research problem forms the foundation of the research and determines the form of the research material, and how it should be analyzed (Uusitalo 1991: 50). The research gap of the pre-existing literature shapes the research problem of this study. Besides a theoretical exploration, an empirical research is necessary due to the relative diffusion of the pre-existing literature concerning the topic. In addition, real-life inspections contribute to the aim of this research, which is to understand the phenomenon of outsourcing. There are several ways to define a qualitative research, but usually qualitative methods are used to study the research phenomenon holistically and describe and understand it profoundly (Koskinen et al. 2005: 43). This study uses qualitative research methods, since the aim of this research is to understand better the decision-making in outsourcing in the context of the mining industry, not to explain it by searching causal relations. Therefore, the qualitative research is suitable for this purpose since this research provide its reader a new and deeper way to comprehend the complex phenomenon.

6.2 Case study and the selection of cases

This research is conducted as a multiple case-study with two research cases from a specific industry. A case study is used in a research method when the aim of the research is to understand complex phenomena. Yin defines case study as follow, “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin 2003: 13). The purpose of the case study is to describing the real world phenomena, rather developing normative decision models. Therefore, the research problems addressed are more descriptive than prescriptive and the research problem is usually a “how do?” problem than a “how should” problem (Perry 1998: 787).

Case study is also a commonly used mechanism in qualitative researches, because it provides a possibility to describe the reality from the participants’ points of view.
It enables to understand the research subject in its real context (Hirsjärvi et al. 1997; Koskinen et al. 2005).

Stake (1995: 3) make a distinction between intrinsic-, instrumental- and collective case study. Intrinsic case study occurs when the “case” itself is regarded as extremely interesting and unique, and in the center of the research focus. Intrinsic case study suits well to the qualitative method, where every research object is unique (Koskinen et al. 2005) and varies from another, and it is possible to describe same things with many different ways. Instrumental case study, instead, takes place when the “case” of the study is regarded as a tool to understand the examined phenomenon. Collective case study can be seen as an extension of the instrumental case study, but with more analyzing units or another word “cases” and more comprehensive theory building and knowledge from the examined phenomenon. This kind of case study consists of multiple cases and in its essential is the parallelism and coordination between the cases. (Stake 1995: 3-4; Eriksson & Koistinen 2005: 9-10).

Case study can also be justified with an extreme and unique research case (Uusitalo 1991). According to Stake (1995), when the research case is unique and valuable as itself, the more the research should focus on describing the background and the context of the research phenomenon. This study is conducted by intrinsic case study methods to provide more information on determinants of outsourcing decision-making in mining industry. In this study, cases itself are in the centrum of the research problem, since the aim of the research is to provide information from outsourcing in the specific business environment as mining industry. Therefore the phenomenon as a whole is an important factor in this research, containing both, the theoretical knowledge of the research and the industrial context around it.

### 6.3 Selection of cases

The outsourcing research has been usually concentrated on manufacturing industries but after the phenomenon of business process outsourcing (BPO) became more common, the practical research stream has expanded to cover also IT-sector and other “white-collars”. However, despite that mining industry is one of the eldest industries in the world, it was chosen to be the case environment for this study.
are three major reasons for that: First, the mining industry covers almost all the
different phases of basic production, such as mining, ore processing and enrichment
and product distribution. Therefore, most of the activities in mining value chain are
conducted inside the mine, which is not common in other industries. Second, since
the variety of demanded services and products are broad, it provides very interesting
environment for the outsourcing research. Third, as mentioned earlier mines are
located in remote areas and the production is highly dictated by geological factors.
Therefore companies cannot always choose how to arrange their production or what
production “style” to use. This production specificity is very interesting factor and
provides an interesting approach for outsourcing research.

In case study the amount of research subjects is relatively small, usually one or two
carefully selected targets (Koskinen et al 2005: 154). According to Yin (2003), in
multiple-case study each case should serve a specific purpose within the overall aim
of the research. Also the theoretical framework should guide the selection of cases,
whereas the preliminary models serve as a basis for the criteria of the selection.

Originally, eight different mines in Barents region were contacted to request for an
interview, but only three of them responded. Eventually two of them were selected to
participate in the research due to the mine-age (production maturity), location and the
number of potential interviewees. According to Yin (2003), the analytic benefits of
having “two cases” can be substantial if comparing to using only single “case” case
study. Using two-case designs can enable direct replication between the cases, and
might give more powerful insights for analytic conclusions. Furthermore, the
contexts if the two cases are probably differ to some extent. (Yin 2003: 52-54).

6.4 Interviews

The empirical material was collected by using semi-structured theme interviews.
Theme-interviews enable to capture the interpretations of meanings of the
participants (Koskinen et al. 2005). It also permits versatility, flexibility and richness
for the interview situation, which suits well for the style of the qualitative method.
Additional materials from the case companies were collected through websites and
commercial brochures.
Since qualitative research does not aim at generalizing the results statistically (Hirsjärvi et al. 1997; Koskinen et al. 2005), consequently the main concern is not in the amount of interviews. In these cases the focus is in the quality and richness of the content they can provide. For this study, nine interviews were conducted; four interviews in each of the mining companies and one interview of the industry specialist in the University of Oulu.

Yin (2003: 90) notes that key informants are often critical to the success of the case study, the participant’s role is considered to be more “informant” than just a “respondent”. So a lot of attention should be given to the selection of interviewees. Selecting the interviewees was guided by the nature of previous research streams in the outsourcing literature which contains both, strategic and operational approach towards outsourcing. Therefore, top level managers and middle managers of the case companies were selected as interviewees. They represent the decision makers in both, strategic and operational level of the company, and are likely to have a sufficient overall picture of the firm’s outsourcing activities. The interviewed managers had several years of experience from the industry or/and from the case company.

Some of the interviews were conducted together with another researcher, who had a similar research topic; hence, the themes of the interviews and the preoccupation for the industry context were identical in both studies. Furthermore, having two interviewers enabled to take turns and breaks during interview, which turned out to be very beneficial when ensuring that all of the selected themes are covered.

Interviews were conducted at mines, except an interview of industry specialist, which was held in his office, at the university. All interviewees’ titles and the interview’s duration are listed in the end of this research (Appendix 2). The interviews were conducted face-to-face during the May 2013. First, the industry specialist was interviewed to give advices and guidelines for the forthcoming interviews of the case companies. After first interviews in the Mine 1, the unlocked structure of the interview format (Appendix 1) was evaluated and re-altered into themes. Nonetheless, it provided an adequate flexibility to alter the sequence and to preserve the natural flow of the conversation.
One of the features of theme interview is open questions, where answer alternatives are not created beforehand. Therefore, most questions were open-ended to encourage and to help the interviewees to share their knowledge. The interview situation develops through the requirements of the situation, and cannot be preliminary planned (Hirsjärvi et al. 1997). Some of the interviews were conducted in English but the interviews which were conducted in Finnish, translated later on in English for the empirical part of the study. All interviews were recorded. During the interviews, the researcher took notes and carefully inspected that all themes were covered within the conversation. After the interviews, each of them was carefully transcribed according to the recording. Each interview and case was first handled as an individual study and analyzed by using chosen theoretical guidelines. After the individual cases’ analysis the data and cases were combined. The joint analysis involved an ongoing evaluation between the theory and data, to find similarities and differences from the tentative theoretical frame and the empirical data.

