WHAT IS BEHIND A SOFTWARE ACQUISITION PROCESS? EMPIRICAL CASE STUDY FOCUSING ON FINNISH IT SERVICE PROVIDER AND ITS POTENTIAL CUSTOMERS

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JYVÄSKYLÄN YLIOPISTO

ABSTRACT

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Abstract
Due to new developing technologies and the changing business environment, the role of different digital tools among industrial markets has been rapidly increasing. One of the most rapidly developing sectors has been the growing usage of different kinds of software among Business-to-Business (B2B) companies. Despite the importance of the software for today's B2B companies, the topic of software acquisition process has remained as a marginally research sector within business studies.

The aim of this research is to increase the understanding of software acquisition process within industrial companies. The main focus of this study is on three aspects: The formation of the software acquisition process itself, the buying center, referring to the people participating in the software acquisition process, and the factors that have an effect on the software acquisition process and the buying center. These aspects are reviewed during the literature review which is based on studies focusing on the two main concepts of this research: Organizational Buying Behavior (OBB), and software acquisition process.

This study was carried out as a qualitative case study focusing on one Finnish IT Service Provider and their potential customers (prospects). The data was gathered by utilizing semi-structured interviews conducted within the eight identified potential customers and the data was analyzed in the light of the content of this research. The results of the study reveal that the software acquisition process, among prospects of this study, is considered a well-defined process including a set of sequential stages. Based on the results, a 11-stage model for the different stages of software acquisition is presented. On the managerial side, the beginning of the buying process was considered crucial by the prospects, which suggest the importance for IT service providers to focus on those stages during their marketing actions. Within software acquisitions, the buying center tends to form from a specific project team which is supported by previous literature. Finally, the most important factors affecting the acquisition process and the buying center are typically related to environmental, interpersonal or organizational aspects of the company.

Keywords
Organizational buying behavior, software acquisition process, buying center, factors affecting organizational buying behavior

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Tiivistelmä
Teknologiset innovaatiot ja niiden myötä muuttuva liiketoimintaympäristö ovat johtaneet siihen, että erilaisten digitaalisten toimintatapojen ja työkalujen käyttö erityisesti yritysten välisillä (Business-to-Business, B2B) markkinoilla on viime vuosina kasvattanut merkitystään. Tämä on näkynyt muun muassa ohjelmistoalalla, sillä ohjelmistojen kysyntä B2B-yritysten keskuudessa on kasvanut merkittävästi. Vaikka ohjelmistojen merkittävä rooli nykypäivän B2B-yrityksille on yleisesti tunnistettu, on ohjelmistoihin keskittyvää ostoprosessia ja siihen liittyviä tekijöitä tutkittu hyvin rajallisesti.

Tämän tutkimuksen tavoitteena on laajentaa ymmärrystä B2B-yritysten ohjelmistojen ostoprosessiin liittyen. Tutkimuksessa käsitellään ohjelmistojen ostoprosessia erityisesti kolmesta keskeisestä näkökulmasta: 1) ostoprosessin muodostuminen, 2) henkilöt ketkä osallistuvat ostoprosessiin, sekä 3) ostoprosessin muodostumiseen ja osallistuviin henkilöihin vaikuttavat tekijät. Koska nämä näkökulmat liittyvät olennaisesti organisaatioiden ostoprosessiin, on organisaatioiden ostokäyttäytyminen toinen tämän tutkimuksen teoreettisen viitekehyksen pääteemoista. Toinen pääteemoista, ohjelmistojen ostoprosessi, syventää yleiseen organisaation ostoprosessiin liittyvää kirjallisuutta lähemmäksi tämän tutkimuksen kontekstia.

Tutkimus toteutettiin laadullisena tapaustutkimuksena, jossa case-yrityksenä toimi suomalainen tietotekniikka-alan yritys. Tutkimuksessa keskityttiin case-yrityksen kahdeksaan potentiaaliseen asiakkaaseen, joilta pyrittiin keräämään tietoa ohjelmistojen ostoprosessiin liittyen. Aineistonkeruu suoritettiin haastattelemalla, jonka jälkeen kerätty aineisto analysointiin tutkimuksen teeman valossa. Tutkimustulokset osoittavat, että ohjelmistojen ostoprosessi on tarkoin määritelty prosessi, joka sisältää joukon peräkkäisiä vaiheita. Liikkeenjohdollisesta näkökulmasta tutkimustulokset korostavat ostoprosessin alkuvaiheen merkitystä, joihin ohjelmistoja tarjoavien yritysten kannattaa keskittyä. Tulokset osoittavat myös, että ohjelmistoihin keskittyvissä ostoprosesseissa projektista vastaavat henkilöt muodostavat tyypillisesti projektitiimin. Tärkeimmät ostoprosessiin ja siihen osallistuviin henkilöihin vaikuttavat tekijät puolestaan liittyvät yritysten toimintaympäristöön, ihmissuhteisiin tai organisaationaalisiin tekijöihin.

Asiasanat
Organisaatioiden ostokäyttäytyminen, ohjelmistojen ostoprosessi, ostoprosessiin osallistuvat henkilöt, organisaatioiden ostokäyttäytymiseen vaikuttavat tekijät

Säilytyspaikka
Jyväskylän yliopiston kauppakorkeakoulu

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1 INTRODUCTION

1.1 Research background and justification for the study

In today's evolving world of business and technology, companies are forced to constantly seek the best possible ways to stand out from their competitors. For people working in marketing and sales departments this means trying to learn new ways to respond to customers' wants and needs better than other businesses operating in the market. Following this kind of conversation usually leads us to read sales related texts and publications but as important as it is to understand what to do on the seller's side to attract the customers, it is also important to understand what the buyers think during their journey towards the purchase. Without understanding why the buyer makes the purchase it can be hard for businesses to respond to customers' wants and needs.

There are two kinds of buyers that exist - Business-to-Business (B2B) buyers and Business-to-Consumer (B2C) buyers. B2C buyers are the ones who buy products and services to use themselves, which makes them the final consumers of the purchased item. In B2B sector, the buyers purchase the products or services to help produce their own products or services to sell to their customers. According to Kotler et al. (2016), in both B2C and B2B markets, the buying process includes certain stages from recognizing the need to purchasing the product or service and these processes are affected by various factors. Even though there are similarities in the buying processes, B2B markets tend to work slightly different than B2C markets. In B2C markets, the process of buying goods or services is usually considered as a straight forward process compared to B2B markets. More specifically, in B2B sector there is often a long-term cooperation between the customers and suppliers, whereas in B2C sector the focus is in short-term relationships (Ohnemus, 2009). This is because in B2B markets the products and services provided tend to be far more complex and expensive, which also makes the amount of people involved during the buying process higher both in buyer's and seller's side (Kotler et al., 2016, p. 170; Glynn, 2011).

One of the research areas what considers buying process of industrial goods from the buyers' perspective is organizational buying behavior (OBB). OBB literature has its origins to back in 1960s and 1970s when the first studies among this research area started to emerge. Ever since the 1970s, the original three models of OBB published by Robinson et al. (1967), Webster and Wind (1972) and Sheth (1973) have had the major impact for the research in this area. However, the original models have started to receive critique from not taking into account all aspects in the evolving business world. The original models view the buying process as a rational process where sequential stages are followed by another stage, whereas the shift among the new research is moving towards an irrational process with interrelated stages. Besides the actual buying process,

another aspect that has gotten researchers' attention in this sector has been the people participating in the buying process. The term Buying Center has existed since the original models of OBB, but the composition and the factors affecting the buying center has divided the opinions of academicians among the research within the past five decades.

Like in OBB literature, there has been a forced shift towards new ways in the whole business world. This shift has been affected especially by new technologies, which companies around the world have been forced to start utilizing to be able to compete against their competitors. During the 21st century, one of the sectors what managers have had to deal with is the growing role of Information & Technology (IT). The effect of IT on firm performance is an abundantly researched area and the positive effect has been recognized in past research (Chae et al., 2014). However, despite the growing role of IT services, the research around the buying process of IT services remains low. The acquisition of IT services has been studied in the past, but the research has not been able to clarify if the OBB models are useful in the context of buying IT services. One of the aims of this study is to research if the models of organizational buying behavior are valid in the specific context of Information and Technology.

This research will focus on the buying process of IT services, with a special focus in software acquisition processes. Because of the rapidly emerging new technologies and growing utilization of IT services in the B2B sector, the demand for reliable software packages is constantly growing. Software acquisition processes tend to be large-scale, expensive, long-lived projects and involve multiple stakeholders (Choi & Scacchi, 2001). Special attention for this process is crucial for businesses because it has been proved that selection of inappropriate software can appear as an expensive investment with disadvantages in company's business processes and functions (Jadhav & Sonar, 2009).

According to Lin et al. (2007), the software acquisition process has become more difficult and complex due to: 1) the availability of large number of software products in the market, 2) the continuous development of the IT sector, 3) the incompatibilities between numerous hardware and software systems, 4) the difficulty to evaluate the functional dissimilarities among software packages, and 5) the lack of technical knowledge among the users of the software. This research aims to fill the gap between the continuous development in the sector and the lack of knowledge about the acquisition process of software. More specifically, the aim of the study is to recognize how the software acquisition process in today's industrial markets is formed.

1.2 Study objective and research questions

The study is carried out as a case study with the special attention on a Finnish IT service provider. The research project started in June 2017 with three pre-interviews among the employees of the case company. The findings from pre-interviews revealed the need for this kind of research, where the aim is to increase

the understanding of the software acquisition process within industrial companies. Hence, the research problem can be formulated as: *How can the buying behavior of large to medium size Finnish industrial companies be characterized when acquiring software?* This problem is researched by seeking answers from three different perspectives considering this specific phenomenon: how the typical software acquisition process among industrial companies is formed, who are the core people to participate in this kind of project, and which factors have an effect on the buying process and the people participating in it.

Therefore, the research questions are set as:

1. How can the *software acquisition process* of Finnish industrial companies be characterized?

2. How can the *buying center* of Finnish industrial companies be characterized in software acquisition process?

3. How can the most important *factors* that affect the software acquisition process of Finnish industrial companies be characterized?

1.3 Research structure

This study is divided into five chapters. Before the actual study begins, there is an abstract and the table of contents, which are placed in the beginning of the study. The introduction, which is the first chapter, reviews the background of this study. The first chapter provides general information about the B2B markets and how they differ from B2C markets. In addition, the OBB concept is shortly reviewed which is one of the main concepts in this research. Also, another core theme for this study, software acquisition process, is reviewed during the introduction chapter. After the core concepts are presented, the objective of the study is defined, and the research questions are set.

The second chapter of this study focuses on handling the earlier literature from this research area and hence, this chapter is called the literature review. First, the chapter reviews the main characteristics of the buying process in B2B context from the selling firm's perspective. Two concepts, the seven steps of selling and selling solutions are reviewed in the perspective of the selling organization. Even though the main focus of this research is in the buying firm's side, it was considered to provide valuable information for this research to shortly review the other side's perspective of the buying process. Another reason for including these concepts in the research was that from the case company's viewpoint they might provide good information for selling the software together with the results of this study. After the short review from B2B sales, the literature review moves on to handling the previous research of OBB and software acquisition process,

which are the core concepts of this research. Both concepts are reviewed from three crucial viewpoints for this study, the buying process, the buying center and the factors affecting the buying process (and buying center). Overview from the literature is presented at the end of chapter two. In addition, a research model based on the previous literature is built, which is presented at the end of this chapter as well.

After the literature review, the methodology chapter presents the data and research method. The description of the case company and companies interviewed for this research are also presented in this chapter. In the fourth chapter, the results of this research are presented. This chapter is divided into smaller chapters which go through the main aspects of the present research theme by theme (chapters 4.1-4.3). At the end of chapter four, there is a summary of the results from the interviews. Finally, in chapter five, the results of the research are drawn and discussed. The discussion chapter also includes theoretical contributions and managerial implication of the study. The structure of the research can be seen in Figure 1.

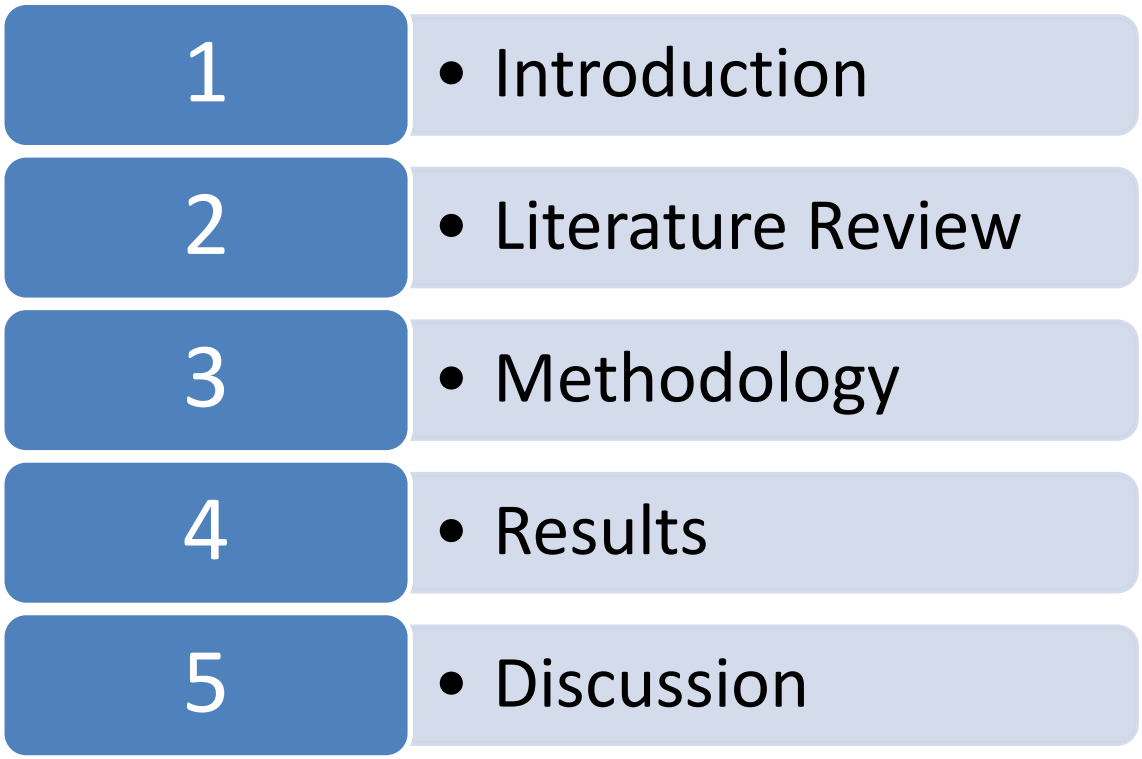

FIGURE 1 The Structure of the Study

2 LITERATURE REVIEW

2.1 B2B Sales

Starting all the way from ancient world, the long and rich history of the profession of selling has been an object of interest. During the years, as the process of selling has evolved, it has had an impact on the development of both sales and marketing discipline, especially when considering the changes in economic conditions (Moncrief & Marshall, 2005; Wotruba, 1991). Despite the changes which have occurred over time in the sales process, one of the oldest frameworks in the history of selling has remained constant. Even though the traditional "Seven steps of selling" paradigm has existed ever since selling has been recognized as a professional discipline, it is still used a lot in textbooks and classes focusing on selling. (Moncrief & Marshall, 2005).

The seven steps of selling present the typical sales scenario in following order: 1) prospecting, 2) pre-approach, 3) approach, 4) presentation, 5) overcoming objections, 6) close, and 7) follow-up. Despite the popularity of this model, effective selling methods have changed over time and the original model is considered as yesterday's model for most of the firms. Especially relationship selling approach, which consists securing, developing and maintaining long-term relationships with profitable customers, has taken a bigger role in effective selling. (Moncrief & Marshall, 2005).

As Moncrief and Marshall (2005) state, the seven steps of selling have recently begun to evolve. This change has been affected by various factors, including plenty of new technologies. This has driven salespeople into situations where the seven steps of selling have transformed into a new, evolved form (Moncrief & Marshall, 2005). Due to this, Moncrief and Marshall (2005) provide a new perspective for the sales process today, which still includes seven steps but in an evolved form. Unlike in the traditional view, the new framework identified seven steps which do not occur sequentially and it includes the following steps: 1) Customer retention and deletion (Prospecting in traditional seven steps framework), 2) Database and knowledge management (Pre-approach), 3) Nurturing the relationship/Relationship selling (Approach), 4) Marketing the product (Presentation), 5) Problem solving (Overcoming objections), 6) Adding value/satisfying needs (Close), and 7) Customer relationship maintenance (Follow-up).

Moncrief and Marshall (2005) state that the evolved model of the seven steps of selling has primarily occurred because of the general shift from selling orientation to customer orientation, which supports the idea of nonsequential sales process. Continuously, authors argue that the focus in organizations should be turned into building and managing relationships at multiple levels. This differs from the old view because the perspective of the selling process is seen as a set of sequential steps which the salesperson concludes starting from the

prospecting and ending at the follow-up. This means that traditional one-one salesperson/purchaser interaction is turning towards the situation where there are multiple people holding a variety of positions within the firm who affect the firm's selling (Moncrief & Marshall, 2005).

2.1.1 Selling solutions

Because of the increased power of buyers in the 21st century, a small set of large buyers become very crucial for many suppliers operating in B2B markets. These buyers may not only be crucial for the suppliers' business in direct monetary terms, but also they might provide suppliers with critical strategic assets. Viewing the large buyers as critical assets leads suppliers into collaborative relationships and shifts the focus on co-creating value with, and for buyers. This might lead into situations where buyers are willing to move beyond the standard cost and quality improvements, which gives an opportunity for suppliers to offer unique collaborative solutions. (Grewal et al., 2015).

Tuli et al. (2007) recognize the specialty of selling solutions as they state that selling solutions is a complex process which requires multiple stakeholders' time and effort throughout the relatively long process. Consequently, this means that solution business differs from product business in many ways. Solution business requires more collaboration from the management, more involvement of the customers in business planning and the measures used for controlling the business have to support the nature of the business (Storbacka, 2011). From the delivers' side companies that try to deliver solutions profitably are required to secure firm-wide initiative, which means the solution development and sales cannot be only a single department's responsibility (Storbacka, 2011).

One of the industries where selling solutions is a crucial role is information & technology (Tuli et al., 2007; Sharma & Sagar, 2018). Solutions in the IT sector are technical, complex and they require a lot of knowledge to sell (Sharma & Sagar, 2018). Complex products also require more information during the processing compared to simple products. One specific type of a solution in IT sector is different types of software. The role of software has increased and today it has become a critical part of our society, as it is a core element of any modern product, process or service (Fuggetta & Di Nitto, 2014). The emerging role of software business has brought challenges and puts pressure on companies operating in the software sector in order to respond to their customers' needs. Software solutions have been proved to be necessary and now companies are searching for innovative and effective approaches to respond the complexity of software development, risk reduction and reliability in the software business (Fuggetta & Di Nitto, 2014).

