

Bachelor's Programme in 2023

# Insights into software vendor selection in banking: perspectives from vendors and banks

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Bachelor's thesis  
2023

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**Title of thesis** Insights into Software Vendor Selection  
in Banking: Perspectives from Vendors and Banks

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**Programme** Bachelor's degree

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**Major** Information and Service Management

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**Thesis supervisor** Esko Penttinen & Hadi Ghanbari

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**Date** 14.12.2023      **Number of pages** 36      **Language** English

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### **Abstract**

This thesis explores the software vendor selection process in the banking industry, examining the factors, criteria, and challenges involved. The banking sector, heavily dependent on information technology, often outsources IT services, including software, to external vendors. This research focuses on understanding the software selection process from both the vendor and bank perspectives, while also highlighting the unique aspects of this industry compared to others.

The research methodology includes conducting and analyzing interviews with four professionals involved in software selection—two from a financial software vendor company and two from a bank. This qualitative approach provides insights into the perspectives of both parties in the software selection process. The study reveals that factors such as security, compatibility with existing systems and interfaces and vendor reputation are crucial in the selection process. Additionally, the thesis highlights the structured and heavily regulated nature of software selection in banking, driven by the need for security and compliance with regulatory standards.

The findings suggest a gap in perceptions between vendors and banks, with vendors perceiving a lack of transparency and clarity in the banks' selection processes. This research contributes to a better understanding of software vendor selection in banking, providing insights for banks to improve their software selection processes. The thesis concludes with suggestions for future research, including broader studies involving more banks and vendors, and a deeper investigation into the development and application of selection models in the banking industry.

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**Keywords** software vendor selection, banking industry, outsourcing

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# 1 Introduction

Outsourcing IT services has been a major part of business for some time now and is still growing. In fact, the revenue gathered by IT outsourcing worldwide is expected to grow over 68 percent in the next five years from 460 billion USD to 777 billion USD (Statista, 2023), including services such as outsourcing of applications and web hosting. The rise in IT outsourcing also accounts for the banking industry, which is said to have significant potential for benefiting from IT outsourcing (Tas & Sunder, 2004). Banking and financial services industry is one of the largest users of outsourcing by sector due to having many processes that include information technology by nature, also meaning that theoretically the whole set of bank's services can be in digital form (Ackermann, 2003; Gewald et al., 2006). Furthermore, economic crisis, regulation and the costs of providing services to customers has driven banks to outsourcing of IT to be able to decrease costs and focus on their core competencies, as well as getting access to the best IT services in the markets (Hanafizadeh & Zare Ravasan, 2018).

In the banking sector, a part of information technology and services outsourcing is the outsourcing of software. Banks outsource many types of services to software vendors, such as risk management, treasury management, asset and liability management, helpdesk, internal communications and building mobile applications. The decision to outsource IT services like software is a significant one and includes many possibilities of failure, and one of the reasons is thought to be wrong outsourcing decisions (Hanafizadeh & Zare Ravasan, 2018). The selection process of a software and its vendor is therefore naturally a pivotal point in reaching successful outcomes in outsourcing.

A selection process has many steps and criteria, as can be seen in the past research of software and system selection (e.g. Penttinen et al., 2018; Tsai et al., 2012). As this thesis will show, plenty of literature can be found regarding vendor selection in general, as well as software and other system vendor selection. However, not much can be found regarding software vendor selection processes in the banking industry (Thakur & Anbanandam 2015; Cao et al., 2012) which is why this topic will aim to address just that. In this thesis I will research the software vendor selection process in the banking industry by first presenting a literature review of vendor selection in general, software vendor selection and the already existing literature addressing that process in the banking industry. This thesis also includes an empirical study made by interviewing four people from both sides of the selection process, two of which work for a financial software vendor company and two who work in a bank and have been involved in the software selection process. The interviews are conducted to find out differences and similarities in their views on the software selection process, as well as in contrast to the academic literature. In this chapter I will address the motivation for this thesis, the research objectives and questions, the scope of this research and the structure of the following chapters.

## 1.1 Motivation

From the managerial point of view, this thesis' topic has significant meaning for banks in today's world. As Fintech, SaaS and other software-based industries grow and banks keep evolving to more and more digitally operated institutions, it is in my opinion likely that the amount of software provided by vendors to banks will also grow.