6.5 Introduction of the case companies

Mine 1 is the nickel-copper-platinum group elements (PGE) mine and it is located in the Lapland region of Northern-Finland. Mine 1 is carried out in an open pit. Two different concentrates are produced; the first being a Nickel-Copper-PGE-Gold concentrate grading close to 12% nickel. The nickel content in the concentrate is expected to produce approximately 10,000 tons of nickel metal per annum. The second is a copper-PGE-gold concentrate grading close to 28% copper. The copper content in both concentrates is expected to produce approximately 17,000 tons of copper metal per annum. Mine 1 is awaiting approval from authorities on environmental assessment and application to increase the plant throughput rate from the currently approved 5.5 million tons per annum up to a maximum of 10 million tons per annum.

Mine 2 is also located in the Lapland region of northern Finland. The open pit mining was completed in 2012 and mine is now operating only underground. Ore has been mined underground since 2010. With a mine life estimated through 2037, the mine is one of the largest known gold deposits in Europe, with a gold reserve of nearly 5 million ounces. Currently, the mine employs 400 people and 180
contractors. The Mine area contains several open pit deposits and deep-lying ore is excavated from an underground mine. The mine processes 3,000 tons of ore per day, and is expected to produce approximately 150,000 ounces of gold per year and to an average of 162,000 ounces of gold per year from 2014 through 2015. The gold is separated from the ore by pressure leaching. The expansion will increase the production by 25 per cent. Table 2 depicts the key facts of case companies.

Table 2 Key facts of case companies

<table>
<thead>
<tr>
<th>MINE 1</th>
<th>MINE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>START-UP</td>
<td>2012</td>
</tr>
<tr>
<td>ESTIMATED MINE LIFE</td>
<td>2042</td>
</tr>
<tr>
<td>MINERALS</td>
<td>Cu, Pd, Ni, Pt, Au</td>
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<td>EMPLOYEES</td>
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<tr>
<td>CONTRACTORS</td>
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<td>LOCATION</td>
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</tr>
<tr>
<td>NATIONALITY</td>
<td>Canada</td>
</tr>
<tr>
<td>MINE TYPE</td>
<td>Open-pit</td>
</tr>
<tr>
<td>PRODUCTION (per annum)</td>
<td>5mlij/tonnes</td>
</tr>
</tbody>
</table>
The two case companies’ outsourcing implementations were noticeably similar. This can be explained by the main corporation’s nationality, due to the fact that both companies’ headquarter is located in Canada. However, some differences did exist between case companies. Mine 1 was clearly operating more with its own resources and for example, during the building phase, they used contractors from their sister company, which was subsidiary-like project-organization hosted by the Canadian parent company. In turn, mine 2 used consultant services to execute bigger construction projects, and for example, simultaneously with this research they were doing concentrator enlargement on the site, in cooperation with a consultant agency. These differences can be explained to some degree by the difference in the size between the case companies. Ores extracted are also different in the case companies, which causes some divergence between the operational equality. However, these differences are discussed further later in the next chapter.
7 ANALYSIS OF THE EMPIRICAL RESEARCH

This chapter details the empirical study part of this research. The first section summarizes the analysis of the outsourcing in the case companies and depicts how the general outsourcing process works in the case companies. The following sections follow the order of the tentative theoretical model, which was presented in chapter 4, and at the end of this chapter, the findings of the empirical material are recapitulated in accordance with the themes selected in the theoretical part.

Since this research is concerned with the determinants of the outsourcing decision, the main focus of this study is not only on analyzing the case companies’ outsourcing process, but to increase the overall understanding what kind of characteristics determine the outsourcing decision in the outsourcing process. However, it is important to describe the overall process, from the outsourcing initiative till the eventual format of the outsourcing venture, in order to understand the research phenomenon comprehensively.

7.1 Outsourcing in the case companies

Both of the interviewed case companies have done some outsourcing. The initial approach towards outsourcing is based on corporation business strategy. In both case companies, the overall attitude towards total outsourcing was very careful and according to some respondents, a bit conservative. The main policy is to keep core functions inside and keep the control of every service sourced. Shortly, it is to do internally as much as you can. When respondents were asked about reasons for that, everyone thought the reason must be the organizational strategy they were following.

“I think it just honestly is like a group kind of policy, that...they won’t really believe in outsourcing. And it’s been always this way…” Supply Manager, Mine 1

This study follows Sanders et al. (2007) broad specification of outsourcing, which indicates that “outsourcing involves choosing a third party or an outside supplier to perform a task, function, or process, in order to incur business-level benefits.” That is to say that in this study outsourcing means the act of transferring the work to an
external party and whether to outsource or not is the decision of whether to make or buy. This definition of outsourcing goes along with the respondents’ view of its meaning. During the interview participants were asked to define the terms: outsourcing, service procurement, sub-contracting and contracting-out, and discuss differences between them. In most of the cases these terms were considered to have similar meanings and the biggest difference between them was regarded to be the level or scope of the outsourced service. However, in this study different levels and scopes for the outsourcing ventures have been defined, so it is eligible to use the term outsourcing to cover also short-term and transaction based service procurement within this research context.

Mine 1 has outsourced their logistics services including both internal and external transportation and the services at port for export. Transportation of the mine is contracted out to a specific transportation company who is responsible for all transportation, loading, unloading, handling and other similar activities in the mine site and in the port. The transportation company is also responsible for arranging needed transport equipment and is therefore in charge of the sub-contractors in the transportation field. However, transportation is not completely outsourced since the mining company controls the transportation inside the mining site. The control and coordination of the transportation is made by the logistics coordinator.

“She controls our truck drive, she makes sure the safety stuff, she makes sure the fork lifts, she makes sure that truck won’t drive at the wrong time, she makes sure it is legal, she makes sure that all the improvements are done. So that is a success story for sure. And that’s umm… outsourced. But without the intervention of the mine, it won’t work.” Supply Manager, Mine 1

In addition to transportation, there are two other major functions outsourced in the mining fleet. The drilling input is under outsourcing custody and the outsourcing company looks after all the drills in the mine site. The maintenance and the operation of scrapper machines in mining fleet are also outsourced to an external company. Furthermore, there are several other professional services contracted out, for example waste management in the tailing facility and explosions inside the quarry. Mine 1 also uses temporarily outsourced labor and equipment for short-term shortages or special projects, but usually these contracts are only partially outsourced.
Mine 1 has also outsourced their non-core services such as laundry, catering and cleaning in the site. All of these activities are fully outsourced to an external service provider who then operates at the mining site independently. Also some supportive activities are procured from outside, such as recruiting and occupational health-care.

Overall Mine 1 operates quite independently and uses its own resources and capacity for ore production and for the mining operations. For example, during their start-up phase, most of the construction phases were conducted as an in-house operation. The demand for an external work-force and additional capacity were assured by sub-contracting temporarily local or near-by contractors and after the construction was closed, the functions were taken over by the mining company.

Mine 2 has outsourced their ore prospecting which is individually the most valuable contract with external provider. During the interviews Mine 2 was using several consulting services and companies for special projects and tasks. The most valuable agreement with a consulting company is related to the on-going brownfield operation for concentrator enlargement and the agreement was settled as EPCM contract. EPCM contract is a common form of contracting arrangement within the construction industry, and refers to engineering, procurement, and construction management. Usually in EPCM arrangements, the client, in order to involve an experienced player in large projects, selects a consulting company who manages the whole project on behalf of the client. The EPCM contractor essentially ensures that the whole project is completed as required and on time. The contract is for the provision of a total EPCM service and the consulting company will be responsible for project management, engineering and procurement and construction management. The project is an expansion of the existing operational mine. Previously, Mine 2 has used similar arrangements with other large projects such as mine site constructions during the start-up phase.