2.2 Organizational Buying Behavior

As it is important to understand the suppliers' view of the sales process, it is also important to understand the buyer's view of the same process. Looking into the process from the buyer's perspective, it would mean understanding the aspects that affect buyers during their journey towards the decision to purchase a product or service. As Kotler et al. (2016, p. 170) state, in the business buying process, buyers decide which products and services their organization needs and then finds and chooses the right suppliers and brands. At the same time business marketers must try to understand their business buyers' behavior as much as they can (Kotler et al., 2016, p. 170). Thus, it is safe to say that understanding the customer purchase decision process makes it easier for the selling company to respond to customers' needs and wants.

Even though business and consumer markets have similarities, such as, both involving people in buying roles and making purchases to satisfy needs, they also differ in many ways (Kotler et al., 2016, p. 170). First of all, the amount of money used for the B2B purchase is much larger than in end-consumer buying process because a B2B purchase involves more aspects that are included in the end price such as raw materials and parts, operating systems and capital items (Glynn, 2011). In B2B markets there is frequently fewer but far larger buyers' than in B2C markets (Kotler et al., 2016, p. 171). However, the B2B buying process usually involves more people in the buying process such as buying committees of firms, which makes it more complex than typical B2C buying process (Glynn, 2011). Other things that might increase the complexity of organizational buying can relate to goals, rules or traditions which are involved (Aarikka-Stenroos & Makkonen, 2014; Bachkirov et al., 2016). Not only are industrial buying decisions very complex but they are also characterized by group decision-making, which makes it likely that B2B buying appears to be more rational than in consumer markets (Lynch & Chernatony, 2004).

One generally used theory for analyzing the purchasing process in B2B markets is research focusing on OBB (or Industrial Buying Behavior (IBB)). Studies considering organizational buying behavior have a long history in marketing research. Especially in the late 1960s, an interest toward the organizational buying process started to increase (Johnston & Lewin, 1996). Three early models in organizational buying behavior research were published by Robinson et al. (1967), Webster and Wind (1972), and Sheth (1973). These three papers are considered as the founders of the conceptual foundation for the research of organizational buying behavior (Johnston & Lewin, 1996). For nearly five decades, these studies have offered a base for the research of organizational buying behavior and even today's recent studies tend to refer to the original models (Barclay & Bunn, 2006; Makkonen et al., 2012; Homburg et al., 2014; Grewal et al., 2015; van Zeeland & Henseler, 2018). Johnston and Lewin (1996) call these three early models the original models of organizational buying behavior and these original models are shortly presented in the next chapter.

2.3 The original models of organizational buying behavior

The original models of organizational buying behavior are individual studies but they share many things including the idea of organizational buying behavior being a process of different stages (Johnston & Lewis, 1996). In 1967, Robinson, Faris and Wind first started to increase the interest around organizational buying behavior as they introduced the Buygrid model. The Buygrid framework is made for the analysis of organizational buying in all kinds and sizes of organizations and many researchers who have focused on organizational buying behavior have utilized this framework. In this model, authors divide the buying process into eight buyphases (stages) and combine them with three different types of buying situations. These following eight phases are sequential activities often performed in an organizational buying process:

1) Recognition of need and a general solution
2) Determination of characteristics and quantity
3) Description of characteristics and quantity
4) Search for and qualification of potential sources
5) Acquisition and analysis of proposals
6) Evaluation of proposals and selection of supplier(s)
7) Selection of an order routine
8) Performance feedback and evaluation

As said, authors suggest that the eight buyphases should be considered together with three types of buying situations, known as buyclasses. Buyclass can be a new task, modified rebuy or direct rebuy and they all have an effect on different buyphases. More specifically, it means that buyphases can differ in both existence and duration depending on the current buyclass situation. First of all, new task refers to a situation when a company is looking for something totally different compared to previous needs, whereas modified rebuy is a situation where a company wants to evaluate suppliers despite the fact that the current situation satisfies their needs. Finally, straight rebuys are the situations when an organization decides to stay with the same supplier and rebuy from them (Robinson et al., 1967).

Like Robinson, Faris and Wind (1967), the other two original models introduced by Webster and Wind (1972), and Sheth (1973), also view organizational buying behavior as a process including different stages. Even though the other two of the original modes use fewer stages than Robinson et al. (1967) the main idea of the course of different stages remains similar. Seeing the OBB as a process is not the only idea what is shared between the original models. All three models also highlight the importance of different factors which can have an effect on the whole process. Johnston and Lewin (1996) gathered the nine factors presented, in one or all of the original models, and they are: environmental, organizational, group, participant, purchase, seller,

conflict/negotiation, informational and process or stages. These factors are believed to present the majority of the constructs to affect the buying process either inside or outside the firm.

2.4 Shift towards modern OBB

Even though lot of the OBB research published in 21st century is still based on the original models, a shift towards modern OBB theory has been starting to emerge. This shift is reasonable in many senses. First of all, the environment where businesses operate today has changed a lot during the past five decades. Rapidly evolving technology has brought new aspects to consider for every part and department which an organization includes. This technological change has driven organizations into the situation where new ways and possibilities in many sectors must be considered and analyzing how their customers go through the buying process is no exception.

Despite the emerging shift, it is important to notice that many of the aspects in traditional OBB models are still valid today. Johnston and Lewis (1996) presented an integrated model (Figure 1) for organizational buying behavior, which is based on the original models. As seen in Figure 1, Johnston and Lewin (1996) included the basics of the three original models in their framework, but also extended it with new aspects. Their framework expects that environmental, organizational, purchase, group, participants, conflict/negotiation, informational and seller characteristics, which were identified already in the original models of OBB, influence the organizational buying process either directly or indirectly. Johnston and Lewis (1996) also included two new constructs – decision rules and role stress – in the framework which then forms as an integrated model of OBB.

It can be noticed from the framework that the effect between three of the ten constructs – conflict/negotiation, group and informational – and the actual buying process runs in both directions (Johnston & Lewin, 1996). This means that the three mentioned constructs do not only have an effect on how the buying process is formed, but they are also affected by the buying process itself. More specifically, organizational buying process is expected to influence the formation of the buying center, the type of information used and the negotiation strategies used during the different stages of the buying process.

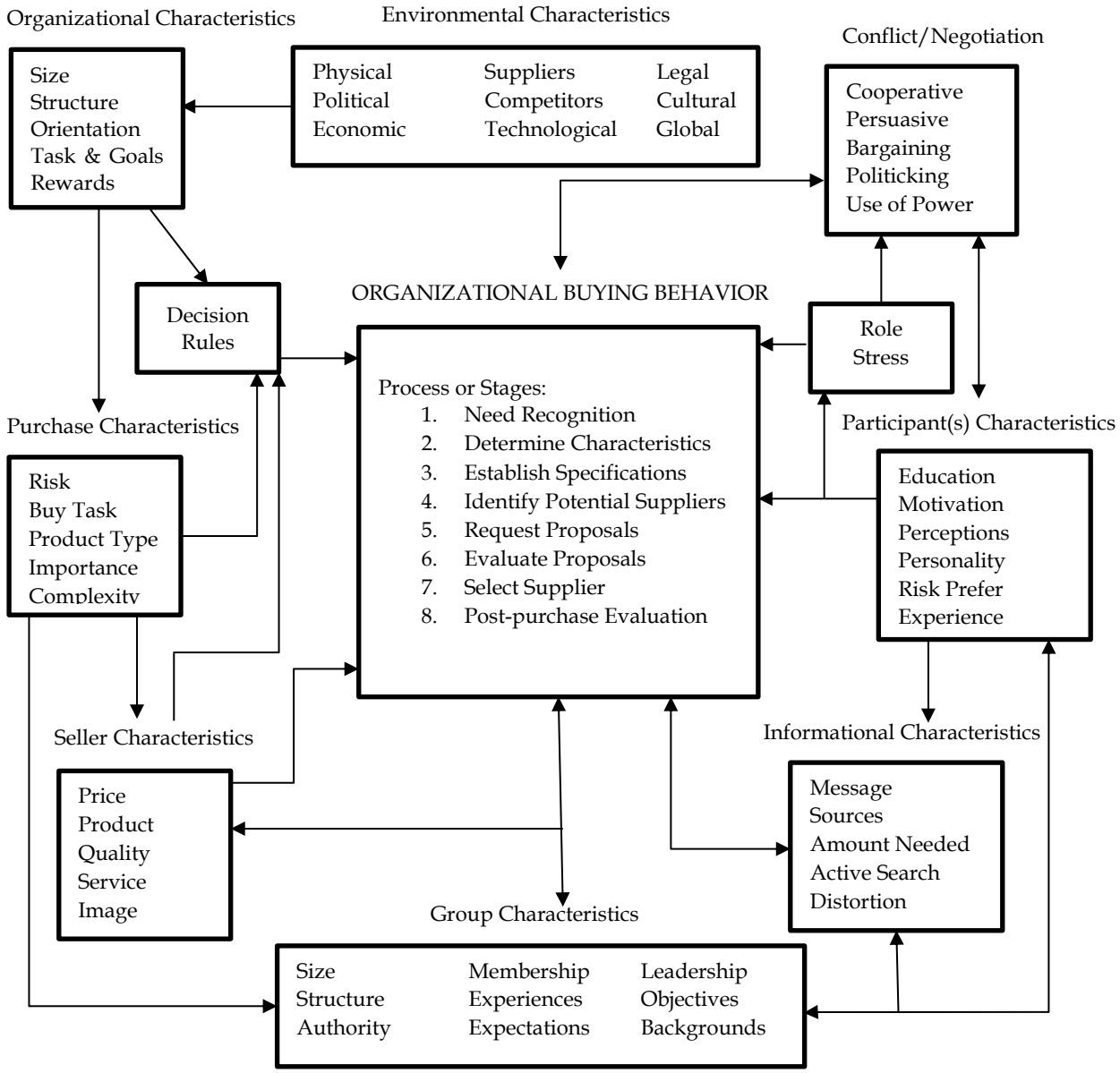

FIGURE 2 An Integrated Model of Organizational Buying Behavior (adapted from Johnston & Lewin, 1996)

One of the main aspects that the original OBB models share is the idea of organizational buying being a process (Johnston & Lewin, 1996). The process-view is still common even within the most recent studies but the idea of what kind of a process OBB is has changed among the research over time. The original view of OBB tends to see the decision-making process as a linear progression starting from the need recognition and ending to purchase decision. This view has been starting to receive a lot of critique among researchers due to the minimal attention for the complexity of the buying process. This has led to a situation where the shift in OBB literature has moved towards seeing the buying process more as a non-systematic and dynamic process (Rajala & Tidström, 2017). Related to this, Grewal et al. (2015) state that the original models understand the OBB as a process of sequential decision-making stages, whereas the modern B2B

buying consists of four ongoing processes: implementation, evaluation, reassessment and confirmation. These processes tend to happen simultaneously rather than in sequential order, which can be seen for example as an ongoing data gathering throughout the whole buying process.

Similar to Grewal et al. (2015), Makkonen et al. (2012) studied the OBB process from the new viewpoint, seeing it as a process of "muddling through". In this case, muddling through refers to a situation where the buying process is not completed step by step and moving towards the well-defined goals, but rather incrementally moving away from the causes of the problematic situation. The results of their research support the recent shift in OBB literature, as they state that OBB cannot be considered only as a rational, well-planned goal-oriented process but rather as a muddling through process.

The muddling through perspective presented by Makkonen et al. (2012) can also be dragged into a conversation considering another aspect that has been criticized about the original OBB models - the rationality of organizational buying. The interest of the effect of behavioral aspects has been growing and research argues that buying decision models are not always based on rational behavior (Kaufmann et al., 2017). Authors state that in the muddling through perspective the aim is to achieve a satisfying solution through rationality of real-life practice rather than reaching an optimal and comprehensive solution through the systematic buying process. More specifically, authors question the extent of the rationality in organizational buying and suggest that rationality is not only about defining objectives, seeking for relevant information, evaluating and choosing the best options. Instead, they argue that it is more so about finding good enough solutions by utilizing the limited amount of information from familiar sources. Authors call this phenomenon as a rationality of practice in which buyers utilize the rationality which is available (Makkonen et al., 2012).

Related to rationality of the buying process, Kemp et al. (2018) approach the organizational buying behavior from the emotions viewpoint. Because humans are involved in decision-making, authors state that emotions' role should be researched more in organizational buying behavior and that there is a gap in OBB literature since it is often treated only as rational activity. The results of their research suggest that emotions play a role in every stage of the buying process, which supports the idea of not only rational OBB (Kemp et al., 2018). However, in this particular research only the selling organization was interviewed, which leaves the buying organization out of the research.

Barclay and Bunn (2006) focus on the dimensions of the decision-making process in organizational buying. The authors state that even though the importance of understanding the decision-making process is commonly accepted, research has not been able to identify its dimension. They propose that one such dimension is process heuristics which refers to behavioral tendencies, decision strategies or decision approaches appealing to how different characteristics in the decision context are seen. Their research identifies two process heuristics to affect the final decisions: structuring and downgrading. Structuring refers to situations where buyers use more structured and rational activities for carrying out the process than expected. For example, the person in charge of the purchase

might try to impress their supervisor which makes the buyer use more time in a project than is necessary. On the other hand, downgrading appears when buyer does not put as much effort to a process as would be expected.

Rajala and Tidström (2017) add another perspective to recent OBB literature as they examine the field of organizational buying from coopetitive perspective. Coopetition refers to business relationships where cooperation and competition exist simultaneously and the authors aim to shed the light of OBB in this context. Authors found out that organizational buying behavior in coopetitive business relationships develops over time through interrelated actions on individual, organizational and relational level. More specifically, they state that the dominating actions develop through individual and organizational level before making it to relational level. Coopetition perspective supports the recent OBB literature (e.g. Barclay & Bunn, 2006; Makkonen et al., 2012) in a sense that it sees organizational buying as a dynamic non-systematic process rather than in a form of sequential stages.

2.5 Buying Center

Since the original models of OBB, people participating in the buying process have been called the Buying Center. One definition for the buying center is that it includes all individuals and groups who participate in the buying decision process, who share some mutual objectives and the risk arising from the decisions (Gaggl, 2014, p. 9). Especially in B2B branding research, it has also been common to call the buying center the decision-making unit, which refers to the same concept as the buying center (Bendixen et al., 2004; Leek & Christodoulides, 2011; Johnston & Cortez, 2018;).

Whether it is called the buying center or the decision-making unit it is believed that the buying agent does not make the buying decisions alone. Sheth (1973) states that there are minimum of three departments involved in the buying process, which most commonly are purchasing, quality control and manufacturing departments. The composition of the buying center is affected by many variables, which according to Johnston and Bonoma (1981) can be divided into two main categories: 1) variables related to organizational structure and 2) variables related to purchase situation. Category one variables includes the size (annual sales), complexity (number of divisions), formalization (percentage of the buying process communication) and centralization (organization and operation of the purchasing function of the firm; centralized, decentralized or combined) of the company, whereas category two variables include importance (buying center's perceived importance), complexity (time required for buying process), novelty (buy grid categorization; new task, modified rebuy or straight rebuy) and purchase class (type of purchase, e.g. industrial service) of the current purchase situation.

Understanding the composition of the buying center is crucial for business marketers because it increases the understanding of whom they should try to

influence during the buying process (Johnston & Bonoma, 1981). After understanding the composition of the buying center, it is also important to identify the key people within the buying center because it makes it easier for marketing managers to avoid wasting time on the people who are less relevant to the buying process (Garrido-Samaniego & Gutierrez-Cillian, 2004). Ghingold and Wilson (1998) highlight the importance of identifying buying center members as they state that the marketing efforts that are done during the early stages of the buying process are more likely to affect the buying center members than the efforts done later in the buying process. In addition, authors state that the buying center might be harder to convince once the members have reached consensus from the specific needs that have to be fulfilled. If the opportunity to reach buying center members during the early stages of the buying process is missed by marketers, it may be too late to fix afterwards (Ghingold & Wilson, 1998).

Among the research considering different aspects of a buying center, the common trend has been to focus on a purchasing unit of a firm (Johnston & Chandler, 2012). However, as the rapid technological changes in today's business environment have changed the buying process, changes have also happened to the people participating in the buying process. In fact, according to Johnston and Chandler (2012) the management of the organizational buying center is among the most rapidly changing sectors in modern business world. Buying processes have become more intertwined between different departments, which has affected how buying centers are usually formed today. As a result of this growing complexity of the buying center, participants are often involved in multiple, ongoing, continuous processes (Johnston & Chandler, 2012). Figure 2 gives an example of how the buying center is formed today, in which the buying center works as a bridge and broker inside the firm.

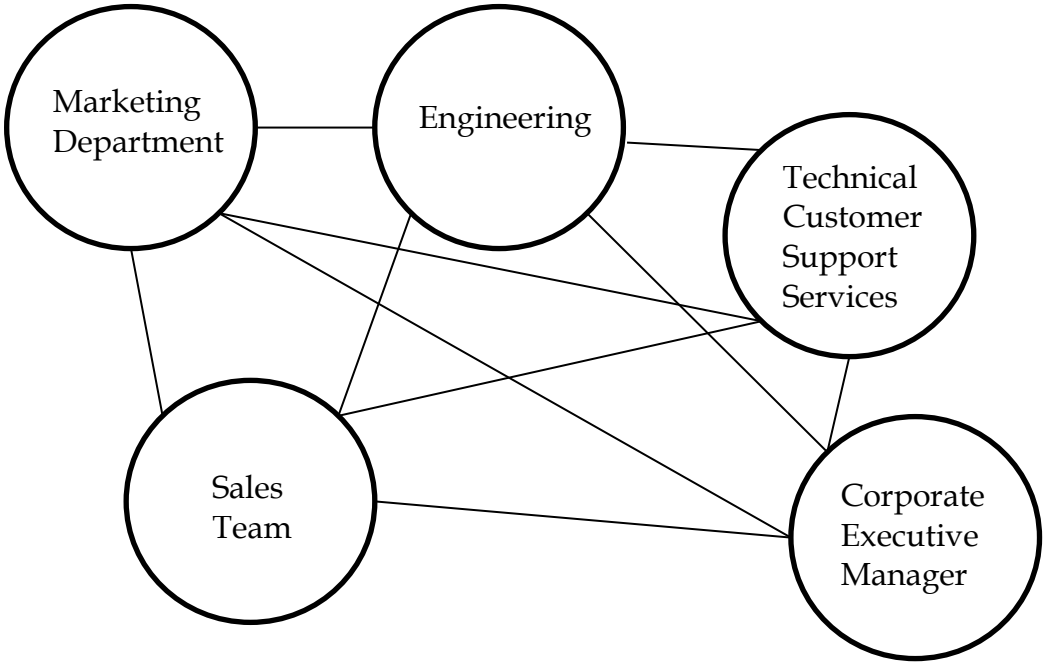

FIGURE 3 The OBC as a bridge and broker inside the firm (adapted from Johnston & Chandler 2012, 390 in Handbook of business-to-business marketing)

The literature of the buying center has also been discussing about different roles between the people included in the buying center. According to Webster and Wind (1972), the buying center includes five different roles which are users, buyers, influencers, deciders and gatekeepers. Users refer to a group who will be the primary users of the purchased product or service. On the other hand, buyers are those who make the contracts with suppliers and influencers are the ones to influence the buying process either directly or indirectly by providing information about the alternatives. The group of people who have an authority to choose among the alternatives are called deciders and finally, gatekeepers are the ones to control the flow of information that goes into the buying center.