In Mine 2, non-core and supportive services such as laundry, catering and cleaning are fully outsourced to an external vendor. Recruiting, occupational health care and other supportive activities are procured outside as well. For short-term capacity and work-force deficiencies Mine 2 uses external labor and equipment.
Due to the amount of extracted ore, their need for logistics services is not that tremendous as it is in the Mine 1. However, internal logistics is partially contracted out, though the majority of internal transportation equipment were under the mining company’s ownership.

Table 2 collects the outsourced services in the case companies. In the table, outsourced services are divided into totally outsourced-, partially outsourced-, and temporarily procured services.

Table 3 Outsourcing in case companies

<table>
<thead>
<tr>
<th>TOTALLY OUTSOURCED SERVICES</th>
<th>MINE 1</th>
<th>MINE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Laundry, catering and cleaning.</td>
<td>Laundry, catering and cleaning.</td>
</tr>
<tr>
<td></td>
<td>Transportation,</td>
<td>Ore prospecting,</td>
</tr>
<tr>
<td></td>
<td>Maintenance (trucks, drills, mining equipment)</td>
<td>Oxygen plant performance</td>
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<tr>
<td></td>
<td>Waste tailing facility</td>
<td>Supportive services</td>
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<tr>
<td></td>
<td>Supportive services</td>
<td>Maintenance (partially)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PARTIALLY OUTSOURCED SERVICES</th>
<th>MINE 1</th>
<th>MINE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Consulting services for special projects or tasks, transportation,</td>
<td>Consulting services for special projects or tasks, EPCM-projects,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance (partially)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEMPORARILY PROCURED SERVICES</th>
<th>MINE 1</th>
<th>MINE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Additional work-force, equipment, contractors for sudden shortages.</td>
<td>Additional work-force, equipment, contractors for sudden shortages.</td>
</tr>
</tbody>
</table>
7.2 Determinants of the outsourcing decision: Risk assessment and capability evaluation

7.2.1 Drivers and risks of outsourcing

Earlier in this study, several different drivers and risks of outsourcing were listed. It is important to acknowledge the drivers and risks of outsourcing since the initiative to outsource is usually based on the evaluation of potential risks and benefits.

Outsourcing for cost-reasons in case companies is done usually to save money from high investments or to cut production costs. Cost was inherently listed as the most common benefit which is expected from outsourcing performance and one of the biggest drivers to carry out outsourcing. Especially when case companies were outsourcing functions that are not in the area of their expertise, cost savings were seen substantial when compared to producing the service internally. These kinds of non-core and supportive activities are catering, cleaning and laundry services. Both of the case companies outsource these services completely. Investments and the administrative expenses were assessed to be too high for expected benefits of conducting these services in-house and the cost structure encourages for full outsourcing. Nonetheless these services are crucial for the operating mine. Mine 1 had even made some calculations to insource their laundry service due to the lack of sufficient service provider, but decided to nevertheless outsource the service for an external provider.

However, cost savings through outsourcing is not a simple concept, because there might not be any guarantees that expected savings will be realized. Furthermore, outsourcing may result in increased indirect and social costs.

“I mean, first of all you pay a premium to do an outsourced, you definitely pay a premium. You might get better skills out there, but also you might not, and looking off the contracts is very difficult in the mining industry…but if we need to go outside we definitely do it. Cause we do need those skills.”

General Manager, Mine 2
Mining industry is highly production driven, which means that there are sometimes difficulties in retaining specialist staff for service functions. According to the empirical results, the capacity acts as a significant driver to carry out outsourcing in the case companies.

“Yet, you got the amount of staff and capacity out there, which are constantly on the use, and that’s it. Everything that goes beyond, have to be acquired from somewhere else, from outside or somewhere” Supply Manager, Mine 1

Capability related benefits were the leading factors when interviewees were asked to describe reasons to outsource. Furthermore, capability and competence together were regarded as more important benefits than cost savings gained from outsourcing.

“Well, first of all we don’t have capacity of our own for planning and monitoring project of this size. It would mean that we need to get lot of additional people to work here and that would cause a huge problems to us. What would we do with these people afterwards? That is why we think that company X (EPCM-partner) has those competencies to do it behalf of us.” Project Manager, Mine 2

Both of the case companies have faced similar problems with supplier capability, when the supplier capacity has turned out to be inadequate for massive operations in mining site. In some cases the mining company was forced to take over the service to assure the continuation of the operation. For example, in Mine 2 the internal transportation was originally outsourced to a local contractor, but was forced to insource back to the mine company’s custody because the provider’s capability appeared to be deficient for the task assigned. However, this inefficiency was not completely due to the contractor’s inadequate estimation of the company’s capacity adequacy. The mining company had also some problems to provide adequate calculations for the ore transportation.

“I used to have a fist rule, that I won’t do business over 50%. I mean 50% of another company’s turnover. It takes you close to the limit of their performance, and that’s one of the challenges when dealing with local providers.” CEO, Mine 2
When we discussed the outsourcing risks and pitfalls, respondents were often afraid of losing the control over their own process technologies and work standards when tasks or functions are outsourced. One of the biggest risks in mining operation lays in delays or interruptions in ore production. Therefore, the supplier capability, quality and delivery assurance ranked as the most important drivers for outsourcing decision. However, these highlighted risks were seen more clearly when assessing the possible risks of outsourcing in mining industry. The loss of control seemed to be the biggest risk in outsourcing, and was affected by the level of the outsourcing. Therefore, the level of outsourcing was kept to the level of filling the occasional demand and short-term contracts. Furthermore, most of the outsourced functions were more of individual tasks or special tasks and the control of the whole project or function was kept strictly in-house.

“But the control is totally, totally ours. We basically use a bit of labor and equipment as an outsourced, but it is not totally outsourced. We would never be able to do that, because we would lose control.” Supply Manager, Mine 1

In the case companies, several arrangements were set to prevent the loss of control. For the most part, the control was kept in-house even when the service was almost completely contracted-out, such as it was with Mine 1’s transportation. Furthermore, the issues for operational control of outsourcing guided the selection of the scope of outsourcing.

“There is two outsourced scenarios, the one we have control and it is running well, and the one we have got no control and it falls fled. It is just; you have got to have some kind of influence in that, otherwise it is not going to work.” Supply manager, Mine 1

With a high-value and critical projects, the control was assured by keeping the critical parts in-house and outsourcing only indispensable tasks of the project. For instance, in Mine 2’s ongoing enlargement project, whole new project organization was set to manage the construction project together with the EPCM-partner.

“And when we are in so called EPCM-project…I have noticed that your own organization has to be always on the scene. It’s not an option that you will hand out the whole control to outsider. Or if it is, you really have nothing to give, and by then, you are in the wrong business.” CEO, Mine 2
7.2.2 Factors of the outsourcing decision

In non-core services the outsourcing decision was regarded easy due to the distance of the core business of mining. However, what really matters varies a lot depending on the nature of the demanded service and the level of the outsourced process. In the tentative theoretical model of this research, strategic evaluation of an outsourcing decision is simultaneously reflected by the firm’s evaluation from a capability perspective and from a risk perspective. Therefore, more insight evaluation of cost, strategic factors, function characteristics and environment were made with the case companies.

a) Strategic factors

The concept of core competence differs in mining industry from other industries, since the traditional competition among other actors does not exist. However, during interviews, core competence was clearly identified in both case companies and was stated as a general rule of outsourcing decision. Although core competencies as such were not a direct question addressed to in this research, the answer was sought from each respondents in order to understand their view of organization’s performance. According to the respondents core business should be something that the organization is good at and it should be the essence of all activities. Therefore, the core business in mining was regarded to be the production of minerals competitively and economically.