Garrido-Samaniego and Gutierrez-Cillian (2004) found out that the users of the product have a key role especially in the beginning of the buying process, especially in "need recognition" and "establishment of specification" stages. In addition, authors argue that when the cost and strategic importance get higher, also the involvement of the management in the buying process increases. At the same time when the role of management increases, the role of the purchasing department decreases. This also works the other way around, which means that when the purchase is routine or strategically unimportant, the purchasing department dominates the whole buying process (Garrido-Samaniego & Gutierrez-Cillian, 2004).

Garrido-Samaniego & Gutierrez-Cillian's (2004) claim that the buying center is affected by the cost and importance of the purchased product or service is supported by Lewin and Donthu (2005). Lewin and Donthu (2005) studied the buying center structure and involvement comparing them with different purchase situations. They used five purchase specific constructs to represent the type of the purchase situation, which were: 1) buyclass, 2) product type, 3) purchase importance, 4) purchase complexity and 5) purchase uncertainty. Lewin and Donthu (2005) found that the constructs considering the specific purchase situation seemed to have a strong effect on the size, involvement and influence of the buying center.

2.6 Software acquisition process

The information technology acquisition process consists of every process that organizations acquire for IT resources (Palanisamy et al., 2010). Even though the literature of organizational buying is rich from many aspects, little research has focused on IT acquisition processes (Sriram & Stump, 2004; Palanisamy et al., 2010). With a special attention on purchasing software, Palanisamy et al. (2010) state that traditional OBB models can help the understanding of which factors affect software acquisition, but these frameworks are not always specific enough for analyzing the acquisition of this type of technology. Hence, it can be stated

that the models for OBB may not take every factor into account when analyzing the buying process of B2B software and the literature must be implemented with OBB theories. In this chapter, the literature about the dynamics and specialties of software acquisition process is reviewed, which is followed by building a research model.

Shainesh (2004) identifies two main types of software buying situations: customized software buying and system implementation & integration. Customized software buying refers to a situation where buyers have specific business needs that the chosen service providers are supposed to fulfill after the parameters of the project are set. Depending from the case, broad parameters of the project can be set with or without the service provider. On the other hand, system implementation & integration projects are usually projects where customers buy services to customize, install or maintain packaged software like Enterprise Resource Planning (ERP) programs.

In B2B software context the products and services acquired tend to be highly customized and individualized in order to meet the customers' needs (Moriarty & Konsik, 1989; Loebbecke et al., 2010). When a company is considering a purchase of software the risks and costs are typically high. Hence, the number of people participating in buying process is usually larger, information search is greater, and the duration of the whole process is longer (Shainesh, 2004). In addition, few studies in the field have highlighted the importance of the active information search during software acquisitions (Pavlou & Fygenson, 2006; Loebbecke et al., 2010). This is due to the fact, that software industry is different in a sense that customers do not often know whether the final products will meet their expectations or not, which makes an ongoing information search crucial.

According to Chau (1995), the main purpose of the software selection process for an organization is to make the selected software fit other applications as good as possible with the minimal amount of modifications. When looking into this software selection process research, it is easy to notice that there is a large variety of different kinds of processes and models identified within the IT sector. One of the main reasons for this is the fact that there is also a wide range of different kinds of software available in the market. According to Jadhav and Sonar (2011), recent studies have mostly focused on models and methodologies for reusable off-to-shelf software selection, but also other literature in the software sector exists. Other common topics of interests among researchers are evaluation and selection of specific software product (e.g. Case tools, simulation software, knowledge management tool etc.), presenting methodologies for software selection or demonstrating criteria for software selection (Jadhav & Sonar, 2011).

Despite the variety of the products and services available in the software market, a high percentage of the software acquisition literature tends to have similarities with the basic steps that can be found in OBB literature. Chau (1995) provides a very general view for the selection process of software. He states that 1) studying the existing needs, 2) having vendors demonstrate possible solution, 3) contacting other users of software and 4) interviewing some of the future users,

are steps that are generally found in any software selection process, which is then expanded due to specialties of each process.

Another model for software acquisition was introduced by Rounds (1992). His six-step model is very similar to models to be found in OBB literature as it includes sequential stages as follows: 1) defining needs, 2) developing a specification, 3) developing a request for proposals, 4) receiving and evaluating proposals, 5) purchasing and installing the system and 6) implementing the system. Similar to Rounds (1992), Shainesh (2004) refers to original OBB models and states that generalized buying process of software consists following five stages: 1) identify need, 2) establish specifications, 3) identify alternatives, 4) evaluate alternatives and 5) select suppliers. However, author points out that when buying software, the complexity of the purchase situation can extend the buying process.

Patel and Hlupic (2002) introduced a model for knowledge management tool selection, which has been a growing type of software in the market. Before reaching the actual buying process, authors state that a lot of pre-work including a team formation for the software selection must be done. Once reaching the actual selection process, it consists of five phases as following: 1) identifying requirements, 2) short-listing knowledge management tools, 3) evaluation, 4) pilot testing and 5) purchasing. Hlupic and Paul (1996) presented a similar model as they focused on the purchase of simulation software. Their six-step model goes as following: 1) need for purchasing simulation software, 2) initial software survey, 3) evaluation, 4) software selection, 5) software contract negotiation and 6) software purchase. These two studies are similar in a way that they both support the idea of software acquisition process being a process with sequential stages, but also argue that if the requirements are not met before the final decision, the process moves back to evaluating the alternatives.

Le Blanc and Korn (1992) provide a different view for the software buying process as they present a framework for selecting a Computer Aided System Engineering (CASE) software. Their model only includes three main stages: 1) screening prospective candidates and developing of a short list of CASE software packages, 2) selecting a CASE tool which fits best the requirements of the organization, and 3) matching user requirements with the features of the chosen CASE tool and explaining how these requirements will be met. In addition, authors state that out of these three phases, the first and the third phase are the most crucial. This is due to the fact, that if the screening is done properly, the number of CASE software packages to be evaluated will reduce. Finally, the process of matching the user requirements with the selected CASE software makes the usage of the selected software more efficient (Le Blanc & Korn, 1992).

Daneshgar et al. (2013) look into the software decision making process from Small and Medium size Enterprises' (SME) viewpoint. The authors state that the software decision-making process in SME environment includes four main phases: 1) intelligence, 2) design, 3) choice, and 4) implementation. During intelligence phase, the organization seeks for information, which transforms to opportunities in relation to the decision about the possible acquisition. In the design phase several alternatives are considered and the criteria for the selection

of the best alternative in the next phase is made. During the choice phase, alternatives are evaluated using the model developed in the design phase, which after this will be implemented.

One more specific topic among the research in the software sector has been Enterprise Resource Planning (ERP). Successful (or unsuccessful) acquisition processes of ERP systems can have long term effects for organizations and its' stakeholders which makes ERP acquisition process require more consideration from organizations (Bhatti, 2014). Focusing on purchasing ERP systems, Bhatti (2014) divides the ERP acquisition process in four stages: 1) initiation, 2) selection, 3) final choice, and 4) negotiation. These main stages are additionally divided into multiple activities which makes the process very complex.

Adding to that, Verville and Halingten (2003) present a model for ERP software acquisition process which can be seen in Figure 4. Their model of the ERP acquisition process, referred as "MERPAP" model, is based on the idea that ERP software acquisition process includes six interrelated but separate processes. The structure of the process goes as follows: 1) MERPAP starts from the planning, 2) MERPAP ends to negotiations, 3) MERPAP is not linear process, 4) some of the processes occur simultaneously, 5) some processes are embedded with each other, 6) all of the processes besides the "choice" are iterative, 7) all of the processes besides the "choice" are recursive, and 8) each process is causal and the results of each process are utilized by another process. Due to its nature, the model supports the idea of organizational buying being a far more complex process than the original OBB models suggest, also when purchasing software.

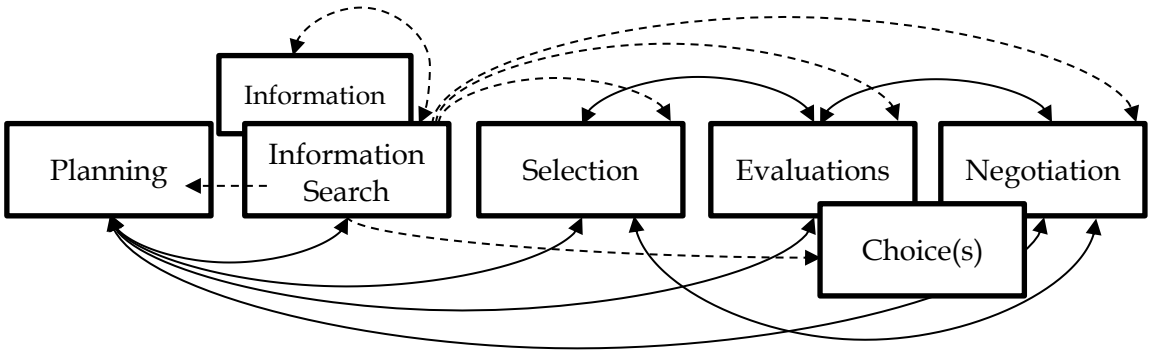

FIGURE 4 MERPAP Model (adopted from Verville & Halingten, 2003). The dotted lines indicate the information flow between processes. The solid arrows indicate the ongoing activity between processes.

The same way, Rouhani and Ravasan (2014) state that evaluation and selection of software is a complex decision-making process. Their research focuses on Business Process Management software (BPMS), and as a result authors present a model for the selection process. The model consists of three stages, 1) identifying the alternatives and evaluation criteria, 2) structuring a decision-matrix and set weights to the criteria, and 3) evaluating the alternatives and concluding the final ranking between the alternatives. Even though the model only has three recognized stages, each stage includes two separate tasks which in most of the frameworks would result in a six-stage model. Authors also

highlight the importance of forming a professionalized decision-making team for carrying out the project before moving to the selection process.

2.6.1 Buying Center in software acquisition process

The buying center within software acquisitions generally has the same meaning as within OBB literature. People, who are more or less in charge of carrying out the buying process, are typically called the buying center. Despite the fact that the meaning of the buying center does not change when focusing on IT sector, there is certain specialties to consider when analyzing the role of the buying center in IT specific buying projects.

The number of people included in the buying center during software purchases tends to be relatively high. This is because the value of an average software purchase is usually a big investment which makes the amount of people to participate in the project increase (Shainesh, 2004). According to Patel and Hlupic (2002) the team in charge of the software acquisition process should ideally contain a variety of representatives throughout the organization. Similar to Patel and Hlupic (2002), Wei et al. (2005) state that in order to be successful in software acquisition process, acquisition teams should include people with business and technical skills as well as managerial experience. In addition, Shainesh (2004) states that the key participants in the buying center of software acquisitions include people from the management, the future users of the software and technical experts from the IT department.

One aspect that can make the buying center in IT sector a lot different from other sectors is including external technical consultants within the buying center (Daves et al., 1997). Collecting relevant information about the new technology and potential suppliers is one important action to reduce technological uncertainty. However, this search can be complex, and a lot of the times people included in the buying center from inside the organization may not have the capabilities for the best possible results. This can drive organizations to consider outside technological consultants (Shainesh, 2004). Especially in large-scale, high technology products and services external consultants are commonly included in buying centers. Daves et al. (1997) found out that external consultants were used especially in the beginning of the buying process, to define the needs of the organization and in system specification.

2.6.2 Factors affecting software acquisitions

Verville and Halingten (2002) investigated the influences and characteristics that affect the acquisition process of ERP software. They identified several influences which were categorized into four main categories presented in one of the original OBB models by Webster and Wind (1972) as following: 1) environmental, 2) organizational, 3) interpersonal, and 4) individual factors. Authors suggest that the most notable factor that was identified to influence the software acquisition process, was the role of the users of the future software. In addition, they also

proposed that the role of project management techniques, team leadership and cost of the purchase all play an important role.

Palanisamy et al. (2010) used the same categorization as Verville and Halingten (2002). Their aim was to provide further understanding of the ERP software acquisition process. OBB models served as the basis of their research, and together with the findings from Verville and Halingten (2002), they tested 33 possible factors to influence the software acquisition process. The results of their study suggest that the following five factors have the biggest impact on the software acquisition process:

1. Software strategy and performance (Software performance, strategic nature of the software, business and technology reasons, and total cost of ownership);
2. Business process re-engineering and adaptability (technical aspects of the software, business process re-engineering, adaptability of the solution, and user-friendliness of the solution);
3. Management commitment and user buy-in (management commitment, user participation within the teams and user buy-in);
4. Single vendor integrated solution; and
5. Consultants, team location and vendor's financing

Loebbecke et al. (2010) studied the role of different factors affecting the software acquisition process by comparing the two main types of drivers identified in earlier economic research to affect the purchase decision of B2B software: information-related drivers and feature-related drivers. Information-related drivers can for instance refer to references from existing customer, whereas feature-related drivers include aspects like the product to be purchased itself or the price of the product. Similar to the previous research, Loebbecke et al. (2010) point out the important role of both of these drivers rather than selecting one type to be more important than the other. Interesting findings from this research are that the only factor that was not found to have a positive effect on software purchase decision was the demonstration team's performance. Different from these findings, other research has found a positive effect between demonstration phase and selecting software (Bhatti, 2014). However, the other six hypotheses including customer references, expert network recommendations, price performance, product functionality and sales team performance were found to have a positive impact on B2B software purchase decisions (Loebbecke et al., 2010).

Rounds (1992) states that when companies reach the stage where the proposals from different possible suppliers are evaluated, companies should develop an evaluation matrix to help compare and analyze these different proposals. By doing this, the author states that companies are able to not only make a rational choice between the alternatives, but the decisions made are also more justifiable. This might help in cases where the project manager has to explain the decisions to the board for instance. Rounds (1992) gives an example

of what the evaluation matrix could include and identifies seven categories to evaluate: base price, product characteristics, product support, service, qualification statement, references and supplementary information.

Similar to Rounds (1992), Jadhav and Sonar (2011) also identified seven categories which formed a software evaluation criteria. This criteria consists of the analysis of functional, technical, quality, vendor, output, cost & benefit and opinion related aspects of software. On the other hand, Daneshgar et al. (2013) identified eight factors that affect the decision for software acquisition. Even though the main focus in their research is in SMEs, the following factors are stated to be common between all sizes of enterprises: requirements fit (standard software that fits the specific needs); cost; scale & complexity; commoditization, flexibility & change; time; in-house information systems expertise; support structure and operational factors.

2.7 Summary of the literature review and formation of the research model

The literature review of this study is formed from the basis of the objective of the research and the set research questions. Despite the fact that software acquisition process is considered to be a complex process with multiple affecting variables, earlier research has found similarities between software acquisition process and the general models of organizational buying. Thus, rather than focusing only on the literature considering the specific sector of software acquisitions, an overview from the general OBB models was presented. Due to the specific context of this research and the role of the case company, two themes considering B2B sales process were also reviewed.

The research questions presented earlier focus on the three main topics of this study: buying process, buying center, and the factors affecting the buying process and the buying center. In order to provide further understanding of the main topics, the literature review covered the earlier research focusing on these specific concepts. Based on the objective of this study and the literature review, the following research model was built (Figure 5).

By utilizing the formed research model, this study aims to answer the set research questions. For the first aspect of the research model, *software acquisition process*, no single assumption is highlighted for how it is formed in the context of this research. As noted from the literature review, the research around both general organizational buying process and the specific field of software acquisition process remains very inconsistent and hence, it would be difficult to set any propositions. Because the recent research has argued that the organizational buying process is far more complex than presented in the original OBB models and does not include sequential stages (e.g. Makkonen et al., 2012; Grewal et al., 2015; Rajala & Tidström, 2017), it will be interesting to investigate

whether it is possible to identify a software acquisition process with specific stages or not.

The second aspect in the research model is focusing on the *buying center*. The buying center is typically considered to be a very complex concept (Ghingold & Wilson, 1998), with many variables affecting it (e.g. Ghingold & Wilson, 1998; Garrido-Samaniego & Gutierrez-Cillian, 2004). Due to this, the buying center has also been studied from many different viewpoints. In the light of this research, the most important viewpoints considering the buying center refer to the composition of the buying center and factors affecting it. Related to the composition, it will be interesting to see if this research is able to identify the key participants of the buying center within the software acquisition process.

The final aspect of the research model includes *the factors affecting the software acquisition process and the buying center*. Similar to the first aspect, there is no a general assumption for characterizing the factors that affect the software acquisition process and the buying center. However, two relatively new studies focusing on the factors affecting the software acquisition process (Verville & Halingten, 2002; Palanisamy et al., 2010) have categorized their results in regards to Webster and Wind's (1972) four factors. Hence, a similar method was used in this research. Therefore, environmental, organizational, interpersonal and individual factors are the four main categories used when dividing the factors identified within this study.

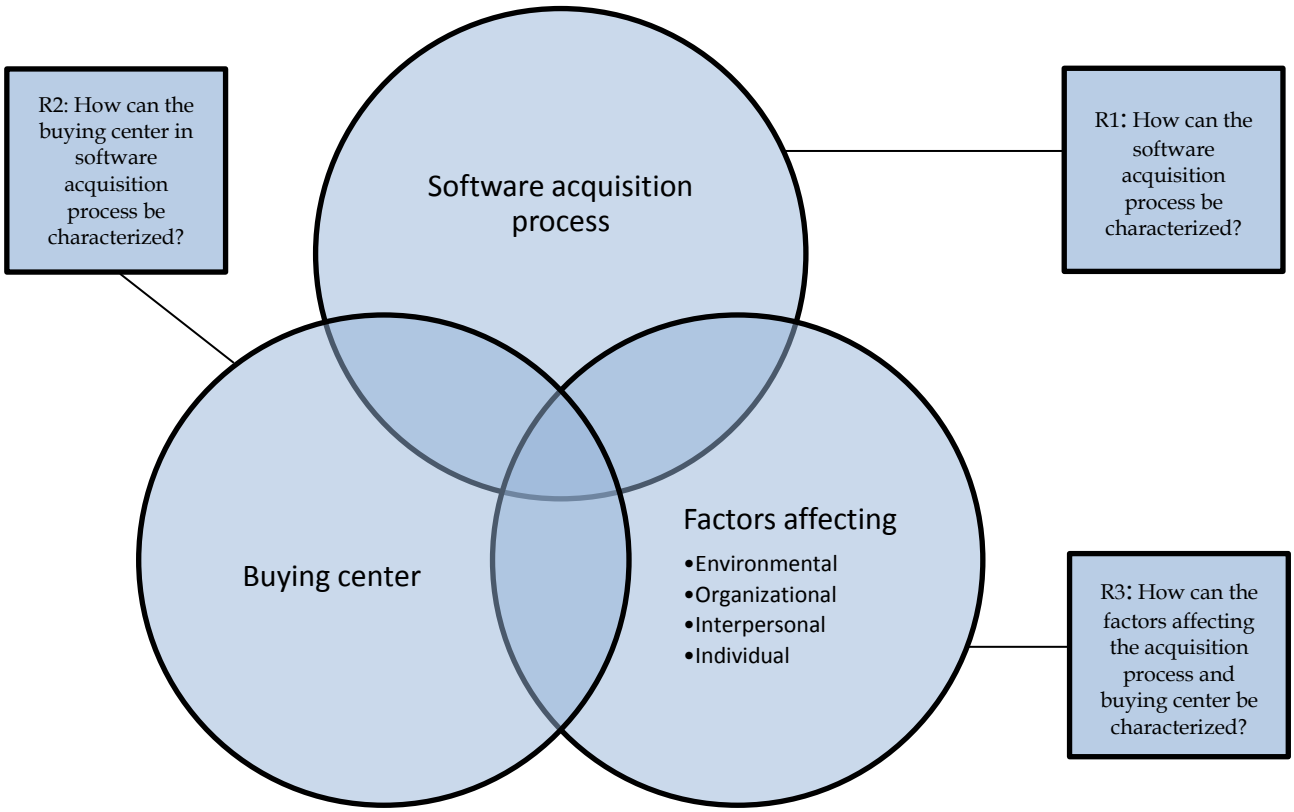

FIGURE 5 Research Model

3 METHODOLOGY

3.1 Qualitative Research

Research methods are usually divided into two main categories: qualitative and quantitative research from which this study represents the first mentioned. The main purpose for qualitative research is to describe the real life, rather than verifying already existing truths. During data collection process, this occurs in a way that the qualitative research method tends to often favor people as subjects for data collection (Hirsjärvi et al., 2009, p. 161-164). In addition, Hirsjärvi et al. (2009, p. 164) state that in qualitative methods, the researcher tends to trust more on his or her own findings with subjects rather than using measuring tools.

Qualitative research aims to explain the studied phenomenon holistically in its own context (Bryman & Bell 2011, p. 403) and hence, qualitative data is considered to reveal complexities in research (Miles and Huberman, 1994, p. 10). Because of its nature, qualitative research tends to trust on small sample size for data collection but with comprehensive points of view for the analysis (Eskola & Suoranta, 1998). Especially among B2B studies, where multiple contextual variables tend to affect both individual and organizational behavior, quantitative surveys are not considered a proper method. Another fact that fights against using quantitative surveys in B2B research is that it would not give a comprehensive understanding because individuals within the company participate only in parts of the entire process (Johnston et al., 1999). Qualitative research was selected as a method of this study because it was considered the most likely method to provide valuable results in the complex settings of this research.

3.2 Case study

Case study is a research approach where the main focus is to describe, understand, predict and/or control the individual (Woodside, 2010, p. 1). When a research is focusing on real-life events, like organizational processes, case study is appropriate for utilization because it helps the researcher to achieve a more comprehensive understanding of these events (Yin, 2014, p. 4). In fact, Yin (2014, p. 16) defines case study as "an empirical inquiry that investigates a contemporary phenomenon (the "case") in depth and within its real-life context, especially when the boundaries between the phenomenon and context may not be clearly evident."

Even though the case studies are often perceived as qualitative studies, a case study can also appear as a mix of qualitative and quantitative research methods (Yin, 2014, p. 19). However, compared to quantitative research,

qualitative methods allow researchers to access the actual behavior of the research subject better (Grönfors, 1982, p. 12). Consequently, case study allows researchers to examine the collected data very closely in a specific context. Hence, a majority of the research carried out as case study selects a geographically small area or a very limited amount of people as subjects for the study (Zainal, 2007). In fact, when considering a case as an organization or business, it is typical that case studies focus on intensive investigation of a single case (Bryman & Bell, 2011, p. 59).

Despite the common use of single cases, case study can also be a multiple case study which occurs when there is more than a single case included in the same study. According to Yin (2014, p. 56-57), the advantages of using a multiple case study are related to perception of a more compelling and robust research. However, the usage of single case studies is often preferred if the study is focusing on critical testing of an existing theory, an extreme or unusual case, a common and well-known case, a revelatory case or a longitudinal case (Yin, 2014, p. 51-53).

Together with these two designs, case studies are yet categorized in the light of the unit of analysis. According to Yin (2014, p. 31) it is important to define the unit of analysis to limit the data collection and help the analysis process. Since a case study can focus either on a single case or multiple cases, it may also involve multiple units of analysis. In addition, Yin (2014, p. 31) states that the main unit of analysis should be related to the chosen research question, but the case may also contain embedded units of analysis. This results as two main units of analysis: the holistic design and the embedded design. Holistic design is an advantageous strategy in a case where no logical subunits can be identified or when the theory behind the case study has a holistic nature. On the other hand, embedded design is useful in situations when a holistic nature for the case study cannot be identified or if the case clearly includes subunits relevant for the study (Yin, 2014, p. 54-55). The four basic types of designs for case studies formed from the reviewed four variables are presented in Figure 6.

The problem of this research is formulated as: *How can the buying behavior of large to medium size Finnish industrial companies be characterized when acquiring software?* Due to the complexity of the research problem, selecting a case study as a research approach seemed to be the most reasonable choice. Focus of this case study is not in one specific purchase or one specific customer of the chosen case company, but the goal is rather to gain general understanding of the software acquisition process within industrial companies. Although this study includes eight informant companies, it is considered as a single case study because the informant companies are identified as potential customers of the case company. In fact, related to Yin's model of the basic types of designs for case studies presented in Figure 6, the informant companies can be considered to work as subunits in the context of the main research objective. Consequently, this research is formed as a single case study with multiple units of analysis (Type 2 in Figure 6). Further, the units of analysis of this research are presented in Figure 7.

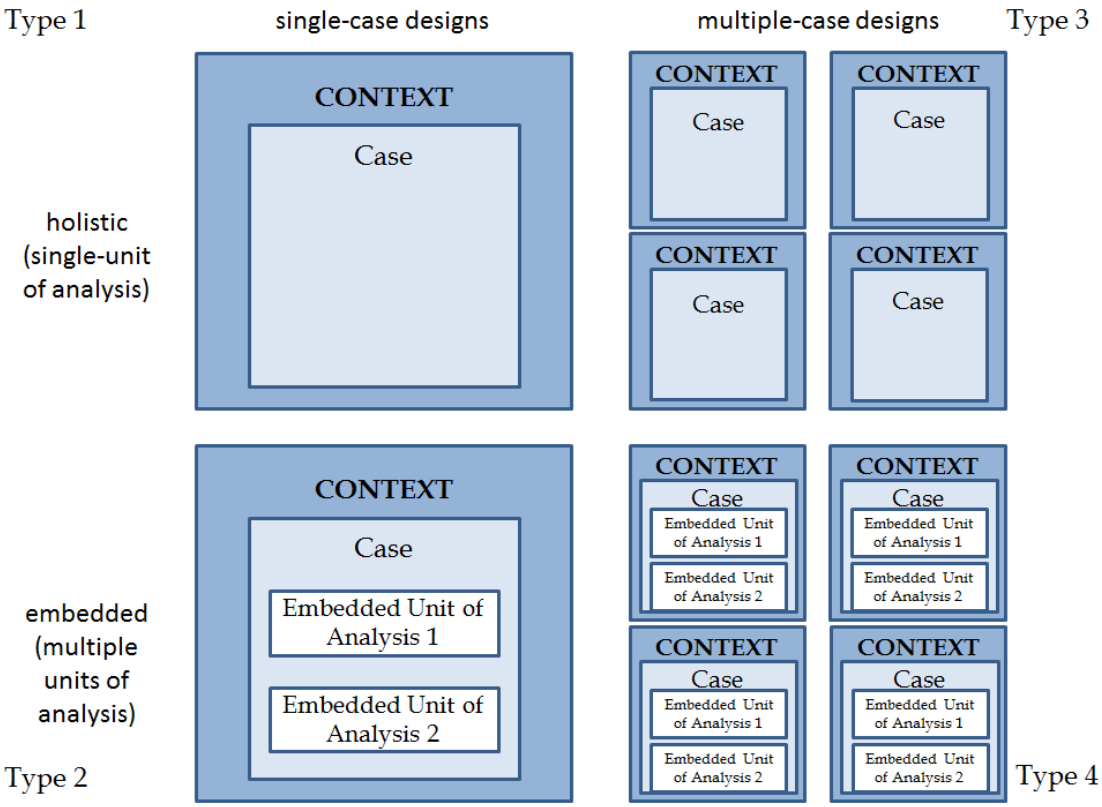

FIGURE 6 Basic Types of Designs for Case Studies (adopted from Yin, 2014, 50)

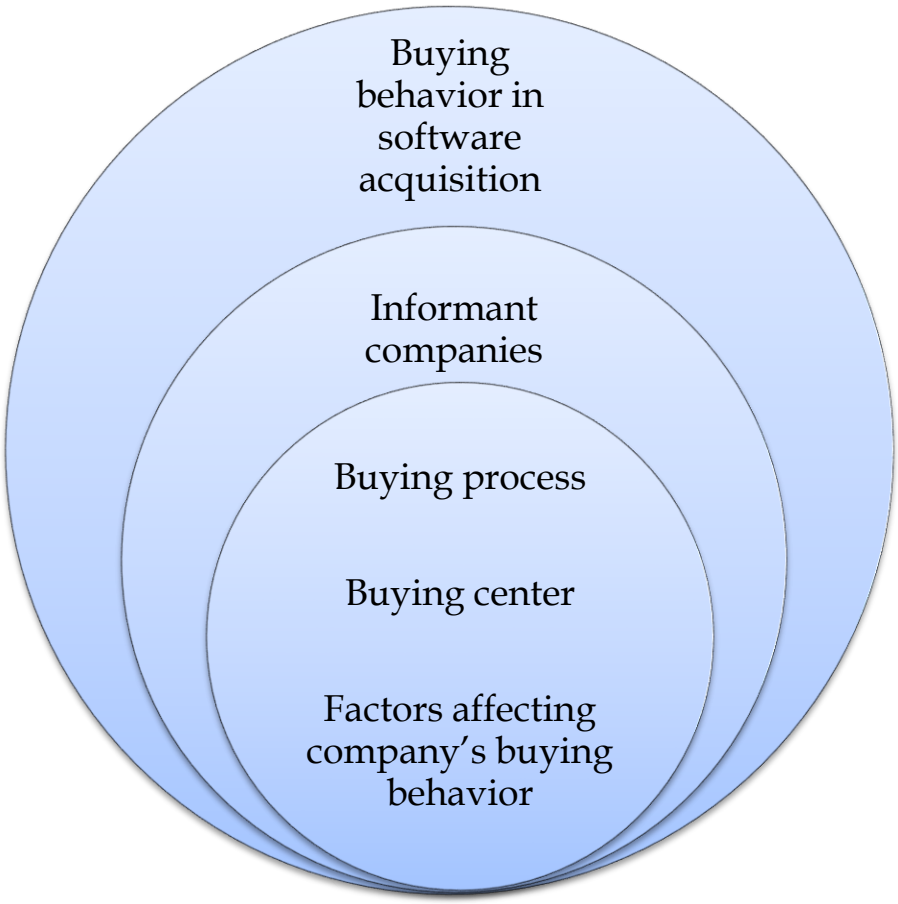

FIGURE 7 Units of Analysis Used in This Study

3.3 Case company description and selection of the informants

The case company is a Finnish IT service provider and consulting company specializing in enterprise content management, information security, software development and IT consulting services. The case company was founded in 2007 and currently employs around 30 employees. This company was chosen as the case company of the research after discussions between the Executive Vice President of the company and the researcher of this study. The case company also fit the design of the study, which made the selection process easy and direct. After the decision from carrying out the case study was made, it was decided to organize preliminary interviews to expand the understanding of the current situation within the case company. In fact, the pre-interviews had a major role in deciding the final objective of this research.

Pre-interviews with three employees of the case company were conducted in June-July 2017. All three interviews were semi-structured, face-to-face interviews where the questions of the interview remained the same. The questions of the pre-interviews focused on the case company's software business with the special attention to selling the software. After analyzing the results of

the pre-interviews, the study was decided to direct towards the buying process within the customer side, rather than analyzing the sales process of the case company. In addition, informant companies were decided to seek from potential, rather than existing customers. Details of the interviewees of pre-interviews can be seen in Table 1.

TABLE 1 Overview of the pre-interviews

	Title of the interviewee	*Type and length of the interview*
Interviewee A	Executive Vice President, Chairman of the Board	Face-to-face, 25min
Interviewee B	CEO	Face-to-face 28min
Interviewee C	Marketing Manager	Face-to-face 28min

The requirements of informant selection in quantitative research are related to an adequate sample size, whereas in qualitative research the goal is more so to find appropriate informants to offer valuable information for the specific research (Coyne, 1997). When using a qualitative research method, Bryman & Bell (2011, p. 489-492) suggest that a method for successful informant selection is purposeful sampling. Purposeful sampling refers to a situation where selected informants are believed to offer useful and rich data for the research and that is why they are chosen as informants.

Like often done within qualitative studies, the selection of the informant companies in this research was based on purposeful sampling, meaning that the sample was intentionally selected in the light of the specific needs of the study (Coyne, 1997). The informant selection process in this research started after the preliminary interviews with the employees of case company. Afterwards, a list of the possible informant companies was made by the researcher and accepted by the case company. The basic idea behind the informant selection was to find medium to large size B2B industrial companies that have utilized software as part of their business. Because software acquisitions tend to be expensive investments, it was presumed that small companies do not utilize them as much and hence, cannot offer as relevant information for this research as medium and large companies.

After the requests to participate in the research were sent to possible informant companies, a total of eight informant companies accepted the request. These companies are named as Prospect A – Prospect H in this research. The companies are called prospects because the chosen companies are not currently customers of the case company, but rather potential customers for the future. The basic information about the chosen prospects is provided Table 2. Also, further information of the prospects and possible details or differences of the interviews conducted with prospects are provided in chapter 3.4.

3.4 Data collection and analysis

3.4.1 Collecting the data

It is common in qualitative data gathering methods that they emphasize words over numeric data (Bryman & Bell, 2011, p. 386-389). Even though case studies might include both qualitative and quantitative methods, qualitative approaches for data collection are considered more appropriate because they allow researchers to investigate with a more specific perspective (Johnston et al., 1999). Johnston et al. (1999) divide data gathering methods to be utilized in qualitative research in ethnography/participant observation, interviewing, focus groups, language-based approaches and text or document analysis. In case study context, what also this research represents, personal interviews and observation methods are the most commonly used approaches (Bonoma, 1985). For this research, interviews were considered the most appropriate approach for data collection.

Interviews can be divided into different groups depending on the type of the interview. According to Bryman and Bell (2011, p. 466-467), these types are structured, semi-structured and unstructured interviews. These classifications refer to flexibility of the interview, where unstructured and semi-structured interviews are more flexible than structured interviews and hence, are used in qualitative research. In this research, semi-structured interviews were selected over structured interviews because they were considered the most likely method to increase the understanding of the chosen research objective. On the other hand, if the chosen approach was completely unstructured interviews, covering all the wanted topics during the interviews would not have been possible to guarantee. Using semi-structured interviews also allowed the researcher for flexible formulation of questions and a chance for asking further questions during the interviews.

Interviews for this research were divided in two sets: the first half of the interviews was conducted in January 2018 and the other half in March 2018. This gave an opportunity to change the structure of the interview after analyzing the results of the first four interviews if it was considered necessary. The language in all of the interviews was Finnish and the duration of the interviews varied between 25 and 42 minutes. Seven interviews were carried out as face-to-face interviews at the interviewed company's facilities and one interview as an online interview. All seven of the face-to-face interviews were recorded to help the analyzation of the collected data. The reason behind one online interview was the interviewee's request to participate in the research via online interview. An exception with this interviewee was made because another interview was considered to yet increase the reliability of the research.

The structure and questions of the interview were developed based on the object of this study. Questions were planned beforehand and the interview followed the same structure between each interviewee and no need for changing the questions or structure of the interview was considered necessary during the research project. However, each interview included further questions asked by

the researcher when they were considered to give a more comprehensive view of the present question asked. For conducting the online interview, a form with the same structure and questions used in face-to-face interviews was sent to interviewee via email, and open answers on each question were written by the interviewee. The interview structure and the questions can be seen in Appendix 1.

The selection of the interviewees from the prospects did not have many requirements. In fact, when first contacting the prospects, the contacted person was requested for a suggestion of a person who could possibly offer valuable information with regards to the research objective. This left the only limitation for the selection of interviewees, which was set as a participation in software acquisition process in company's recent history, with no need for further consideration. The basic details from the chosen interviewees are presented in Table 2 and further information below the Table 2.

TABLE 2 Overview of the prospects and the interviewees

	No. of Employees	*Job title of the interviewee*	*Type and length of the interview*
Prospect 1 *Interviewee 1*	2000	ICT Service Manager	Face-to-face interview, 38min
Prospect 2 *Interviewee 2.1 (IT Manager)* *Interviewee 2.2 (System Specialist)*	220	IT Manager System Specialist Business Applications	Face-to-face interview, 42min
Prospect 3 *Interviewee 3*	80	CEO	Face-to-face interview, 25min
Prospect 4 *Interviewee 4*	900-1000	Manager of Strategic Purchasing	Face-to-face interview, 30min
Prospect 5 *Interviewee 5*	230	Business and Project Manager	Face-to-face interview, 26min
Prospect 6 *Interviewee 6*	400	Local IT Support	Online interview
Prospect 7 *Interviewee 7*	400	Development Manager (Digitalization)	Face-to-face interview, 26min
Prospect 8	350	Product Development Engineer	Face-to-face interview, 36min

Interviewee 8			

Further information of the prospects and interviews

Prospect 1

Prospect 1 is a large Finnish industrial company, which is currently present in 30 countries around the world. Prospect 1 has many sites also in Finland and for this research, the ICT Service Manager of one of the biggest company's sites in Finland was interviewed.