“That’s the core business, you drill, you blast and you extract the material…once you start to get really fancy and buying stuff and spending on non-core activities, you are going on the wrong side and not focusing on core business of mining”. General Manager, Mine 2

It was evident that when a function is more closely related to “the core,” it is less likely to be outsourced and the management structure is rather kept completely in-house. In the interviews, all respondents were asked about which functions they would never outsource and the answers were identical for the most part. They would not outsource “the core”, or in other words, they would not give up the control “over the core”.
“Keeping the core inside” does not necessarily mean that these functions could not be outsourced at all. Both companies do outsource some processes and functions they consider as their core business, but the strategic meaning of core competence was clearly related to the control over the outsourced service. As long as the control stays in-house, the know-how and implementation of individual tasks can be brought outside the company. Obviously, the question will need to be posed at individual operations and the answers may not be the same in each case.

“This raw “doing and working” we can always adjust, but we need to have people there to assure that this external service is on that level it should be. That all outsiders are working under our rules and safety regulations, and the quality levels and other targets will obtain. So it is sort of strategic solution, I think.” CEO, Mine 2

The impact of outsourcing on the quality was considered to be a very critical factor and in some cases, quality was the biggest factor to affect the outsourcing decision. In Finland, mining industry has gained some unpleasant publicity regarding a few environmental accidents in a couple of mines and some related negative “events”. Due to that, both case companies have tightened their rules for safety, quality and environmental regulations. External service providers and sub-contractors have also been under supervision and in some cases derived changes in the suppliers.

“Biggest reason, they do not operate safe. We have got so many incidents off bad records because safety and stuff…they are causing the problems…But because it happens on our site, it goes under our name….you can’t outsource safety or environment” Logistic Coordinator, Mine 1

Overall the impact of quality was seen as a reason not to outsource, at least until the vendor fulfills the assessed requirements. Nonetheless, in line with the resource-based view, a function was sometimes outsourced to improve the service quality. For example, Mine 2 contracted out their drill sharpening activities to a specialized company after the quality was perceived to be inadequate when it was conducted as an in-house operation. In this case the actual savings were found elsewhere, since the sharpness of the drill was directly related to the quality of drilling.
The lack of internal human resources was clearly recognized in the case companies, due to the remote location of the mines and the number of staff required. In Finland in general, one of the biggest concerns related to the future of the mining industry has concentrated on the insufficient amount of skillful staff for the industry demand. Yet, so far this has not become a problem in the case companies, but it is still recognized as a future challenge.

b) Cost

Selecting suppliers only according to the criteria of low-cost did not seem to be an option in the case companies. Usually the biggest problems have occurred from the supplier’s inadequate prizing during the tendering phase. Notwithstanding, especially in specific casual tasks, which include for example mandatory laboratory tests or other significant special works, the decision to outsource was affected both by the cost and function characteristics.

“You don’t want those kinds of guys in your payroll, because you are going to pay him but they won’t have a full time job. So you outsource it and give it to specialized companies and they keep you within the raw and report you when you need to be reported and so on.” Supply Manager, Mine 1

The importance of cost savings clearly deteriorated when the outsourced service is more complex or considered to be closer to the core. Economics of scale can normally be obtained through standardized products and with a high degree of customization, these production costs may not be so easily reduced. An increased number of suppliers always generates some coordination costs and hence the outsourcing company needs to assure the quality of the delivered service. In the case companies, this has resulted in the search for more comprehensive service offers, but nonetheless, it has given rise to some control issues for the case companies.

"If you can look at the large comprehensive picture of it, that constructors can design their own internal synergies. That is the smartest payoff of that contract. On the contrary, these de-centralized cases may force you to pay only for waiting hours if something goes wrong.” CEO, Mine 2
c) Function characteristics

As listed in the theoretical part of this study, some functions are inclined to be outsourced more easily than others. This was definitely the case with non-core activities, such as catering and cleaning services. In the case companies, outsourcing is primarily used for achieving greater capacity and through that, greater flexibility when more cost effective technologies become available.

This was recognized in both case companies. For example, activities that require transaction-specific investments, such as customized maintenance or spare parts, were usually kept inside the company or searched for an alternative supplier. It is due to the fact that if transaction-specific investments are outsourced, the company becomes more locked-in to its suppliers. Flexibility was still regarded a very important strategic factor to affect outsourcing decision, since capacity supplementary was regarded as one of the most important reasons for outsourcing.

“I would not mind outsourcing to getting new technologies in to plant, to get very good metallurgists from around of world, they come in and set up a facilities and tell you what to do. And that’s great.” General Manager, Mine 2

According to the interviews, lock-in is not experienced as a primary but still rather significant factor of the outsourcing decision. This is due to the fact that only a small amount of activities with high specificity were outsourced completely in the case companies. Still, mine companies are procuring complex and specific services, especially professional services to support internal production. In some cases, the whole function was outsourced, despite the high specificity, complexity or importance for the outsourcing company. For example, Mine 1’s water tailing services or Mine 2’s oxygen plant performance were instances of this. Both of these services have a very crucial role in the production of the mines and of course, as a nature can be regarded specific with physical attributes as well as on the knowledge level.
d) Environment

The life cycle of a mine has a major impact on the outsourcing in mining industry. It is due to the altered demand for services in different stages. As mentioned earlier, during the construction phase majority of the services needed during the whole life circle are consumed. It is evident that when the life cycle turns to the operation phase, the need for different services changes. Moreover, the life cycle has a major impact on organizational learning, as the following quote reveals.

"Well, that’s how I have understood it that we want to do more by ourselves and take over the control. And of course we can do it, since we have already operate here more than a year so we know how to deal with everything”

Logistics Coordinator, Mine 1

The external environment also has an impact on the outsourcing decision. For example, small numbers of bargaining can create inefficiencies and increase the likelihood of opportunistic behavior.

The geologically guided production and the large size of the operations have induced some uncertainty with suppliers. As mentioned before, there were some tasks previously performed by subordinates, for instance internal logistics, and some individual construction works, which are now performed internally to assure the service control and the level of quality. Similar problems have arisen from the pricing, since the suppliers have had problems to assess the relevant price of the performance.

It is evident that in some situations, the decision whether to outsource or not can be dictated by the availability of a capable supplier.

“Because the needs of services vary a lot around here and you see, if we don’t have a certain ongoing projects, it is not profitable for us to keep that resource inside. Therefore that is, if we discuss purchasing and procurement strategy, that is though, extra cost, but if this resource is easily available from outside, we will definitely use it since all the utility comes for us with a long-term cost benefits. “

CEO, Mine 2
Despite the fact that, service procurement in mining industry is highly dictated by geographical and production related factors, there usually are suppliers capable of doing the work, although in some cases there are not that many of them. It was evident, that both mines have faced problems with the availability of proper service providers.

“To be sure, there are not many machine shops around or other instances which could provide equipment to us, and hence, we need to order those straight from the technology supplier since in requires a lot more than a machine or equipment. So what I am saying is, it requires a lot of planning and designing and you cannot find that kind of knowledge locally.” Project Management, Mine 2

However, this was clearly a function-specific problem, because some respondents did not see the problem at all.

“Definitely not a problem. It’s the other way round, in this economic situation there are more providers than customers. There are offerings coming daily. In these days, all companies are searching for a job”. CEO, Mine 2

Geographical distance is not, however, the only factor for supplier dependency. There are a number of ways in which dependency can emerge in outsourcing. For example, highly technology driven production can impede the availability of suppliers because the skills and knowledge required are rare or unique.

However, in mining industry, supplier capability cannot be evaluated only through skills or competencies. Therefore, in addition to supplier’s operational capability, the scale of service offering, reliability and other references also play an important role when evaluating supplier’s capability. Supplier’s capability related factors encounter especially in the situations where company is outsourcing functions that are considered critical in outsourcing company. Operating in the mining site requires different kind of knowledge from service providers and the biggest challenges lie in the capacity of vendors. Clearly, objects with low specificity can be outsourced and the economies of scale can be exploited by using external outsourcing partners, but not many suppliers are available for the interviewed companies. For example, even with the catering and cleaning services, there were not many appropriate suppliers in the market. It was evidently due to the supplier capacity, since for example local
suppliers did not necessarily have enough capacity to serve such a big client as a mine.

7.3 Governance and scope of outsourcing

Procurement departments of the case companies were considered to be more operational than strategic functions. The purchasing organizations in both of the case companies are responsible for ordering chemicals, commodities, equipment and supportive services. Contract management including tendering, negotiating and closures are somewhat in their operating field. One of the important targets of the purchasing function was considered to be preventing operational failures, for example ensuring the availability of critical commodities such as chemicals used in mineral extraction.

However, the initial need for each department’s operation-specific services and products was inherently coming from the user departments. That is due to the strike performance and quality metrics for the needed products and services. These production-related aspects were at least in some level considered to be out of the purchasing departments’ expertise. Making right decisions on the supplier selection for the critical functions was concerned to be very important in the case companies and some failures had existed previously in the selection decisions. For example, selecting suppliers with a lower-cost didn’t seem to be an option in the case companies, and furthermore, usually the biggest problems have occurred from supplier’s inadequate prizing during the tendering phase. According to one interviewee, all departments that contribute to the outsourcing decision, or will be somehow affected by it, should be involved in making the decision.

7.3.1 Contractual completeness

Dispersed purchasing activities have caused some problems especially in control management, since in some cases contracts with contractors, service-providers or suppliers were fixed only inside the user departments. Contract management plays an important role in obtaining the right quality from the outsourced services. However, in mining industry, quality assurance is often more complex a process in which
multiple departments are involved when purchasing goods or services. It was not uncommon that the purchasing department became aware of the contracts or purchases way after they had exploited. Due to that in both case companies, moving to centralized contract management has been in the pipeline. For example, Mine 1 has built up a whole new position for one employee to take over the contracts regarding departmental service procurement.

“But in the moment, it is not done properly, and hence I’ve been given the proposition to change that situation.” Supply Manager, Mine 1

As pointed out earlier, purchasing several services from a single supplier has many advantages, but in consequence it assesses some challenges when striving to achieve a decent contract level. In addition to outsourcing contracts, also service level agreements (SLAs) were used in the case companies. The purpose of service level agreements is for the vendor to be aware of the buyer’s expectations and of other service requirements for the service delivered. These agreements are the link between the specifications laid down in the contract and the delivery of the service. In essence they provide the basis for the legal framework under which the performance of the provider is measured. Moreover, service level agreements can prevent from opportunistic behavior, since both parties are aware of what is to be delivered and under which terms.

7.3.2 Relationship management

Despite that the case companies’ procurement was not particularly centralized, some common quality metrics were defined for selecting decent suppliers.

Procuring locally was an important guideline for the overall procurements in the mining company. It was clearly stated as a company policy, and one respondent described that the intention is to build up a “local mine”. Large percentage of all procurements were nevertheless sourced from outside the local market, but there was evidence that the company was actively encouraging and supporting its procurement officers to engage with local suppliers and explore the opportunities offered by local
markets. In addition to the “procuring locally” rule, reliability, capability and service level was considered as factors which prioritize the selection of outsourcing vendor.

Reliability refers that the external provider needs to understand the value system of the mining company and how to behave in the context of the mine’s culture. This was important especially with the safety requirements in the mining site. Furthermore, the existence of opportunistic behavior was listed as a risk of outsourcing venture and it was evidently related to companies’ dispersed purchasing activities. According to the respondents, disconnected goals between the parties are one of the biggest problems with relationship management. This refers to the situation in which the outsourcer and the service provider each try to optimize its own expected benefits.

“I know we have had contractors on this site who over stayed, in the end of the contract. But nobody ever got their notice, so they just kept on staying. And they just get paid every month, they just kept sending invoicing”. Buyer/Contract negotiator, Mine 1

Supplier capability was inherently the most important factor when evaluating the outsourcing vendor. Skill base is an important tool when the service is delivered, since the provider needs to have the skills now and for possible demands in future. Service level is important to be defined in the outsourcing contract. Furthermore, service level reveals also the level of the provider's service compared to the level that the organization currently enjoys or that others may provide. It is also important, for example, to assure that the provider is flexible enough to match the organization’s needs in the short term and to be able to adjust in future if the business grows substantially.

However, these factors of supplier selection vary a lot in different outsourcing situations due to the criticality and complexity of the outsourced service. It was clear that selecting capacity-base out-tasking e.g. construction work, was not given the same attention than more important production-related tasks, such as machinery operations or other special tasks got. Overall, the relationship management of the outsourcing arrangements was more concentrated on the early stages of outsourcing process, such as selection and implementation.
7.3.3 Outsourcing engagements

By using empirical results, four groups with different outsourcing engagements were defined: *Non-core function, expert services, consultant services,* and *out-tasking.*

Both of the case companies were outsourcing their non-core and supportive functions such as laundry, cleaning, waste disposal and catering services. Outsourcing these services was seen as necessary for the operations as they were quite distant from the actual know-how of the mining company but the functions were still regarded as important for the mining function. By outsourcing, companies could avoid unnecessary investments and other operational expenses together with the time and money needed for controlling and coordinating these functions.

Another exception to the group policy appeared to be functions and tasks that required certain knowledge and competencies, such as blasts on the mining fleet, drilling and exploration and water purification. These expert services represent a wide scale of different services. Reasons to turn to external provider vary a lot with the features of the outsourced function, but in this group the leading factor was the time-scale of the fulfilled operation and the special expertise it takes to carry out.

Consultancy service contracts were made occasionally, and for a specific need to complete a certain task or project. The main driver for this kind of outsourcing extend was the ongoing-business needs, for example construction management or special transport services. The nature of the contract also varies with the project assigned, from simply planning to large EPCM-projects.

Out-tasking was used in the case companies for two reasons. It was used for short-term capacity improvements, for example, for temporary construction projects and to conduct supportive ongoing tasks, such as building a fence around the mine cite.

It is evident that different engagements were selected according to the criticality of the outsourced service and to assure the internal control over the outsourced service. Therefore, criticality of the outsourcing function affects the scope of the outsourcing engagement. Out-tasking, for example, often involves assigning the supplier
responsibility for a more tactical task or function, rather than a strategic function. Moreover, these functions typically have lower criticality to the organization.

7.4 Empirical evidence and its theoretical implications

The most significant determinant of the outsourcing performance in both of the case companies was the overall strategy of the mining company that defines the initial scope of the outsourcing performance. The strategy of concentrating on core competencies and consequently outsourcing production activities was instigated by the corporate strategy. In mines, no standardized procedures or rules for outsourcing exist, and the individual needs for services were as a rule processed at the same moment as these arise. Naturally, this has caused some problems with the coordination and service management of the outsourcing venture. Furthermore, since the leading strategic guideline regarding outsourcing is “less is better”, there was no exigency to any kind of outsourcing. Inside both of case companies’ main concern, several operating mines operate in such rural conditions that inherently everything is conducted as an in-house operation, since appropriate suppliers do not exists. Therefore, operating only by using own capabilities is not an absurd option to the case companies either.