Prospect 2

Prospect 2 is a large multinational company, with one of its biggest manufacturing facilities located in Finland. Prospect 2 is part of a large corporation located in the United States and Prospect 2 has 2200 employees worldwide from which more than 200 are in Finland. For this research, the company's Finnish manufacturing site's IT Manager (interviewee 2.1) was planned to be interviewed alone, but in the end, the System Specialist in Business Applications (interviewee 2.2) also joined the interview making Prospect 2 the only prospect of the research with two interviewees.

Prospect 3

Prospect 3 is a Finnish medium size company operating in the manufacturing sector. It currently has 80 employees, which makes it the smallest company participating in this research. The results considering Prospect 3 will focus on one software purchase the company has recently made. There are two reasons why the results considering Prospect 3 only focus on this one purchase: 1) Due to the size of the company, software acquisitions do not happen as often as they might within bigger companies, and most importantly 2) Because of the recent timing of the purchase, this software purchase was considered to provide the most valuable information in the light of the research objective.

Prospect 4

Prospect 4 is a large manufacturing company located in Finland. The company is part of a bigger corporation whose headquarter is located in the United States. The interviewee from Prospect 4 was the only one in this research who represented the purchasing department within the interviewed organization, making the results of this interview different, and hence a valuable contribution to this research.

Prospect 5

Prospect 5 is a Finnish medium size enterprise operating in the construction business. For this research the company's Business and Project Manager was interviewed.

Prospect 6

Prospect 6 is a large Finnish company operating in the consumer food industry. It is part of a bigger concern operating in a larger industry sector and within a larger geographical area. Interview with Prospect 6 was the only interview which was carried out as an online interview. The same interview with the same structure and questions that was used in other interviews was sent to the interviewee via email. Because a face-to-face interview was not possible, the answers remained shorter than in other interviews, but the interview was considered to provide an important viewpoint and hence, valuable information for this research.

Prospect 7

Prospect 7 is a Finnish based industrial company that during its relatively short history has grown globally and operates today in eight countries around the world. Prospect 7 is part of a bigger industrial investment company and it employs over 500 employees globally, from which about 400 currently in Finland. For this research, company's Finnish site's Development Manager in digitalization was interviewed. Prospect 7 launched a digitalization team in the beginning of 2018 and since then, the interviewee has been part of this team.

Prospect 8

Prospect 8 is a Finnish manufacturing company whose products are today exported to more than 80 countries around the world. Prospect 8 employs more than 350 employees globally, with half in their headquarters located in Finland. For this research, the company's Product Development Engineer was interviewed. Prospect 8 has recently improved their IT environment and the interviewee has been a big part of this process for the past three years.

3.4.2 Analyzing the data

Unlike in utilization of quantitative research methods, qualitative methods do not have general rules about how the data analyzation should be conducted (Bryman & Bell, 2011, p. 571). However, it is typical that the data analysis from semi-structured interviews starts with intensive reading of the data (Schmidt, 2004). According to Schmidt (2004), after an intensive reading of the data, the researcher should form a guide for categories they want to analyze. This guide is then utilized in coding (Schmidt, 2004), which refers to an analyzation technique where the gathered data is broken down into components, which are given names (Bryman & Bell, 2011, p. 577). After coding the data, the analysis is done

in the light of the formed components before the results of the analyzation can be presented (Schmidt, 2004).

The data analysis of this research started by listening to the recorded interviews and transcribing them verbatim. After the transcription, the data was read several times to increase the understanding from the content of each interview. The content was analyzed in the light of the set research questions of the study, which was then followed by coding the gathered data. In fact, because the interviews were conducted in two sets of four interviews, a preliminary analysis from the first set was done before the last interviews were conducted. After all interviews were conducted, the collected data was analyzed once again. The final analysis of the research is presented in Chapter 5.

4 RESULTS

The empirical data collected from the interviews will be presented in this chapter. The basic information from the eight selected prospects and the interviewees were shortly presented in the methodology chapter (Table 2). In addition, a short review from each Prospect and possible details and differences related to the conducted interviews were presented below Table 2. Hence, this chapter will focus on the results from each interview. This chapter is divided into four main parts covering the results from each main aspect of the research model presented in Figure 5 (chapters 4.1-4.3) and the summary of the results (chapter 4.4).

4.1 Software acquisition process

4.1.1 Need identification

Within all eight interviews, the first clear identified stage for the software acquisition process is *need identification.* Regardless of the fact that need can be identified in different ways, from different reasons, and by different people, all of the interviewees stated that need identification is when the software acquisition process starts. Referring to this, two of the interviewees mentioned that the need for software acquisitions in their recent history was forced due to problems with an older service provider.

> *"We had a solid ERP system, but our supplier went bankrupt… we were forced to search for a new system." (Interviewee 3)*

> *"Buying process of software is quite unclear, but it starts from a need - forced need or something else. For example, we currently have a Product Data Management project going on, where we had a forced need to change our version because the old system is ending soon." (Interviewee 8)*

Within Prospect 1 the need identification stage was considered to be the most important stage during the whole acquisition process. In Prospect 1, the need refers to a situation when "certain things are needed to take care of differently than they have before." On the other hand, within Prospect 2, the special aspect within the need identification is that they have a goal within the software acquisition processes that the need comes straight from the future users of the software, not from the IT department. According to interviewees from Prospect 2, when the actual users notice the need for some kind of software, the software is actually more necessary.

4.1.2 Requirement Specification, Information Search and Project Team Formation

After the need has been correctly identified, the second stage during the acquisition process varied between the prospects. The next three stages within the prospects tend to be *specifying the requirements*, *information search* and *forming the project team.* However, these occur in various orders. Four prospects identified all these three stages as part of their software acquisition process, and seven prospects identified at least two stages. The results of the study also suggest that specifying the requirements is considered the most important stage when carrying out the software acquisition process for medium to large size Finnish industrial companies, because a total of six interviewees stated that to be the most crucial stage for successful project.

> *"One gets what one orders. Specifications are almost the most important stage… In fact, when the specifications are done properly, it is hard to go wrong after that." (Interviewee 2.2)*

> *"The most important stage is specifying the requirements and building a requirement matrix because it is all based on that. If we do not know what we want to buy, then we are not getting that either." (Interviewee 4)*

Specifying the requirements does not only include the present needs within the prospects, but also the future needs are considered. In fact, according to Interviewee 8 the goal of this stage is to survey today's needs for the software and at the same time try to expand the understanding for the future needs. In two of the prospect companies, this stage might also be considered as its own project which highlights the perceived importance of specifying the requirements. Within Prospect 3, a requirement specification during a recent software acquisition project was carried out by a chosen external consulting company. According to Interviewee 3, an external consulting company was chosen to be utilized because the project was considered so important and the requirement specification needed to be done properly. Also, the interviewees from Prospect 2 mentioned that there are cases when this specific stage has been externally taken care of by a consulting company. They also added that the chosen company for defining the specifications can be chosen either directly, or after competitive tendering.

> *"If we have a bigger software project it might be split so that the specification of the requirements can be done as its own project. And that project might have a totally different supplier so there can be a consulting company that does only the specifications." (Interviewee 2.1)*

Five of the prospects utilize the nature of the project teams for carrying out software acquisition processes and forming a project team is also considered to be a stage in the beginning of the buying process. Building a project team is not

always an easy task for companies to carry out. When building a project team, the chosen project manager tends to have a big role before the team reaches its full form. Within Prospect 7 for instance, the Project Manager is the one to ask from the needed employees superiors if they are available for the project. Similar to Prospect 7, also within Prospect 5's acquisition processes project team formation is mostly carried out by the Project Manager. According to Interviewee 5, the goal is to have a project team that includes specialists from all possible sectors what the acquisition might influence. This way every aspect in the rest of the buying process is likely to be considered, which is believed to give the best results. In addition, a project team may also have a Steering Committee which helps to form of a project team. In Prospect 7, a Steering Committee participates in the software acquisition process if the investment is relatively big.

Within Prospect 8, before the project team reaches its full form, the project manager's job is to discuss with employees about the future project. According to Interviewee 8, these discussions are important because when organization wide investments are done, what software acquisitions typically are, it is crucial that every departments' needs are taken into consideration. These discussions also have an effect on how the project team is formed because after the discussions the project manager will have a better idea of what kind of software is needed and which employees would be the best ones to be a part of the project team.

> *"All the developments start with discussions and clarifying things. In order to even research those things, you have to go talk to every person and discuss. That is how you will, little by little, find out what is the challenge and if we can do something about it. At least for us it has worked out well, the cooperation and communication with clarifying things. If a project has been carried out by some insiders it has usually not gone that well and they have gotten bad feedback. And those projects have needed to be fixed afterwards because they have not examined enough and the acquisition affects some other department too, for instance." (Interviewee 8)*

Next stage in typical software acquisition process tends to be searching for information about the potential suppliers. This stage tends to occur after the requirements are specified and the project team is formed, and in fact, if the projects are carried out by a project team, they tend to be the ones to take care of the information search. The results of this study suggest that typical sources to gather information from potential suppliers for software acquisitions are existing network and Internet search engine tools. These are also sometimes combined to get better understanding from a specific sector.

> *"I, for example, just had a little more specific purchasing project, so it is with this networking how we operate in those situations. So, we search from Google and then we ask from other players if they know other suppliers. So, the IT-sector works in a way that I ask from one of our suppliers if they know any players who work with*

these kinds of more special devices. And the player was found like that too, so this is how the things move forward." (Interviewee 1)

The information from the network tends to be highly respected within IT related acquisitions. According to Interviewee 4, this is because of the experiences that the members of their network possibly have are valued as better information than the basic information from the Internet search engine tools. However, other type of information that the prospects tend to gather are the financial reports for which Internet search engine tools are used.

Within Prospect 5, this stage was considered the most important stage during the whole acquisition process. Its importance was highlighted by Interviewee 5 due to its crucial role of getting the right software. According to Interviewee 5, because the company itself is mostly in charge of the information search and a lot of times there is many potential suppliers, it is crucial that this stage is done properly. An interesting fact that was brought up by Interviewee 5 is that many potential suppliers for IT specific acquisitions are identified already before the need exists. This is because a lot of the times software providers have contacted Prospect 5 before the need has existed. According to Interviewee 5, if the company happens to have an already existing offer, it helps the information search process when the right kind of need occurs.

"Sometimes the software providers contact us and that is how we get the first impulse. Then again, if we are contacted and if it is not crucial right at that moment, those things are saved, and we can get back to them. Then by going through these older contacts and using search engine tools, we are trying to get to know the providers available." (Interviewee 5)

Similar to Prospect 5, Prospect 7 also utilizes old contacts at this point of the acquisition process. In fact, Interviewee 7 was the only interviewee who did not identify information search as one of the stages during the acquisition process, which was because of the big role of old contacts. According to Interviewee 7, potential suppliers are mostly identified from the old contacts that are sent towards Prospect 7 before the need has even existed.

"Well, different software operators contact us a lot and all the time. Contacts appear almost weekly from different software operators. Apparently, it is LinkedIn what they use to get information and then call the right people. In addition, of course when you have worked in this field already before the current company, you know operators and you have history with different operators so I can ask from the good ones if they would be interested because I know they can get the job done. From those operators which I have a positive image. Or then during trade fairs I meet operators and I might contact them if a good case appears." (Interviewee 7)

4.1.3 Requesting and evaluating proposals

After the information about the potential suppliers is searched, companies tend to move to *requesting for proposals* from potential suppliers and then *evaluating the proposals and suppliers*. Request for proposals-stage was identified by six prospects, whereas evaluating proposals or evaluating the suppliers was identified by all of the prospects. Only within Prospect 7, another stage was identified at this point of the buying process, which is sending *proposals for investment* to the board before evaluating the potential suppliers.

According to Interviewee 1, the goal for requesting and evaluating the proposals is to identify the best options from the group who the proposals are sent to. In addition, Interviewee 1 stated that within their company, evaluating the proposals leads into the *negotiations* with the potential suppliers which is the next stage. Similar to Prospect 1, also within prospects 5 and 7, evaluation stage is followed by the negotiations with the best alternatives. In Prospect 4, the evaluation matrix that was built during the requirement specification stage is now used for evaluating the received proposals. According to Interviewee 4, the goal is that the matrix used for evaluations is built well enough and it leaves the company with an easy decision of who to choose. When the proposals are evaluated, Prospect 4 also possibly *requests for quotations* from other suppliers. The idea for requesting the quotations is to ask from other possible suppliers, if it was possible for them to offer the solution which seemed to be the best option found from the proposals.

> *"With bigger projects we have a bidding contest, and in most cases, it happens in a way that first, we ask a Request for Proposal and then we go through the proposals to find out which options suit us the best. And after that we do a quotation round where we possibly ask someone's offer from other suppliers: Is it possible for you to do this?" (Interviewee 4)*

4.1.4 Demonstrations as a competition and choosing the best supplier

After the requests are evaluated and the possible negotiations have been carried out, in five of the prospects the next stage is typically to *choose the best supplier*. However, within prospects 3 and 6, another stage before choosing the best alternative is carrying out *demonstrations* and evaluating them. Within Prospect 3, three best alternatives were requested to make a demonstration version of the software they were offering and to present it for the buying center. This *demonstration* stage was considered the other most important stage. According to Interviewee 3, before the demonstration stage they had a clear favorite to become a supplier, but they ruined their chances with a bad performance during the demonstration stage. In addition, Interviewee 3 stated that after making this stage from the bigger group of potential suppliers, demonstration was the stage where the final differences between suppliers were made.

> *"Well, that demonstration was really important. One group most likely lost the deal, when they had not done their homework well enough. We did not get any kind of idea of the software, it could have been really good and it was the favorite for us before the demonstration. But then when they came here for demonstration, it did not work out at all. They were fumbling and we did not get any idea of the software and hence, we could not continue with them. And we felt like they were not serious with us." (Interviewee 3)*

Choosing the supplier did not get any special attention from the majority of the prospects, because the choice is based on the proper evaluations. However, in Prospect 4, where the evaluation matrix is utilized during the earlier stages the process remains more rational than in other prospects. Consequently, also this stage of the acquisition process differs from the other prospects. According to Interviewee 4, the final decision within Prospect 4 is highly based on the requirement matrix built earlier, and the goal is to make analytical and rational choices based on the numerical values got from evaluating the matrix. In order to do this, the potential suppliers are evaluated anonymously which enables Prospect 4 to eliminate random variables, e.g. personal preferences. According to Interviewee 4, individual preferences are very common especially in the IT sector, which makes it even more important to go through this stage anonymously.

> *"In IT-sector it seems like these preferences are pretty tight about the suppliers and it does not necessarily make the project easier. So, in that sense, anonymization is very important with answers in order to get best possible results. I am not saying that typically, but still noticeably, favorite suppliers have not done well in open competitions like this." (Interviewee 4)*

When analyzing the results from the requirement matrix, Interviewee 4 stated that the first step is to look at the Show Stopper-questions. These questions are based on requirements what the supplier needs to offer for it to have a possibility of being chosen. After those questions are checked, supplier candidates are evaluated using the numeric values received from the matrix.

4.1.5 Request for purchase

Within the prospects 1, 2, 6 and 8, *requesting for purchase* from the board is identified as the next stage of the buying process. For example, during the acquisition process in Prospect 1, sending requests for purchase is dependent from the size of the project: smaller projects can be accepted locally, and bigger ones may go all the way to the president for approval. Similar to that, before entering the stage of requesting for purchase within Prospect 2, it is determined whether the project needs its own investment project or not, which is dependent from the size of the investment. If the cost of the purchased product or service is relatively small, it goes *as a direct purchase* but if the amount of money used increases significantly, a specific investment project for the process is needed. If the project is considered large enough, the buying process moves into the *capital*

investment request, which must be accepted by the board. Also, a *management of change request* needs to be accepted within Prospect 2. This refers to a process where the product or service to be purchased is determined more specifically and the people needed to approve the project are selected.

As mentioned previously, Prospect 7 went through a similar stage, sending a proposal for investment to the board, already in the beginning of the buying process. This does not remain as the only stage that was identified only by Prospect 7, because at this point of the acquisition process, they are the only ones to carry out another requirement specification. This stage is carried out together with the chosen supplier.

4.1.6 Demonstration with the chosen supplier

Before the final stage of the software acquisition process, there were two stages that were identified during some of the prospects' processes. Within prospects 1 and 2, the next identified stage after the board has accepted the request for purchase is *to order the purchase*. After this stage, both prospects move on to the *demonstration stage*. This demonstration differs from the demonstration used by prospects 3 and 6, because at this point of the process, there is only one supplier left. In other words, when the point of the demonstration within prospects 3 and 6 was to evaluate potential suppliers by seeing the demo versions of the future software, the point of the demonstration at this stage is to make sure that the future software will meet the requirements agreed before.

According to Interviewee 1, the crucial part during the demonstration stage is the correct interpretation of the results. Interviewee 1 stated that user's view of the needed software differs from the software developer's view quite often and it is important that they speak the same language and that a compromise between their opinions is found. Consequently, Interviewee 1 also stated that it is important to realize that the user's view is not always right, and you have to be open-minded with new ideas.

> *"Even though user's view always comes first, it does not necessarily mean that it is the only right one. We think that we also have to be able to evaluate our procedures." (Interviewee 1)*

Within Prospect 2, the demonstration stage is called the "piloting stage". The idea behind the piloting stage in Prospect 2 is to include a stage within the contract with the chosen supplier and make sure that it is possible to get out from the contract if the software does not meet the requirements of the contract. Interviewees 2.1 and 2.2 believe that this does not only allow the company to check the software before launching it, but also motivates the supplier more, which will result in a software more likely to meet the requirements.

> *"In software projects when you are making the purchase, you must include in the contract that they will do it until a certain stage and then maybe a piloting-stage*

> *during commissioning. So that we can motivate the supplier to develop it until the end and not just give us a draft that is not usable." (Interviewee 2.1)*

The third prospect where the demonstration stage is utilized during this point of the acquisition process is Prospect 7. According to Interviewee 7, the demonstration stage, which is called as a Proof of Concept (POC) within Prospect 7, is not always necessary but rather occasionally used during the software projects before the final purchase. If the software from the chosen supplier does not meet the requirements, Prospect 7 has still a chance to break the deal after the POC stage. According to Interviewee 7, breaking the deal at this stage is very rare thing to happen, but it is used because it gives the company more security.