The reasons to outsource and the outsourcing benefits in the interviewed companies follow essentially the guidelines given in the literature, except cost savings which did not appear to be the most important driver for outsourcing in the case companies, which is in contradiction to some of the previous assumptions in outsourcing literature. This might result from the fact that usually cost savings arise because the specialist vendors experience allow infrastructure, technology, and personnel costs to spread among many customers (de Boer et al. 2006), which generates the economics of scale, but in mining industry services are usually more specific and tailored for the production features. Slightly consistent with Dekkers’ (2011) results, the loss of control seemed to be the biggest risk in outsourcing decisions which is recognized also in the literature where the loss of control is one of the risks most often cited in outsourcing, and it has been claimed to be the biggest reason for outsourcing failures (e.g. Lonsdale 1999). In the case companies, the risk of losing control arose especially when outsourcing the functions closer to the core.
To sum up the empirical findings, geographical distance is evidently one of the reasons for the case companies’ low outsourcing level, since it has a clear link to the availability of “certain kind of suppliers” and thus, supplier capability was regarded to be one of the most important factors affecting the outsourcing decision. The theoretical premise of the resource-based view and core competence is still valid since all the respondents see the importance of keeping their core activities in-house. Mostly, these kinds of activities have not been totally outsourced and are not planned to be outsourced in future. This is also consistent with the literature review of this study. However, keeping the core inside was regarded to be more related to the control over the outsourced services in the case companies.

“We do have certain knowledge here inside, but it is not beneficial for us to inflate this organization for a certain project. Thus our strategy is, well I have had this motto in myself already twenty years, that when we start a new project, we will take external resources in, but, we have our own organization always around.” CEO, Mine 2

“Procuring locally” was concerned to be one purchasing criterion for both case companies, but locality, however, did not go beyond cost, quality, and performance specific requirements of purchasing. However, there was no clear cut definition of what conforms to local procurement. If, for example, spare parts are procured from local dealerships of large multinational plant suppliers it was counted as a local procurement – even though this means little additional value for local providers.

Fill and Visser suggest (2000) that when evaluating outsourcing decisions it is important to consider the internal and external environment within which an organization operates. According to them, the decision of what to outsource culminates with those elements that differentiate the organization from others, especially in the fields of value and quality. These are the contextual factors represented by the particular internal and external conditions of an organization. Because of the geographical location of the mines, outsourcing in mining industry is driven by two contextual factors: capacity-based factors and production factors. This supports the tentative model of this research which makes a distinction between the strategic and tactical level of outsourcing decision.
According to the empirical analyses, *capacity-based factors* was evident in outsourcing decision since capacity supplementary was regarded as the most important reason to outsource in both of the case companies. Consistent with that, the availability of skillful labor was also mentioned to be one of the reasons to outsource. And it is possible to see outsourcing in mining industry as gaining certain intellectual property or technology, to which the company would not otherwise have access. These kinds of benefits can be gained by getting into wider range of services, which are provided by niche players. However, an increased number of suppliers always generates some coordination costs, and hence the outsourcing company needs to assure the quality of the delivered service. In the case companies, this has resulted in the search for more comprehensive service offers. Nonetheless, it has given rise to some control issues for the case companies.

Both Mine 1 and Mine 2 were aware of the risks related to having only one supplier or a limited number of suppliers. For example in Mine 2, procurement department has started to switch all of the equipment suppliers to the ones who use standard spare parts and replacements parts to protect company from dependence on one component provider. In both case companies’ dependence on one supplier was recognized as a risk, and to prevent that, product-adaptation between the buyer and supplier did not commonly exist. Furthermore, in general, long-term contractual arrangements were highly avoided and all agreements between the parties were short-term, even though with cooperation these parties tried to entail a long-term orientation benefits. Therefore, so called partnering or strategic partnering did not commonly exist, which is consistent with Baptista (2013). Even though her study did not deal with the outsourcing activity itself, her findings are consistent with both outsourcing literature and empirical data used in this study.

*Production factors* contain the specific requirements for the outsourced function which in most cases can be described as high specificity and complexity of the demanded services. Transaction cost theory implies that if particular skills or services have high specificity, then these activities must be kept inside the company. If activities that require transaction-specific investments are outsourced, the company becomes more locked-in to its supplier, and the transaction costs become higher. Nonetheless, resource-based view indicates that the main reason for outsourcing is to
gain access to resources not available internally. Therefore, high specific assets can have either positive or negative impact on outsourcing decision (Kremic et al. 2006). For example, Holcomb & Hitt (2006) suggest that when both high asset specificity and high service complexity exist, firms are usually pursuing strategic outsourcing.

In the case companies, high technological processes were sometimes kept fully inside to prevent the coordination problems and to assure the production quality. However, the empirical source of data shows that in the case companies, high technological uncertainty may serve as a disincentive to internalize, because it often requires bigger investments and greater resource commitments. These conditions may encourage companies to outsource in order to reduce their investments, prevent “lock-ins” to certain technology and improve their flexibility and predictability. Examples of this would be Mine 2’s ore prospecting and Mine 1’s water tailing. This is consistent with Holcomb and Hitt’s (2007) arguments that technological uncertainty affects the company’s decision to obtain strategic outsourcing in a non-linear manner.

In general, mining industry has been claimed to be built organizations around functional silos and to have difficulties efficiently managing processes through the value chain (e.g. Deloitte mining 2010). This was also evident in the case companies, as they have had some problems due to the decentralized outsourcing activities. To prevent this lack of clarity with the sub-contractors and other external service providers, Mine 1 has started a whole new project to centralize contract processing in the organization.

Outsourcing engagements and their scope was slightly consistent with Sanders et al.’s (2007) findings. However, despite the degree of criticality often corresponds to the task scope, this is not always the case in mining industry. As mentioned before, the contextual factors also guide the outsourcing decision, not just cost and strategy alone. It is certainly possible to fully outsource a function or process with little critical importance, but it is also possible to outsource one highly critical task as in the out-tasking engagement.
7.5 Empirically grounded model

According to the empirical analysis, outsourcing in mining industry is driven by two contextual factors: capacity-based factors and production factors, which supports the tentative model of this research that makes a distinction between strategic and tactical level of outsourcing decision. In this resilient distinction, production related decisions occur more often in the strategic level of outsourcing decision and capacity-based outsourcing decisions in the tactical level. Based on these conclusions of the empirical analysis, there arose two major findings in this research which modify the theoretical framework of this study. These two thematic extents of outsourcing governances were identified to be criticality and supplier capability.

The first extent was recognized to be the criticality of the outsourced task to the outsourcing company. Criticality in this case is the level that the outsourced service deploys against the actual core-business of the outsourcing company. For example, outsourcing non-core functions, such as laundry, catering or cleaning was not seen as a strategically significant decision and therefore those decisions did not require significant decision making evaluation. In this study, the criticality of a function is evaluated through asset specificity, high complexity, and a small number of bargaining and a high level of uncertainty. Consequently, these attributes are somewhat strategic decisions since the criticality clearly affected the level or scope of the outsourcing arrangement, which was evidently driven by the need for operational control. For example simple out-tasking contracts were considered to require more control and coordination than larger-scope consultant services. Therefore, the selection of an outsourcing engagement in mining industry is clearly related to the need for coordination over the outsourced process. These findings are identical with the ones of Sanders et al. (2007) who identify the scope and criticality of the outsourced services to be the most significant discriminating factors of different outsourcing engagements. It is also consistent with Melvor’s (2003) findings, in that the control of outsourcing is related to the internal organizational structure.

It appears to be the case, that outsourcing decision is somewhat guided by supplier skills and offerings. The interviewed companies perceive the suppliers’ capability to
be inadequate which was resulting due to the fact that the quality of the suppliers is not high enough or there were not enough suppliers available. Because the amount of suppliers is always somewhat scarce in the mining environment (Baptista 2013), the decision whether to outsource or not can be dictated by the availability of a capable supplier.

Supplier reliability, flexibility, service level and personnel policy were found to be important factors that prioritize the selection of the outsourcing vendor. Reliability is important, since the external provider needs to understand the value system of the mining company and know how to behave in the context of the mine’s culture. Also the existence of opportunistic behavior was listed as a risk of outsourcing venture. Moreover, the provider needs to be flexible enough to match the organization’s needs in the short term and to be able to adjust in future if the business grows substantially or declines. Service level contains the skill base and the offering breadth of the supplier. In most situations, both case companies were more interested in procuring wider scale service packages, because it reduces their costs of coordination and control. Especially with Mine 2, which worked with several large on-going projects of expansion and maintenance in the mine site, there was clearly a tension to outsource services with a larger scope of tasks. However, the supplier needs to have the skill base to assure current and possible future demands. Personnel policy is also an important factor, especially when the supplier is operating inside the mining fleet. The supplier and its contractors have to respect the same safety and environmental requirements as companies’ own employees do, which was a big concern in the case companies.

As a result of the empirical research, the tentative theoretical model was elaborated and an empirically grounded model for the factors influencing the outsourcing decision and its impact on outsourcing process was created.
Figure 11. Elaborated model for the process of outsourcing decision-making.
8 CONCLUSIONS

This research studied the different decision making characteristics which have an impact on the outsourcing process. The theoretical part of this study introduced a tentative model describing different elements that affect the decision making in the outsourcing process. The empirical part of this study consisted predominantly of the empirical research material collected from two case companies working in the mining industry. This chapter presents the central results of this research and provides the answer for the research question. Then the evaluation of this research is discussed including the possible limitations of this study. Finally, in the end of this chapter some ideas for further research are given.

8.1 Answer to the research question

The aim of a research is to find the answer to a research problem (Uusitalo 1991: 50). The research question of this study was:

How different decision-making characteristics determine outsourcing process in mining industry?

This study answered the research question by creating a model describing the decision making elements through which outsourcing process is determined. The answer to the research question is that outsourcing process is determined in both strategic and tactical level where similar decision making characteristics overlap.

Outsourcing strategy needs to align with the overall business strategy of the company no matter which level or scope of outsourcing is under decision. Furthermore, the decision to outsource a function or process should be evaluated individually, to depict its implications to other functions and to the entire production.

However, in every decision making path, there are both strategic and tactical level aspects influencing the final outcome of the outsourcing decision, even when the company is doing initial strategic evaluation of outsourcing. This study followed
Handley and Benton’s model (2009) of decision making aspects on outsourcing process. According to them, the outsourcing decision is the groundwork of firm’s capability base and a risk perspective.

Risk assessment represents the degree to which the company evaluates the multitude of strategic risk associated with outsourcing. Strategic risk assessment in this research contains the decision to make or buy, as well as the expected risks and benefits of outsourcing activities. Moreover, the purpose of the strategic risk assessment is to identify how critical outsourced processes are to the organization. According to Sanders et al. (2007), criticality is the extent to which the task in question impacts the ability of the organization to perform its core competencies. Therefore, these characteristics play a major role when evaluating the questions, whether to outsource or not and how it should be conducted. The greater the criticality of the outsourced task is, the greater the requirements for relationship management, coordination and control. Thus, similarly to the literature review of this study, when outsourcing critical functions, it is understandable to choose either the full outsourcing or vertical integration (insourcing) as the governance structure, and use alternative outsourcing options as a supplement for sudden demand.

However, this study proves that risk assessment acts in both levels of decision making, strategic and tactical, since the empirical analysis showed that the criticality of each function can have a tremendous and unequal impact on company’s overall production. In this study, the criticality of a function is evaluated through asset specificity, high complexity, and small number of bargaining and high uncertainty. Consequently, these attributes are also identified to be the primary factors producing transaction difficulties in transaction cost theory (McIvor 2003; Greenberg et al. 2008).

Capability base in the decision making contains the evaluation of the capabilities and resources associated with the business activity to be outsourced. For the capability evaluation, this study reproduced the list made by Kremic et al. (2006) of factors that have an impact on the outsourcing decision. These factors are cost, strategic factors, function characteristics and environment, and they contain both general and organization specific information of outsourcing implications, though the focus lies
more on the outsourcing impact on the individual function, process or task. Therefore, understanding the characteristics of different factors that affect the outsourcing decision plays an important role when seeking the answer to what is outsourced and why. Summation of these factors reviews the criticality of the outsourced function and therefore affects the form of the appropriate outsourcing engagement.

Even though Kremic et al.’s (2006) list is somewhat exhaustive and based on comprehensive research review on outsourcing literature, one additional critical dimension for outsourcing decision needs to be underlined due to this research focus. This is the supplier’s capability which can also act as an important factor which has impact on the outsourcing decision. Moreover, according to the empirical analysis of this research, the supplier capability is an important factor that affects the outsourcing decision in situations of small and limited markets. There are several studies concerning capability perspective in outsourcing decision such as made by Lei & Hitt (1995), Jacobides & Hitt (2005), and Dekkers (2002). However, these studies are more concentrated on outsourcing firm’s own capabilities and its impact on supplier selection. This research reveals that in some situations, for example in limited market with high uncertainty, the supplier capability can have an overall impact on outsourcing decision of the company.

### 8.2 Theoretical contribution of the study

The empirical analysis did give some distinct reasons to do fine adjustments to the existing theory and some key aspects can be identified in outsourcing in mining industry. According to this study, outsourcing in mining industry is guided by two contextual factors: the production factors and the capacity-based factors.

Production in mining industry is highly dictated by geographical factors, and it cannot be moved to other locations, for example to the lower-cost countries or near better supplier markets. Mines are built around several different process functions which naturally consume a wide scale of different services and products. This tremendous scale of different products can be one driver for outsourcing. However, multiple suppliers can always result in some additional coordination costs and other
outsourcing risks which can lead to a low outsourcing level. Operation functions in mining industry can be described with a high degree of asset specificity (Hilson & Murck 2000) and therefore the decision of outsourcing should always be evaluated through firm-specific attributes, and moreover, through function-specificity and complexity. For example, Greenberg et al. (2008) suggest that a transaction is asset specific, when it cannot be used by other companies. That may be the case because of physical asset specificity, site specificity and human asset specificity. In mining industry, services are usually customized to some extent and cannot be used by other companies. High asset specificity usually exists with high “complexity” of the outsourced process. Complexity refers to the difficulty of monitoring and defining contract terms and conditions of the outsourcing process, which usually causes problems when parties negotiate the service level agreement (Logan 2000; Franseschini et al. 2003; Holcomb & Hitt 2007). Furthermore, requirements for the production in mining industry reflect to the outsourcing decision-making since the mining production is conducted in the same location from the beginning to the end and different production parts are very closely connected to each other. Therefore, distractions or delays in one part of the production have a huge impact on other production parts. Production assurance is one of the most important guidelines for procurement in mining industry. Furthermore, the location of the mine increases the existence of site specificity and the lack of internal human resources increases the level of knowledge or human asset specificity.