> *"Usually we go with the operator who did the POC, because they already know how it works. Basically, it is just a way to reduce the risks. And then, if it seems like the cooperation does not work or the product is just not technically good enough, we still have a chance to change. Hence, it is like a back door."(Interviewee 7)*

4.1.7 Final decision

Whether the prospects utilized demonstrations or not, at this point of the acquisition process all prospects are at the final stage of the process – *making the final decision*. Despite the little differences, the idea of the last stage remained similar between the prospects. In fact, the only interviewee to really highlight the importance of the last stage was Interviewee 4. He stated that the final step before the deal comes official is *making the contract.* Different from other interviewees, Interviewee 4 was the only one to highlight the importance of the contract as a part of the buying process. He stated that the decision of the supplier is always conditional, and it only becomes official if a satisfying contract for both sides happens. If not, another supplier is typically chosen.

4.2 Composition of the buying center within software acquisitions

4.2.1 Need identifier

As previously presented, the software acquisition process is considered to start from the need identification by all of the interviewees. In the light of the buying center, it can be stated that *the need identifier* is the person to launch the buying process and hence, he or she is the first identified member of the buying center within software acquisitions. For example, according to Interviewee 1, the need can occur anytime and anywhere and the person (or people) identifying the need can be considered the starter(s) of the buying process. In addition, Interviewee 1 stated that within the software acquisition projects the need can come from

person being interviewed or straight from the users. The role of the future users was also highlighted by other interviewees. Interviewees from Prospect 2, for example, state that within their company the aim is that the need for the software acquisitions comes directly from the user side. They also stated that this makes the actual users of the needed software the most likely individuals to take the need identifiers role in the buying center.

4.2.2 Project teams

Within the prospects 4, 5, 6, 7 and 8 most of the buying process is carried out by the *Project Team,* which is formed according to the special needs of the software acquisition. Thus, the formation of the project team is very context dependent and it can include different people from many different departments within the organization.

> *"Well, the person who identifies the need, usually does the initiative. And depending from the size of the project, the identifier is a person or a group. And still depending from the size of the project, the project team includes the need identifier(s) and the buyer. Or possibly also a controller or a unit manager or other people come along." (Interviewee 4)*

> *"Well, in our organization we go with the nature of project teams. So, we take specialists from that specific field and build a project team from these people. In fact, that project team is a part of the project from the beginning to the end. So really, from the searching of the suppliers, evaluation, and then in the acquisition starting with when the decision is made and all the way to installing." (Interviewee 5)*

The project team always includes a project manager, who plays a big role during the formation of the project team. According to Interviewee 5, the project team usually contains a project manager, specialists of the specific field of acquisition, and the future users of the software. At the time when the interview was carried out, there was an ongoing software acquisition process related to product data management within Prospect 5. Within this process, the project team was also formed by using the same basic pattern.

> *"For example, with that product data management project, I am the team manager and then there is person X, who is in charge of the product data management and therefore, he is the specialist of that field in our organization. Then there is our manager of communications, who will use the future software as a tool in everyday work quite often. With this group, we are able to create a comprehensive picture from our needs for the software." (Interviewee 5)*

Similar to Prospect 5, Interviewee 6 highlighted the importance of including the future users within the project team. According to Interviewee 6, when the project team is formed it is crucial to include the actual users of the future software within the buying center. In addition, she stated that including the

future users within the buying center is important especially because that makes it more likely that the chosen supplier will find common language with the buyers. Interviewee 6 also argued that if the buying center does not include the actual users, the purchased software may never reach its full potential because it is not used as extensively as it would with better planning.

When building a project team, the project manager's role is to find the best possible solution for that specific acquisition. Different from other prospects, interviewees 7 and 8 brought up the importance of getting the best possible resources for a specific project during the acquisition processes. According to Interviewee 7, the project team is desired to contain specialists from different sides of the organization who will be part of the project or using the chosen software. However, he added that this task is not always as easy as it sounds because the project manager must make sure from the superiors of the needed employees that these employees are available for the project. As an example, Interviewee 7 stated that the project team may contain the following specialists: Project Manager, Chief Technology Officer, Quality Manager, ICT Manager, Chief Operating Officer and Manager of Conceptual Design & Analysis.

Similar to Interviewee 7, Interviewee 8 highlighted the importance of having the best possible people for carrying out the project. The aim within Prospect 8 is that the buying center will include people from all departments that the future software will influence. Consequently, Interviewee 8 stated that the employees who have knowledge from more than one department are typically pursued to be part of the project team. According to Interviewee 8, when all the departments that the acquisition will directly affect are covered, it will help the future development and maintenance of the software. In addition, Interviewee 8 stated that this stage of the buying process sometimes remains quite difficult due to the busy schedules of the employees. As a result, these projects typically must be taken care of alongside other tasks.

> *"Everyone is quite busy, and since the participants have to take care of the project along the other tasks, you have to consider when to start the project and which employees are available. In fact, I have noticed that these resources are almost the most difficult thing during the process." (Interviewee 8)*

When utilizing the nature of the project teams, this team is typically in charge of carrying out the software acquisition process. However, three prospects (Prospects 1, 2 and 3), did not bring up the role of building a specific project team for acquisitions. With Prospect 3, this is a normal outcome due to the smaller amount of the employees within the company and hence, smaller amount of people within the buying center. However, during the software acquisition process within Prospect 3, the core people for carrying out the buying process remained the same, which is similar to the idea for the project team within the other prospects. Similar to Prospect 3, also within prospects 1 and 2, the core people during the software acquisition processes tend to remain the same. Prospects 1 and 2 tend to highly trust on their IT departments, as in Prospect 1, the ICT Service Manager participates in six out of ten identified stages and in

Prospect 2 the IT Department has an effect on seven from nine identified stages during the software acquisition process.

4.2.3 Network

Whether there is a specific project team for carrying out the software acquisition process or not, specifying the requirements and information search stages are typically done by the core people of the buying center. However, prospects 2 and 3 brought up the utilization of *external consulting companies* for specifying the requirements, which makes this company included within the buying center. In addition, during the information search, the importance of the *network* as a source of information was mentioned by most of the prospects. Utilizing network's information at this point of the acquisition process tends to refer to information from other operators in the market, other sites of the same organization, sister companies, other organizations of the same concern or IT service providers with whom the prospects have already a contract with. In fact, interviewees 6 and 8 highlighted the importance of these already existing partnerships with IT service providers and both stated that the current partner is one of their main sources for information search within software acquisition processes.

Another fact that highlights the importance of the network within the buying center, is the highlighted role of existing offers during the software acquisition processes. Interviewees 5 and 7 stated that these offers are one of the main sources for information search. This means that within prospects 5 and 7, an extensive usage of Internet search engine tools or asking for information from other companies is not as important for them.

4.2.4 Purchasing Department

Moving towards requesting for proposals, evaluating the proposals and choosing the best supplier, the project team or other core people are mostly in charge of the buying process. However, at this stage some of the prospects highlighted the role of the *purchasing department*. Interviewee 1, for instance, stated that when evaluating the proposals from the different alternatives, the important function for the purchasing department is to identify whether the possible suppliers are acceptable option for the company in business terms (e.g. willing to follow the policies). Then again, when the negotiations with the possible suppliers start, the purchasing department's role is to make sure that all company regulations are fulfilled, whereas Interviewee 1's role is to work as a technical assistant.

> *"My role in these negotiations is to, more or less, be a technical assistant. My job is to make sure that the deal what we are make will respond to our needs. This is because the purchasing department does not always know what we exactly need. But on the other hand, they know all of our rules about purchasing and all these kinds of basic things where we do not focus." (Interviewee 1)*

On the other hand, within Prospect 4, Interviewee 4 working as a buyer in software acquisitions takes the biggest responsibility for making sure that the evaluation is done properly. This happens even though a specific project team is formed earlier in the buying process. When analyzing the proposals, Interviewee 4's responsibility is to make sure the anonymization of the suppliers is done properly. The idea is that the rest of the team does not know the names of the suppliers before the numeric values from the formed requirement matrix are known.

> *"After we get the suppliers' answers for the matrix and we have possibly done some corrections with the questions, the basic idea with these bigger investments is that the rest of the team does not see the answers at all. They come straight to me and I do the anonymization of the suppliers - A, B, C, D – and then we look on Excel how it looks." (Interviewee 4)*

The other specialty within Prospect 4 is that according to their official rules, the purchasing department is the one to make the final decision about the supplier. However, the goal is to make decisions as a group, but in the end, the purchasing department has the biggest deciding power.

> *"Well, according to our official rules, the purchasing department is the one to choose the supplier. So basically, we do the preliminary choice but if we think about the whole decision process, it is always a group decision." (Interviewee 4)*

Also, during the software acquisitions in Prospect 7, the purchasing department has its own role towards the end of the buying process. In fact, within Prospect 7, the purchasing department is typically represented by a single buyer, who is already chosen after the need is identified. According to Interviewee 7, the buyer is part of the buying process when the supplier options have been limited to few, and at this point, the buyer's responsibility is to negotiate the terms of the contract better. After the supplier is chosen, the purchasing department is usually no longer part of the rest of the buying process in Prospect 7. Similar to Interviewee 7, also Interviewee 8 stated that the purchasing department mostly participates to the buying process towards the end. In addition, Interviewee 8 stated that within their company, people from the purchasing department are the ones to make the final purchase happen and hence, they also play a key role within the buying center.

4.2.5 People with the biggest deciding power

Finally, the last important part of the organization to participate in the software acquisition process that was identified is the people with the biggest deciding power. This part varies between the different organizations and different projects, but most commonly it refers to the *Board members*, or more specifically to the *CEO* of the company. However, these members do not always participate in the buying process, which is typically related to the size of the investment. According

to interviewees from Prospect 2, if the size of the software acquisition is smaller, the local IT manager has the biggest power. The IT manager can accept the order, which is followed by the purchase request by the purchasing department, which again is accepted by the IT manager. On the other hand, within the larger purchases in Prospect 2, the project for investment is launched and requests for capital investment and management of change are proposed. These requests must then be approved by the board of the Prospect 2 in order for the project to continue. The deciding power of the board was identified as one important factor of the buying process also by interviewees 5, 6 and 8.

Within the software acquisition process in Prospect 3, the CEO of the company had a major role during the whole buying process and hence, his separate approval was not necessary. Different from other prospects, instead of including board members to the end of the buying process, within Prospect 7 the same kind of role is played by the formed *Steering Committee*, whose main task is to guide the formed project team. Even though the project team is the group to mostly in charge of carrying out the acquisition process, Interviewee 7 stated that the Steering Committee is the group with the biggest deciding power.

"The Project Manager brings the project forth in accordance with the goals that the Steering Committee have set." (Interviewee 7)

The steering committee within Prospect 7 is formed in the beginning of the buying process, when the project team is also formed. However, similar to the role of the board, the steering committee is not necessary if the size of the investment remains relatively low. The people participating in the steering committee tend to come from the upper levels of the organization. According to Interviewee 7, the steering committee for the chosen project team might include roles like Chief Technology Officer, Head of Digitalization, Senior Vice President of Business Development, Vice President of Research & Development and Vice President of Operations for instance.

4.3 Factors affecting the buying process and the buying center

4.3.1 Environmental factors

During the software acquisition process, there are certain factors that influence how the acquisition process is formed. These factors can emerge either directly or indirectly, and they also may have an effect on the composition of the buying center of the software acquisition processes. The results of this research most clearly highlight the effectiveness of environmental factors, referring especially to the *type of needed software,* in both the formation of buying process and buying center. In fact, the type of the software directly affects the composition of the buying center within the acquisition process in Prospect 2. When referring to Prospect 2, the future users are included in the buying center. More specifically,

interviewees from Prospect 2 stated that the goal within their company is that the need for a software is identified by the users of the future software, which makes the type of the software directly affect the composition of the buying center. Prospect 2 wants the future users to actively participate the buying process, which makes them an important of the whole process.

Technological aspects related to software type were stated to have a bigger role within the decision making than the price of the software. For instance, interviewees 7 and 8 both highlighted the importance of the type of the software within software acquisition processes. According to Interviewee 8, the price does not get any special attention before the final decision within software acquisition processes. Rather than price, environmental factors related to *future visions, being able to integrate the new software with old ones* and *the potential to develop the software* are factors that were highlighted by Interviewee 8. In addition, Interviewee 8 mentioned that the possibility to integrate has grown in importance especially within the recent software acquisitions. Interviewee 8 also stated that the project team's vision of the growth and development potential of the offered software have big impact on which supplier is chosen.

Similar to Interviewee 8, Interviewee 7 also stated that even though the price of the software matters, it does not get any special attention. In addition, Interviewee 7 mentioned that the vision from the future software together with the organizational goals are more important than the price. However, he also added that since the steering committee uses the biggest deciding power during the buying process, in the end, the factors that they consider to be the most important are the deciding factors.

Another interviewee to highlight the importance of the possibility to integrate the software was Interviewee 5, who stated that the purchased software must be acceptable today but also in the future. In addition, he suggested that the software must be able to integrate with other systems. According to Interviewee 5, fulfilling the special needs with software acquisition does not only include the current needs, but before choosing the best option among the alternatives, the company must also be guaranteed that the software is acceptable in the future. The future aspect includes the requirements for technical development of the software and meeting the customers' needs. In addition, due to the fact that Prospect 5 has been growing in recent years, Interviewee 5 stated that when acquiring software, they have to consider if the acquired software will meet the requirements of a bigger company.

Future aspect can also be considered to focus on the chosen supplier, rather than only focusing on the technological aspects of the offered software. According to Interviewee 8, potential suppliers are evaluated in both technical and business terms before the final decision is made. He stated that if it seems the supplier is relatively small and cannot guarantee a big enough capacity, they are usually left out even if the software for the needed requirements seems proper. Similarly, Prospect 6 also highlighted the importance of *the size of the supplier* before the final decision. According to Interviewee 6, bigger size of the supplier is considered to give more security for the future.

Environmental factors also refer to the changing business environment. Business environment's effect on the software acquisition process was highlighted by multiple prospects within this study. According to Interviewee 5, the fact that has changed the business environment in recent years has been the development of the digital tools. This has affected company's every day operations in a way that their customers require more from them. Therefore, they receive more pressure to stay on top of the development. Interviewee 5 also stated that due to the digital development, the interaction within the supply chain is easier, and the feedback can come from further down the supply chain than previously.

> *"We get quite lot of feedback from our customers today. In fact, it is kind of a lot of pressure. It has moved further down the supply chain where the feedback is coming from. Things must be digital. Simple things like product data, documentation, etc. The availability and being able to purchase online, various things like that." (Interviewee 5)*

Similar to Prospect 5, the growing demands from the customers are also considered to affect the software acquisition process within Prospect 7. According to Interviewee 7, there is a trend in the field of their industry that companies must be able to offer more information. This has made the customers more demanding. Interviewee 7 believes that in order to respond to their customers' requirements and be successful in the future, the role of IT and especially software has to keep increasing within their business.

The third prospect to highlight the effectiveness of customer demands was Prospect 8. According to Interviewee 8, the changing business environment is a factor that has a major effect on the formation of the buying process. Especially the fact that the company has many large organizations as their customers sets some requirements also in Prospect 8's own performance. Interviewee 8 stated that these customers utilize IT widely within their everyday operations. Therefore, they also require similar utilization of IT from their suppliers. This has forced Prospect 8 to improve their electronic documentation and to offer more information about their products.

> *"Our customers use very large software which makes them require a lot of information in their systems from us too. We have to produce lot of data for our customers. In that sense, you could say that the function of this factory has changed. We are not only delivering products anymore but also electronic documentation to our customers. So in that sense the world has changed a little and that also sets requirements for our software." (Interviewee 8)*

The specific business environment can also be considered to affect the software acquisition process if the company has multiple sites which all use the same basic systems. Within Prospect 1, these factors play a big role for what kind of software is acquired because the company has many sites in Finland. Hence, according to Interviewee 1, the acquired software within Prospect 1 must have the possibility

to be used at multiple sites. In addition, he stated that the fact how a company's business environment is built years ago affects the decision making process. This also refers to the need to possibly integrate the old systems with new which was also highlighted by other prospects as stated previously.

> *"It might be the case that the user here thinks "this is good". But overall, we are trying to make general systems, for example our systems have to work in other locations too. However, the sites are not identical and even if we try to achieve synergy, the locations and old machines alone create more pressure on that." (Interviewee 1)*

Similar to Prospect 1, also Interviewee 3 stated that the specific industry had a big effect during their software acquisition process. Because of the very specific industry it is hard to find fully packaged software, but on the other hand, Prospect 3 was not willing to go with the entirely customized software due to the high cost.

> *"Not choosing to use customization was a big thing for us. Because when the updates come, you have to do the customizations over and over again. It is really expensive to have that kind of software. So basically, we tried to choose a software that's basic version was already pretty good for us." (Interviewee 3)*

Factors that influence which supplier is chosen varies between the context of the acquisitions and the different prospects. Compared to other prospects in this research, Prospect 4 is the only one to use the requirement matrix, which makes the buying process the most rational and analytic process out of all companies. Using the requirement matrix makes the organizational and environmental factors have the biggest role within Prospect 4. This is because individual and other factors are trying to be eliminated by using the matrix.

4.3.2 Interpersonal factors

Referring to interpersonal factors, all prospects of the research somehow mentioned *the role of their network* during the acquisition process, most typically when prospects are searching for information about the potential suppliers. Consequently, the most typical way for the network to affect the formation of the buying process is by providing information for the buying center. According to Interviewee 1, during the information search stage the existing network was considered as one of the most important sources. This may affect the rest of the buying process if networks opinions are highly respected. Similar to Prospect 1, also within Prospect 4 a lot of information during the information search and requirement specifications from company's network is utilized. Interviewee 4 stated that information from the network is utilized because Prospect 4 does not want overlapping acquisitions with their sister companies and hence, the relationship within the network is very interactive.

> *"And of course, we are in touch with our sister companies if it is needed so no overlapping acquisitions occur. In fact, we are on the same team with one of our sister companies nowadays. This means that the dialogue with them is ongoing." (Interviewee 4)*

Within prospects 6 and 8, the role of the network refers especially on the existing partnership contracts with IT service providers whose role both of these prospects highlighted. According to Interviewee 8, if their partner in IT sector is able to offer solutions for company's needs, they will usually be chosen. However, Interviewee 8 stated that with the software acquisitions the service provider only does projects with certain operating system, which leaves an open window for other providers. Adding to the big influence by this specific service provider partner within Prospect 8, their opinions are highly respected even if they cannot provide the needed software themselves. Due to the big influence of the service provider, interpersonal and environmental factors can simultaneously influence the formation of buying process. This is because the type of the software, which refers to environmental factors, directly affects on whether the existing partner can provide the needed software or not. On the other hand, the contract with the service provider highlights the interpersonal aspects.

Adding to the importance of the network, the results of this study suggests that the supplier familiarity can have a big effect on the formation of the software acquisition process. According to Interviewee 1 for instance, if the supplier is already familiar with the Prospect 1, the buying process remains more routine and hence, relatively shorter.

> *"If we have a familiar supplier, we already have their information in our system, so we can just make a purchase request and order and so on. It is a routine, normal business approval. But if we have a completely new player, we have to accept them as our partners and that is already one stage before we even get to the purchase request." (Interviewee 1)*

Similar to Interviewee 1, Interviewee 7 stated that the familiarity of the supplier can have direct effects on the formation of buying process. According to Interviewee 7 if the chosen supplier is familiar with the company, the buying process might remain shorter in terms of the usage of time. Within Prospect 7, the familiarity of the supplier affects especially on whether the POC-stage is needed during the buying process or not. If POC is used later in the buying process, *the outcome of this stage* also influences how the buying process continues after this.

> *"If we have history together, the specifications might be little looser, and we do not have to follow their doings because we know how they operate. And the project control might be looser too. In fact, things like POC are more important when the chosen supplier is new." (Interviewee 7)*

Towards the end of the buying process, the relationship with the possible supplier was highlighted by three prospects. Prospects 5 and 6 stated that finding the common language between buying and selling companies is crucial before it is decided which supplier is chosen. More specifically, Interviewee 5 stated that it is important for the selling company to understand how things must be presented for the buying company.

> *"It is also important for these selling companies to understand that there is not always an IT-specialist on the other side. You have to find the common language, because it is hard as a buyer to buy something that you do not know anything about." (Interviewee 5)*

Similar to finding the common language between buying and selling companies by prospects 5 and 6, the role of the selling company's technical sales specialist was highlighted by Prospect 4. Interviewee 4 stated the technical sales specialist may have a big effect on which supplier is finally chosen at the end of the acquisition process. Interviewee 4 added that the technical sales specialist is frequently the main contact during the buying process for Prospect 4, which increases the importance of his or her role.

> *"Well of course the supplier's technical sales specialist who is our main contact plays a very important role. From my point of view, a good sales person challenges our needs. Not in a way that they would criticize straight to my face, there has been those situations too, but more so asks directly - Why have you done it this way because I would do it differently?" (Interviewee 4)*

An interesting finding related to Prospect 1 was that a factor to affect the buying process is the *relationship between the site that needs the software and the board*. According to Interviewee 1, the role of this relationship grows more towards the end of the buying process when the board needs to accept the purchase before it is implemented. Also, due to the fact that Prospect 1 is a big company with multiple levels, the costs they deal with are big, which makes it hard for one particular department to get every need accepted. Because of this, Interviewee 1 stated that *marketing the investment* to the board has become recently very crucial.

> *"Lot of the times this development goes so that we have many needs which we try to market to the board. So, it is all about how good we can bring them up, because we do have bigger and smaller needs… How do we get resources which are quite a challenging to get nowadays. Even though we have a big ICT organization, only the normal challenges for maintenance alone are already huge." (Interviewee 1)*

4.3.3 Organizational factors

Especially in the beginning of the software acquisition process, factors related to organization specific goals and needs play a big role when considering how the buying process is formed. When a need occurs, it is typically related to

organization specific needs which then results as a goal to fulfill this need. These goals and needs tend to be in the background throughout the whole buying process and hence, affect the formation of the process when it moves on. In fact, Interviewee 7 stated that organization specific goals are one of the most important things to affect the formation of buying process together with the vision of the future software. On the other hand, future visions which was previously considered as an environmental factor, also relates to organizational factors. As an environmental factor, future visions are related to the changing business environment, whereas as an organizational need, future visions refer to the organization specific needs in the future.

Together with the type of the needed software relating to environmental factors, also the *size of the needed investment* was identified to affect both the formation of buying process and the buying center within software acquisitions. The size of the investment can be considered to relate to organizational factors and within Prospect 1 for instance, this size of the acquisition plays a big role towards the end of the buying process. According to Interviewee 1, the smaller acquisitions can be accepted locally, whereas bigger investments might have to be accepted by the President of the Company. Similarly, also within Prospect 2 the size of the investment tends to have an effect at the end of the buying process. According to Interviewee 2, the size of the investment mostly affects on who is the person to make the final verification of the purchase. If the monetary value of the investment remains low, purchases tend to be accepted and ordered locally. On the other hand, within the bigger investments, higher roles within the company are needed to approve the purchase.

This mode of operation exists also in Prospect 7, as Interviewee 7 stated that the size of the investment is one of the biggest things that defines how the process will move on after the buying process is launched. If the investment is big in monetary terms, the buying center will include the Steering Committee and if the investment is smaller, there is no need for Steering Committee to participate. Because the Steering Committee uses the biggest deciding power within the buying center, it can be stated that its participation can make a big difference within the buying process. Thus, it can be stated that the size of the investment will have an effect on how the buying process is formed within the Prospect 7.

Related to the size of the investment, the role of the *price* was highlighted by two prospects. This is different from prospects 7 and 8, whose interviewees stated the price does not have as big effect on the decision-making process than other factors. Within Prospect 4, who utilize a requirement matrix during the buying process the price was stated to be a big factor when making decisions between different suppliers. Interviewee 4 stated that when the results from the requirement matrix are being analyzed and the suppliers evaluated, besides the numeric values, the *price* is the fact that matters before the final decision of the supplier. In fact, there have been situations where compromises due to the prices of different options have been made within Prospect 4.

> *"And of course, price is always a fact that matters. Sometimes we might do an exception even if supplier A gets 187 points and supplier B 180 points. So, B gets less, but it is noticeably cheaper. Then we look if we can do a compromise and try to think if we can manage with those shortcomings. It is little bit the same as when you are buying a TV in an analytical way for example. You do the same kind of comparison. Or car or whatever, but those comparisons you will do." (Interviewee 4)*

Similar to Prospect 4, the importance of price before the final decision was highlighted in Prospect 5. According to Interviewee 5, once the software acquisition process reaches the evaluation and decision stages, price is one of the three important factors to affect the final decision.

> *"Well of course, the software must respond to the needs that we have and obviously, the price always matters. There are quite big challenges to understand what you get with the money you pay. The most expensive is not always the best and neither is the cheapest one." (Interviewee 5)*

4.4 Summary of the results

To summarize the results of this study, software acquisition process remains as a complex and very context dependent process which is affected by multiple variables. However, despite the complexity of the software acquisition, the process was defined as a set of sequential stages by all of the prospects. An overview from software acquisition process within the prospects of this research can be the seen in Figure 9 where the extended research model is presented.

Software acquisition process occurs when any kind of *need is identified*. This was considered as a first stage of software acquisition by every interviewee of this study. Next three stages (stages 2-4) varied between different companies, but on average these stages were s*pecifying the requirements, forming a project team and searching for information* about the potential suppliers. The order of these three stages varied between the prospects but within all companies where these stages were identified, they occurred as the next stages after the need identification.

The next stages during the software acquisition process within the prospects tended to be related to sending and evaluating proposals. First, companies *send requests for proposals* to potential suppliers they have identified during information search, which is followed by *evaluating these proposals*. These two stages were identified in six informant companies. Only prospects 2 and 7 did not identify the request for proposal-stage as part of their buying process. On the other hand, both prospects identified evaluating the potential suppliers as its own stage. In addition, within Prospect 7 *the proposal for investment*-stage was identified to be a part of the beginning of the buying process, which differs from four other companies where this stage was identified as one of the final stages of the buying process.

Prospects 1, 5 and 7 stated the *negotiations* to occur after evaluating the suppliers. In fact, negotiations could also be part of the evaluation stage within prospects 5 and 7 because the interviewees from these companies referred to evaluating the suppliers rather than evaluating the proposals during this point of the buying process. On the other hand, prospects 3 and 6 stated that the next stage after evaluating the suppliers was *demonstration*, which in these companies refers to an organized demonstration contest between few chosen supplier alternatives. At this stage, prospects 1, 2, 3, 4, 5, 6 and 7 tend to *choose the best alternative* and the final stages of the buying process are only focusing on the chosen supplier. Compared to other prospects, another specialty with Prospect 7 occurred after choosing the supplier, because at this point, there is *another requirement specification*, now with only the chosen supplier within Prospect 7.

At this point of the process a request for purchase is sent for the board to accept in four of the prospects (1, 2, 6 and 8). Within prospects 1 and 2, it is followed by a *demonstration* stage, which consists the demonstration of the future software by the chosen supplier. Another prospect that uses this stage is Prospect 7, but they call it as a Proof-of-concept-stage. The demonstration stage within prospects 1, 2 and 7 differs from the demonstration stage utilized by prospects 3 and 6, because at this point of the buying process, demonstration only includes the chosen supplier who presents a demo version of the software. Finally, despite the different expressions used by the interviewees considering the last stage of the acquisition process, the meaning of this stage as being the *final choice*-stage remains the same.

The composition of the buying center within software acquisitions varies a lot among the prospects. Despite the variety, certain similarities among the informant companies were able to be identified. First of all, as the software acquisition process within all of the informant companies starts from the need identification, also the buying center includes the *need identifier*. The results of the interviews also suggest that within the software sector, there is a trend to carry out the acquisitions by a *project team* which is formed in the light of a special purpose of that project. In prospects 4, 5, 6, 7 and 8, a project team is formed in the beginning of the software acquisition process and this is also considered as one stage during the buying process.

Even though in prospects 1, 2 and 3, forming a specific project team for the acquisition was not identified, all of these companies have similar characteristics to a project team that were identified and work similarly as a project team. In Prospect 3 for instance, the amount of the employees is relatively smaller than in other companies, which makes it natural that a project team is not built. However, it was found that the CEO and the Manufacturing Manager of Prospect 3 were in charge of most of the stages during the software acquisition process. This is similar to other prospects who utilize the nature of the project teams when carrying out software acquisition projects.

A project team is led by a *project manager* within all prospects that utilize project teams when carrying out software acquisitions. Even though Interviewee 1 does not identify the formation of specific project team as part of the software acquisition process, a project manager is named during their process. Another

core sector that was identified to be included within the project teams in prospect companies is *the future users of the software*. In fact, including the future users within the project team was highlighted by prospects 5, 6 and 8. Similarly, also prospects 1 and 2 tend to include future users within the buying center even without forming a specific project team. Interviewees from Prospect 2 stated that the future users of the software are one of the most important people to participate in the software acquisition process. Their role is highlighted within Prospect 2 because the goal is that the need occurs from the user sector, which has been perceived to result as better quality within the acquisitions. Other sectors that are included in the project teams within the prospect were not able to be identified as clear as project manager and the future users.

Another sector that was identified to be part of buying center in software acquisitions is *purchasing department*. Prospects 1, 2, 4, 7 and 8 defined purchasing department to be part of software acquisitions, where their role tends to be biggest toward the end of the buying process. On the other hand, in the beginning of the acquisition process, especially during the information search the *existing network* plays a big role in a majority of the prospects. Another interesting finding was the utilization of *external consulting companies* as part of the network, which was brought up by prospects 2 and 3. They also play a key role in the beginning of the buying process, which makes their role as an informant similar to a network's role among the prospects.

Finally, the last sector to be identified in the buying center is *people using the biggest deciding power.* Besides within Prospect 4, all of the interviewees identified at least one stage where the Board, CEO, Steering Committee etc. is included in the buying center. In prospects 1, 2, 6 and 8, this occurs when the request for the purchase is sent to the board. In Prospect 5, the board is part of the final decision phase and in Prospect 7, a named steering committee uses the biggest deciding power throughout the whole buying process. Then again, in Prospect 3, the CEO of the company participates in most stages of the buying process and hence, plays a key role during the whole process. Based on the overview of the results considering the formation of the buying center in software acquisition processes, Figure 8 presents the most typical sectors included within the buying center in such projects.

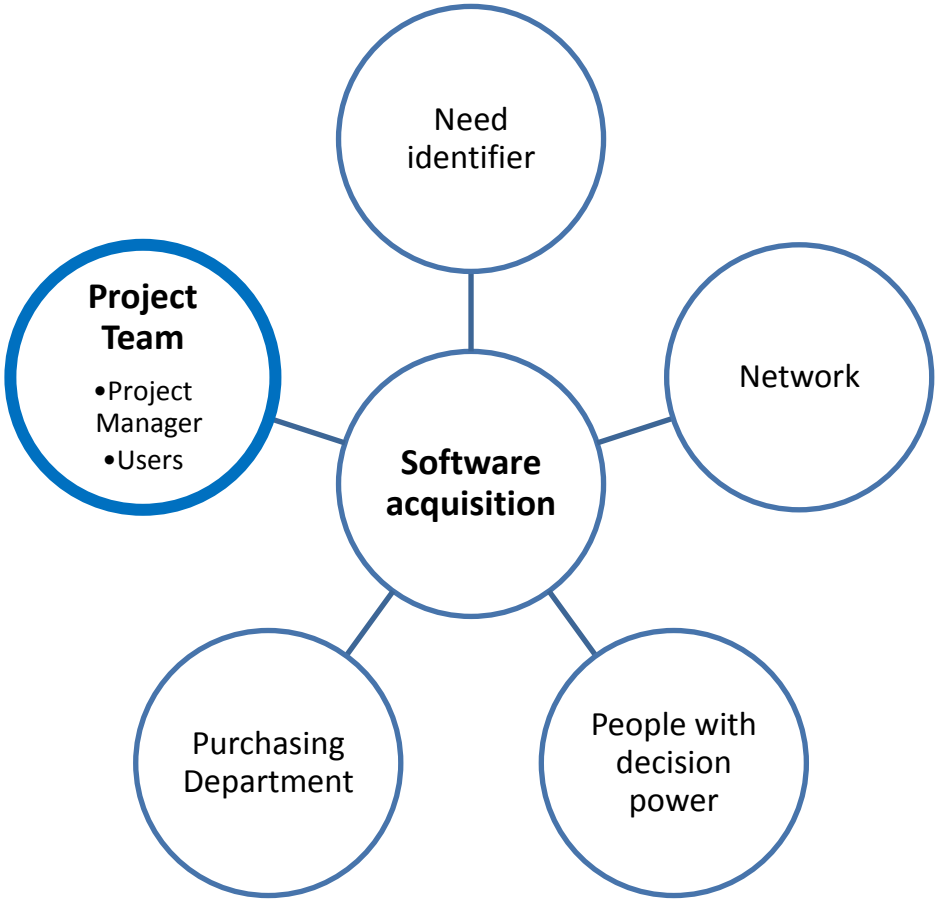

FIGURE 8 Buying Center in Software Acquisitions

The third aspect of the research model in this study considers the factors affecting software acquisition process and the composition of the buying center. This research was able to identify multiple different factors that either directly or indirectly may affect other aspects within the research model. The factors that typically seem to guide software acquisitions are related to *organizational goals*. This starts all the way from the beginning of the buying process when the need is identified, and these goals are on the background throughout the whole process. Organizational goals can for example refer to specific industry of the company which can have an effect on the occurring needs.

One factor that was similar within all the informant companies, was the *role of the existing network* in the beginning of the buying process. In fact, five prospects have some kind of contract with IT service operator to be mostly in charge of their IT related acquisitions. This partnership affects directly the buying process if the current partner is able to offer the best solution, because then there is no need for continuing the process any further. These partners' opinions tend to be also highly respected if they cannot offer the best solution and other IT service providers are searched. Network can also include other sites of the same company, sister companies, or other organizations who prospects tend to often work together with. Network can also be considered to include an external consulting company that was utilized by Prospect 3 during their software acquisition process. In all of the companies, the networks role providing opinions

from the future acquisition was big especially in the information search stage, which consequently affects also the following stages.

Highlighting the role of the network in software acquisitions can also be considered to relate to the *specific business environment* of an individual prospect. The results of this study suggest that majority of the prospects prefer choosing a trusted supplier within software acquisitions. This is because known suppliers are familiar with the business environment where the prospects operate. According to the majority of interviewees, when the supplier knows how everything works within the business environment of the buying company, it requires less resources from the buying company. This may show in educating the new supplier, negotiating the special terms in the contract or implementation of the new software.

Other facts that directly affect both the formation of the buying process and the formation of the buying center are *the type* and *the size* of the acquisition. Type of the software can have an effect on the chosen supplier and hence, also to the buying process. If the chosen supplier is already familiar to the buying company, it may make the buying process shorter. This may also refer to the existing partners, who can be chosen as a supplier if the needed software fits in to their selections. The type of the software also directly affects on the composition of buying center, because buying centers tend to include future users of the software. The size of the investment was also able to be identified to affect both buying process and the buying center. In fact, the size of the investment tends to directly affect on who is the last person to verify the acquisitions. If the investment remains smaller in monetary terms, they can typically be accepted locally within the site that the acquisition directly relates to. With regards to the buying process, this would leave the request for purchase-stage and the stages that occur after that completely out of the consideration and hence, make the buying process shorter. If the investment is relatively large, it usually requires acceptance from the higher levels in the organization. Hence, if the investment is big, it requires more people to participate in the buying center and makes the buying process longer.

Next, the extended research model in the light of the results of the study is presented. As can be seen from Figure 5, where the research model was presented, the model includes three aspects. In the following Extended Research Model (Figure 9), the research questions are answered in the light of the information gathered from the interviews of this study.

As seen in Figure 9, based on the results of this study, the software acquisition process is formed as a set of 11 sequential stages, starting from the need identification and ending with the final decision. Hence, the extended model suggests that the software acquisition is considered as a process of sequential stages by Finnish medium to large size industrial companies, rather than seeing it as a set of non-sequential stages.

Buying center within software acquisition processes was identified to include five main roles and/or departments. In fact, most of the prospects in this research tend to carry out the software acquisition process by specific Project Team. Other four roles or departments that were identified to have a big role are:

network, need identifier, purchasing department and people with deciding power.

Factors affecting the software acquisition process and the buying center are gathered together in Figure 9. As previously stated, this research aims to characterize the factors between four different types of factors used before in IT acquisition research: environmental, individual, interpersonal and organizational aspects. The results of this study suggest that three of these types are highly related to software acquisition processes. In fact, only individual factors relating to individual opinions of the buying center members etc. were not identified to have a crucial role during the software acquisition process. However, it can be assumed that in the situations when the buying center remains smaller (e.g. if the size of the investment is small or the buying company is small), the role of the individual factors increases.