Capacity-based factors result from the industrial characteristics of mining industry where the remote location can induce the lack of human resources and required know-how. Geographical location can affect also for the supplier availability. There might be geographic dispersion with the location of service providers, which can cause problems with availability, applicability and flexibility. Also the life cycle of a mine has a major impact on outsourcing which is due to the altered demand of services in different stages of mine life. Preparing for different stages by keeping extra capacity in the company is not usually an option. Therefore, outsourcing initiatives often arise from operational needs for capacity supplementary or to cover up other sudden demands.
8.3 Managerial implications

This research provides useful insights for outsourcing managers to evaluate their outsourcing decisions. Mining industry has several characteristics that can cause opportunistic behavior, such as small number of bargaining, high asset specificity and market uncertainty. Therefore, outsourcing managers are facing practical issues relating to the decision of when to outsource and which outsourcing contract to select. Performing a comprehensive evaluation of an outsourcing occasion not only simplifies the outsourcing decision, but also creates a clear understanding of the risk and coordination implications of outsourcing. This study reveals that it is important to understand both internal and external environment of the outsourcing decision and the strategic and structural aspects associated with an organization’s decision to reconfigure. The lack of proper contract management has also been identified as a significant risk factor that can lead to increased cost of services and inability to meet cost reduction targets. For a successful outsourcing operation, it is important to form contracts so that the supplier acts with the client’s best interest in mind. Different contract terms influence the vendor’s actions, such as their capacity decisions.

Mining companies who are dealing with outsourcing decisions should depict their outsourcing successes and develop common lines and criteria to guide the future outsourcing situations. That could clarify the general procurement process and help also the operational managers to evaluate the outsourcing contracts and providers and it could prevent the possible gaps in the contractual completeness. Depicted processes might also help mining companies to coordinate and control the service providers, since the ongoing and daily tasks are more easily tracked.

For service providers this research provides very important information on the characteristics of the service procurement in the context of mining industry. Furthermore, this research shed light on general outsourcing activities in the same industrial context, and on the different aspects that affect the decision of outsourcing. The most important finding in this research for service providers is that in some situations the supplier’s own capability can be the leading factor for the decision to outsource. Therefore, it can be very useful for service providers to consider their capabilities and offerings also from the mining companies’ point of view.
8.4 Evaluation of the validity and reliability

Like in any other research, potential biases may exist in this research. The quality of qualitative and empirical research is usually tested with the concepts of validity and reliability.

**Reliability** is the “repeatability” of the research results, meaning that the operations of the study can be repeated with the same results (Yin 2003; Silverman 2004). According to Yin (2003: 37, 57-108), the purpose is to minimize the possible errors and biases in the study and to assure that by following the same procedures as described by earlier researcher, the researcher should arrive at the same conclusions and findings. The reliability of the research can be increased by carefully depicting and documenting the ongoing research process (Hirsjärvi et al. 1997). For this research the reliability is assured by documenting the research process and procedures in detail in order that the process is easy to follow and replicate. Also the research methods used and their application in this research process are explained. The theoretical framework served as a basis for empirical research. The framework was a result of combining the result of several previous researchers, which makes it more reliable. The reliability of empirical data of this study is intensified with direct quotations from the interviews. Moreover, the conditions’ in which the interviews are done and how, for example, the duration of the interviews alleviate the reader’s following the research process.

Another test of the quality of the research is **validity**. Generally validity refers to the question whether the research is conducted with the right indicators for the chosen research questions (Yin 2003: 57-108). In simple terms, the concept of validity can be divided into internal and external validity, however, internal validity is more suitable for the explanatory studies, for example to explain causalities in certain conditions. Internal validity in case studies is usually related to the concept of triangulation, which refers to the data collection from a diverse range of individuals and settings, using variety of methods (Koskinen et al. 2005: 254-255). In this study, multiple sources of information have been used when designing the theoretical framework and empirical research in order to provide accurate findings and conclusions from the research.
External validity concerns the level to which study findings can be generalized beyond the immediate case study (Yin 2003: 34-47). The problem of generalization is the biggest in a single case study (Koskinen et al. 2005: 167) and in multiple case studies the problem is smaller. Some researchers argue that the term of validity is not suitable for qualitative studies, because it cannot produce statistical generalizations (Golafshani 2003: 602, Erikkson & Koistinen 2005: 34) Because of that, an analytic generalization is more valid a concept in the context of case study (Yin 2003: 35, Erikkson & Koistinen 2005: 34). Analytic generalization is more related to the generalization of produced theoretical models and investigated concepts, than to individual theoretical results. Moreover, according to Stake (1995) by using case study method it is possible to produce theoretical generalizations, but the main purpose for using case study method is to produce unique and specific information from the actual research phenomenon. The objective of this research was to describe the nature of an outsourcing decision-making in mining industry, which combines the previous outsourcing literature together with the industrial factors concerning the mining industry.

8.5 Future studies

Several interesting themes for further research arose when conducting this research. Hence, from the point of view of management, it would be interesting to conduct more empirically-based research that addresses the development of several outsourcing relationships in the mining industry that somewhat differed in their characteristics, for example in the different levels and scopes of outsourcing engagements. From the marketing point of view, it would be interesting to investigate the duality of supplier-client relationship, in cases where supplier’s capabilities have had a clear impact on the client’s outsourcing decision. Furthermore, it would be interesting to investigate similar research topics from the service provider’s view, for example to examine how different service offerings are created to mining markets.
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EMPIRICAL SOURCES


Kittilä mine brochures and webpage:
APPENDIX

Appendix 1

Body of the theme interviews: General themes and typical interview questions

Opening

- Introduction of researcher/researchers and purpose of the study, assurance of confidentiality
- Demographic Data Collection: Participant titles, background of organization, industry etc.

Outsourcing and outsourcing process

- In your opinion, what are the different types of outsourcing engagements?
- What distinguishes outsourcing, service procurement and sub-contracting from each other?
- What is outsourced in your company? Why?
- Who is responsible for outsourcing ventures? Contracts? Control and coordination?

Drivers and risks of outsourcing

- What are the risks of outsourcing?
- What are the benefits of outsourcing?
- Which functions/processes/tasks you would never outsource? Why?
- Which functions/processes/tasks you would outsource? Why?
- What are the successes and failures of outsourcing in your company?

Decision characteristics

- What kind of services your company would like to procure?
- How are suppliers selected? What kinds of attributes are important?
- Are there any problems with supplier availability?
  - Capability?
  - Knowledge?
  - Capacity?
• In your opinion, when is it appropriate for a company to use different types of outsourcing engagements?
• How would you describe outsourcing in mining industry?

General questions

• Based on your experience, what advice would you give to service providers who want to make business with you?
• What has been your company’s overall satisfaction in outsourcing?
## Appendix 2

Empirical research material, list of interviews.

<table>
<thead>
<tr>
<th>Case Company</th>
<th>Interviewee’s title</th>
<th>Date</th>
<th>Duration/min</th>
<th>Organizational focus level</th>
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<td>59:03</td>
<td>Strategic</td>
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<td>Strategic/Operational</td>
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<td>21.5.2013</td>
<td>59:03</td>
<td>Operational</td>
</tr>
<tr>
<td>Mine 2</td>
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