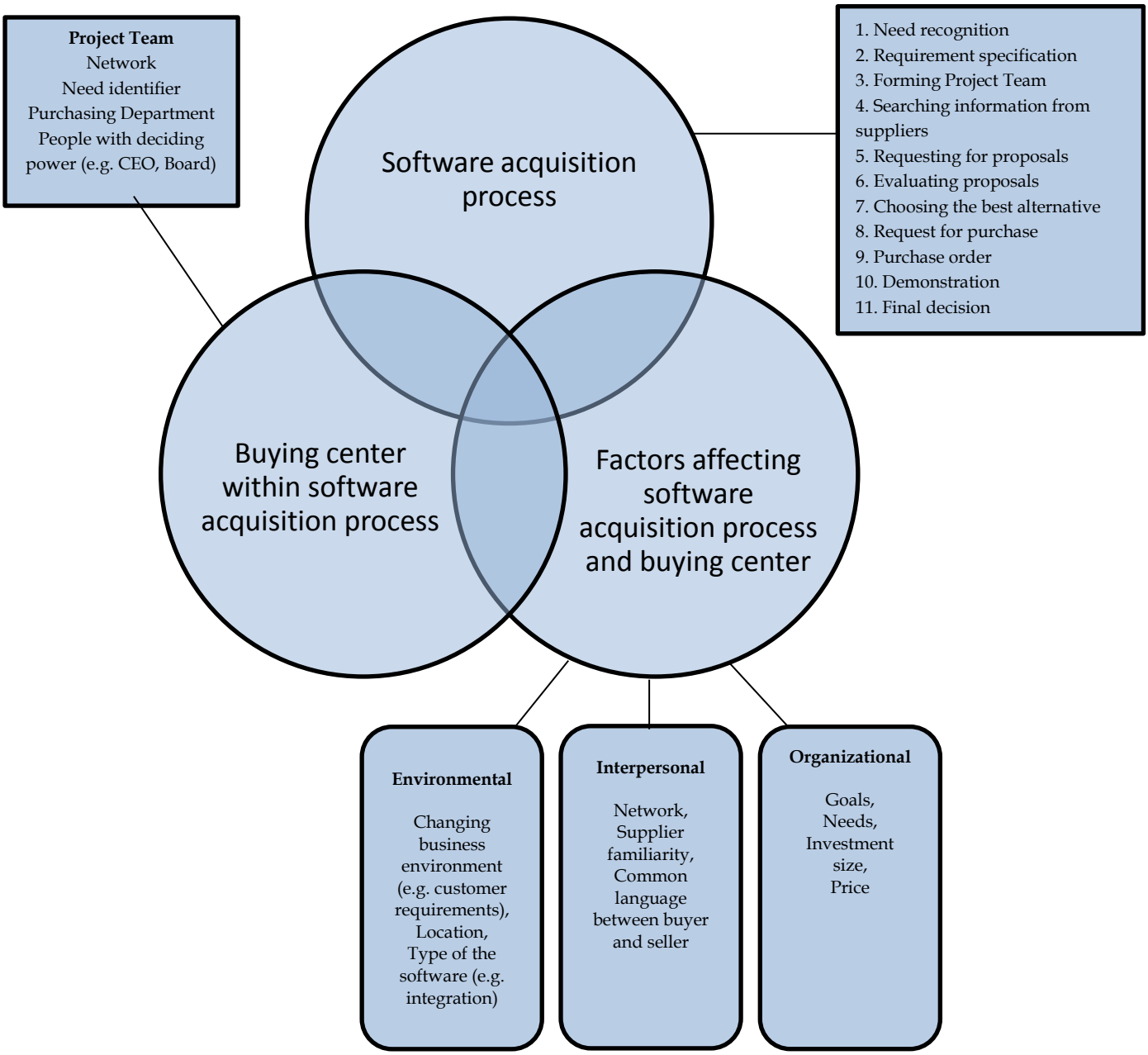

FIGURE 9 Extended Research Model

5 DISCUSSION

5.1 Theoretical contributions

This study has several theoretical contributions. First of all, as one of the main purposes of this study was to shed light of software acquisition process, it can be stated that it remains as a very context dependent project with many different variables to have an effect on it. There has been a change within OBB theories, where the recent studies suggest that OBB forms from non-sequential stages resulting as more interrelated and not as rational process than the original OBB models suggest (Barclay & Bunn, 2006; Makkonen et al., 2012; Grewal et al., 2015; Rajala & Tidström, 2017). However, the results of this study suggest that software acquisition process is rather a process that forms from the set of sequential stages, which is similar to what original OBB models suggest (Robinson et al., 1967; Webster & Wind, 1972; Sheth, 1973).

Although within the recent research focusing on OBB, seeing organizational buying as a set of sequential stages has been rare, software acquisition processes have been more often considered as a process with sequential stages. Thus, the results of this study support the findings from these studies (e.g. Rounds, 1992; Hlupic & Paul, 1996; Patel & Hlupic, 2002; Shainesh, 2004). Even though the 11-stage model for different stages within the software acquisition process presented in Figure 9 includes more stages than a majority of models from other research considering software acquisition process, the basic idea of the model remains the same. On the other hand, Verville and Halingten's (2003) MERPAP model presented in Figure 4 differs from the results of this study. Verville and Halingten (2003) state that the software acquisition process includes six interrelated but separate processes, which is more similar to the idea behind recent OBB studies which see organizational buying as more of a complex process (e.g. Makkonen et al., 2012; Rajala & Tidström, 2017).

When considering the presented 11-stage model in the light of the perceived importance of different stages by interviewees, the findings clearly highlight the role of the beginning of the buying process. Especially specifying the requirements-stage, which was considered as the most important stage of the buying process by seven prospects in this study, got special attention during the interviews. This supports the findings from Jadhav and Sonar (2011) who state that specifying the requirements is the most important phase in software selection process. In addition, Jadhav and Sonar (2011) state that this stage must be accurate, complete and detailed because this phase has a crucial role when selecting the best possible software for the specific needs of the organization. This is very similar to the findings of this study, as the interviewees tended to state that this stage is crucial especially because it has a big role for finding the best alternative. In fact, it was also stated that if the requirements are specified well, it is hard to go wrong with the rest of the acquisition process.

Findings from this study that are related to the buying center within software acquisitions mostly highlight the common utilization of the project teams. This is similar to the previous studies focusing on software acquisitions as for example Patel and Hlupic (2002) and Wei et al. (2005) bring up the idea of teams being in charge of the software acquisition processes. Both of these studies highlight the importance of including different departments within the organization in the team in order for it to reach its full potential. This is also similar to findings of this study since the project teams of the prospects within this study tend to include multiple representatives from different departments of the organization.

Although the results of this study suggest that software acquisition processes are typically carried out by specific project teams, different roles within and outside the project team were also able to be identified to belong in the buying center. One of the key roles to include in the buying center within the prospects was considered to be the future users of the software. Especially in the beginning of the buying process, the role of the users is big because it is typical that the need occurs from the users' side. This is similar to Garrido-Samaniego and Gutierrez-Cillian's (2004) study as they state that the users of the product have a key role especially in the beginning of the buying process during the need recognition and specifying the requirements.

In addition, Garrido-Samaniego and Gutierrez-Cillian (2004) state that management level should also be included within the buying center. Authors argue that when the cost and the strategic importance increase, so does the involvement level of the management during the buying process. The results of this study also brought up the role of the management level during software acquisition processes. In fact, the results also suggest that the size of the investment directly affects on the involvement of the management during the software acquisition process, which is similar to Garrido-Samaniego and Gutierrez-Cillian's (2004) findings.

One interesting theory that was supported by the findings of this study is the usage of technical consultants within software acquisitions. Both Daves et al. (1997) and Shainesh (2004) state that organizations may consider the usage of technical consultants within IT acquisitions due to the complexity of these acquisitions. The usage of technical consultants was brought up by two prospects within this study, and in addition even if the technical consultants are not utilized, opinions outside the organization seem to be highly valued within software acquisition. Daves et al. (1997) also stated that technical consultants are used especially in the beginning of the buying process, which the results of this study also support.

When considering the theoretical contributions related to the factors affecting the software acquisition process, the results of this study have both similarities and dissimilarities with previous research. All of the identified factors were categorized into four main categories that have been used in OBB research since Webster and Wind's (1972) one of the original models of OBB. Based on the findings from this research, three of these main categories: environmental, interpersonal and organizational factors were able to be identified to have an

effect on the software acquisition process. However, one of the main categories, individual factors, did not occur as clearly as it has occurred in the previous research and hence, only the previously mentioned three main categories are suggested to affect software acquisition process. This is different from Verville and Halingten's (2002) and Palanisamy et al's (2010) findings, which both suggest that factors within all of these four main categories have an effect on the software acquisition process.

Whether it because of the perceived importance of software acquisitions, the amount of money used in them, or something else, software acquisitions seem to remain as very structured processes with precisely formed buying center for carrying it out. The Extended Research Model presented in Figure 9 shares many aspects with the original OBB models, for instance seeing the organizational buying as a set of sequential stages rather than as a process with interrelated stages that the recent research strongly justifies. Consequently, the results of this study suggest that the original OBB models are not that irrelevant when explaining the organizational buying in software context than they may have been thought to be. Even though the recent OBB literature strongly disagrees with the old ideas, it seems that many of these ideas are still very relevant at least within the context of software acquisitions.

5.2 Managerial implications

From the managerial side, the goal of this study was to shed the light of the software acquisition process within the prospect companies of this study. By doing this. the aim was to be able to offer valuable information for the case company to utilize in their future operations. First of all, it is important for IT service providers to identify which kind of process it is what they are dealing with when trying to sell a software. Although the recent research around OBB tends to perceive organizational buying as a complex process with interrelated stages, the results of this study do not support this idea within the context of software acquisitions among industrial companies. The results of this study suggest that software acquisition forms from a set of sequential stages, and identifying this might help IT service providers, including the case company, with their future operations like marketing and selling the software.

As it was stated in theoretical contributions, the results of this study support the findings from Jadhav and Sonar (2011) who state that specifying the requirements is the most important stage during the software acquisition process from the buying company's point of view. Another stage that's importance is highlighted by both previous literature (e.g. Jadhav & Sonar, 2011) and the findings of this study is the information search. Hence, because both stages occur in the beginning of the software acquisition process, it can be assumed that also the selling company should focus to the beginning of the buying process when marketing the software.

One aspect that is essentially related to the better understanding of the information search stage is knowing the sources that buying companies utilize during that stage. Results of this study suggest that the most common sources for information search within software acquisition processes are company's existing network and Internet search engine tools. Because network tends to form over time it may be easier for the IT service providers to focus on their appearance within searches in Internet search engine tools that are related to software context. This kind of search engine optimization might help selling firms to exist more often in searches within their potential customers. Focusing on the early stages with marketing efforts is also supported by the findings from Ghingold and Wilson (1998) who state that the effectiveness on the buying center members is higher in the beginning of the buying process. Authors argue that earlier the marketer is able to identify the composition of buying center, the greater are the chances to reach buying center members before any decisions from the potential suppliers are made. This also supports the suggestion that IT service providers should consider investing in marketing efforts like search engine optimization.

One factor that was identified to affect the decision-making process that is easy to influence from selling company's side, is finding a common language with possible customers. This is also similar to highlighting the role of the technical sales specialist from the selling company which was mentioned by one of the interviewees. These factors can be considered to affect the software acquisition process in the later stages than the search engine optimization and hence, they are important to take into consideration by selling companies if they belong in the group of potential suppliers before the final decisions are made. It was also found out that the buying companies tend to consider the technical knowledge between different companies typically good, which increases the effectiveness of other things behind the final decision, such as finding the common language with the potential supplier. Based on above, this study suggests that IT service providers should pay a lot of attention when choosing the people who are the main contacts with the potential buyers in software acquisition processes because within the complex and context dependent software sector, this may make a big difference between operators.

5.3 Evaluation of the study

According to Lincoln and Guba (1985, p. 290-301), when analyzing the results of qualitative research, four elements including credibility, transferability, dependability and confirmability should be taken into a consideration. Due to the qualitative methods used in this research, this set of criteria is also utilized within the following chapter to analyze the quality of the study.

Credibility is related to measuring how truthful the research findings and gathered data are (Lincoln & Guba, 1985, p. 294-296). In order to increase the credibility of this study, total of eight prospect companies were chosen to be interviewed. When selecting the informants within the case companies, the

credibility was increased by giving the prospects chance to affect on who would be the best possible informant to answer the software acquisition specific questions. This resulted as many different titles from prospects represented within the interviews and hence, larger understanding from software acquisition process was achieved. Despite the different roles of the informants between prospects, the responses remained similar which can be considered to increase the validity of the study results. Another fact that increases the validity of the data, is the promised anonymity for the interviewees. In fact, one of the interviewees stated that his answers will me more truthful as he knows that either the name of the company or the interviewee are not published.

Transferability aims to answer the question of whether the results of the study could be applied in other contexts considering the setting of the study or not (Lincoln & Guba, 1985). It can be assumed that the results of this study would be transferable to a research with same type of setting. This is supported by the similarities between the answers from different prospects. However, generalizing the research findings to a larger extent can remain quite challenging and being able to achieve generalization, further research among the context should be conducted.

Dependability refers to the consistency of the study in the light of whether the same results would be achieved if the same study was conducted in similar context or not. Due to its nature as an element analyzing the repeatability of the study, dependability is highly related to the reliability of the study (Lincoln & Guba, 1985, p. 298-299). For achieving dependability among this research setting, the themes and questions used within the semi-structured interviews were predetermined. After collecting the data, it was analyzed carefully, and the interviews were coded in the light of the specific themes of this study. Due to the systematic approaches utilized in both data gathering and analyzation, the results of this study can be assumed to be repeatable within similar research context.

As the last element of Lincoln & Guba's (1985, p. 290-301) criteria, confirmability indicates the objectivity of the results. This mostly refers to the role of motivation of the researcher, as according to Lincoln & Guba (1985, p. 299-301), confirmability determines whether the findings of the study are resulted from truthfully collected data or individual motives of the researcher. To increase the confirmability of the research, the results were presented in face-to-face meeting with all pre-interviewed employees among the case company which also allowed the employees to present their opinions about the research findings. The fact that the pre-interviewees agreed with the study results within the context of the study, and the fact that there were similarities found between the study results and previous research in both OBB and software acquisition contexts, both indicate the high confirmability of this study.

5.4 Limitations of the study and suggestions for further research

The aim of this study was to increase the understanding of the software acquisition process within industrial companies. This goal was attempted to reach by utilizing case study as a research method with a specific focus on one Finnish IT service provider and companies identified as their potential customers. Even though the results of this study provide valuable information for companies trying to sell software, the study findings can not be generalized. This is normal within single case studies where the focus is only on one single case and hence, these studies can not be generalized outside the research context.

In addition to the focus on one specific case company, also the small sample size including eight interviews from case company's potential customers sets some limitations that must take into consideration when analyzing the research findings. The small sample size can be considered as a limitation itself, but also a generalization within prospects sets some limits. This is because different results could have been occurred if different companies were interviewed. On the other hand, even though a case study as a research method sets certain limitations, it was a natural choice for this study, considering the research setting and the common opinion for the need of a research from both case company's and the researcher's side. In addition, utilizing case study as a research method offered a chance for gathering more in-depth information among the prospects than other methods (e.g. quantitative survey) would have offered.

Together with the theoretical contributions and managerial implications presented earlier, this study provides promising ideas for further research. Due to the constantly developing technology and software industry, the software sector from different viewpoints provides many potential research topics. Because the software sector can be assumed to be one of the most rapidly developing business sectors in the future it can be stated that further research is needed from the software acquisition processes overall. In addition, the present study cannot provide generalizable results to larger extent among software acquisition processes due to its nature as a single case study, which also highlights the importance of further research in this specific context.

One of the interesting findings of this research was that the prospects of the study considered software acquisition process to be formed from a set of sequential stages. As the recent OBB literature perceives organizational buying more so as a set of interrelated stages, it would be interesting to see if these kinds of processes exist in software sector. One avenue for this type of research could be studying the buying process of agile software development projects, which refer to project where software development is incremental, cooperative, straightforward and adaptive (Abrahamson et al., 2002, p. 17). As these kinds of processes tend to be more conversational and less predefined with separate stages, the research focusing specifically on agile software development could provide results closer to the recent OBB literature also in software sector.

When looking at the software acquisition process from the buying centers' viewpoint, this study highlights the common usage of formed project teams within these projects. Studies focusing on the different aspects of project teams could provide an interesting avenue for software acquisition research. With a specific focus on project teams, more comprehensive understanding from these teams' behavior within software acquisitions could be reached. In addition, as the main focus of this study was on the composition side, a specific research focusing on the project teams within software acquisition could also shed the light from the different roles and responsibilities within the members of the buying center. This would offer a chance for comparison between previous OBB research where the different roles within the buying center are studied.

The general categorization used for the third main aspect of this study, the factors affecting the software acquisition process and the buying center, divided these factors in to four main categories. Based on the research findings, three of the four categories were able to be identified. Only main factor that was not identified to affect the software acquisition process or the buying center were the individual factors. More specific focus on the affecting factors could provide better understanding about these factors, since the focus within this study was mostly in understanding the big picture. In fact, focusing on the project teams could also provide more information from the effective factors within the buying center because it gives a chance for closer investigation of each individual team member. By this kind of research setting, also individual factors that were not able to be identified to affect software acquisition process within this study, could possibly get more attention when each team member could be investigated more closely.

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APPENDIX 1: INTERVIEW QUESTIONS

Background information

1. What is your name and the job title within the organization you work for?
2. How would you describe your job? What are the main tasks and responsibilities?
3. How long have you been working for the current employer and in under the current job title?
4. How many employees the company that you work for has in total?

Software acquisition process

5. What kinds of acquisitions are you mostly in charge of?
6. How often these kinds of acquisitions are carried out?
7. How would you describe a typical software acquisition process?
8. What are the core phases during the software acquisition process?
9. Who are the people that participate in software acquisition processes?
10. What is your own role within software acquisition processes?
11. How is the information about different supplier alternatives gathered?
12. Are there sources that have bigger role than others when the information is searched?
13. What are the factors that affect the software acquisition process?
14. What are the factors that affect the final decision making/ Which aspects are high-lighted?
15. Is the buying process different when buying from new or already known supplier? How are these processes different?
16. How many software acquisitions there has been within past five years?

General thoughts about software business

17. How important you consider software sector to be in this field of industry? Why?
18. If you participate to buying processes outside IT sector, do you recognize differences between software acquisitions and other buying processes?
19. Related to that, is there certain aspects that are in very important role when acquiring software compared to other buying processes?
20. What is your general opinion about IT specific products and services within the field of this industry?

Future visions and the competitor analysis

21. What are the interesting topics in the field of you company's industry in the future?
22. Do you think software business is part of the future within this field of industry? How?
23. Do you know if your competitors have done more/less software acquisitions? For what kind of purposes?