Therefore, the software selection process for banks is a topic that should be well researched, which at the moment it is not. More research on this topic could lead to more knowledge on both the banks and the software providers' sides on what matters and what are the main problems in the selection process and in the software itself. It can also lead to deeper understanding of the use of selection criteria and models: what are the vendor selection models and criteria based upon, and are both sides of the table aware of them?

On the theoretical side, focusing on the software selection process particularly in the banking sector provides a more in-depth perspective to the field of study. In different industries vendor and software selection processes have been well studied (e.g. Penttinen et al., 2018; Tsai et al., 2012; Jadhav & Sonar, 2009; Wei et al., 2005). This thesis will bring new perspectives to the software selection process in the banking industry, while taking into account the possible difference in the views of the supplier and the buyer instead of only focusing on the buyers' needs.

This thesis aims to add information on this topic by interviewing people from the field. Two of the interviewees are working for a financial software vendor, and two of them are working in a bank and have actively participated in a bank's software selection process. Interviewing people from "both sides of the table" is intended to help gain a complete picture of the topic. As mentioned, this will also help to find out possible differences in the views of the different parties of banks' software selection process. The conclusions made from the qualitative data gathered from the conducted interviews can be added on top of the already existing scientific research and data on the topic to have a more thorough understanding of the whole, and to create possible implications for further research.

## 1.2 Research objectives and research questions

This thesis aims to answer two research questions which are the following. What are the most important factors in the software selection process in the banking industry, and are there significant differences in the views of the software vendors and banks? These questions will include the most relevant factors, criteria and issues of the selection process, as well as the similarities and differences in the interviewees' perceptions. In addition, these questions aim to find out if there are significant differences in how the selection processes are conducted between banks, and if the interviewees perceive that there is a need for change in the current methods.

### **1.3 Scope of research**

This thesis is focused on the banks' selection process of new software from software vendors. More precisely, it will be focusing on the most important factors and criteria in the process, from both the vendor's and the bank's point of views. As already mentioned, a lot of research can be found regarding system integration and selection overall. For example, studies have been done for the electronics industry, multinational enterprises and midsized and big companies in general. However, little can be found regarding the banking industry, which is why this thesis will be focusing on it.

The interviewees are all experts in this field and provide an in-depth look into the selection process. It also brings value to this study that the interviewees are working on both sides of the table as interviewing only suppliers or customers naturally has an effect on the information that can be gathered. Still, it should be noted that there are only four interviewees, leaving room for a more comprehensive study including more interviewees. Also, three of the interviewees are from Finland and one from the United Kingdom, meaning that a study could be made with people from more diverse backgrounds and cultures.

### **1.4 Structure of this thesis**

The rest of this thesis is constructed in a typical way for an empirical study. In Chapter 2 the past literature and theoretical background regarding the topic will be presented by first addressing outsourcing in the banking sector, why it is done and what the literature considers relevant regarding it. Then I will address the literature on vendor selection in general, after which I will be focusing on literature regarding software vendor selection and finally software vendor selection in the banking sector. After that in Chapter 3 I will introduce the methodology of the research done in this thesis. In Chapter 4 I will present the results from the conducted interviews and in chapter 5 discuss the findings and conclusions by contrasting them to the past literature on the topic and address the possible implications to further research and practice, as well as the limitations of this research.



## **2 Theoretical background**

### **2.1 Structure of this chapter**

In this chapter I will describe the research regarding the relationship of software vendors and banks as well as the literature software vendor selection. In section 2.2 I will briefly address outsourcing in the banking sector in general. In section 2.3, I am going to present theoretical background on vendor selection in general, and then start scaling down to software vendor selection and finally to software vendor selection in the banking industry. The researched literature has been searched from Scopus, Google

Scholar and the AIS Library using keywords such as “Outsourcing in the banking industry”, “Vendor selection”, “Software vendor selection”, “Software vendor selection in banking” and other combinations of these given words.

### **2.2 Outsourcing in the banking industry**

Outsourcing has become one of the most used business practises in the banking industry (Tayauova, 2012) and banks have certainly adopted outsourcing as one of the most common ways of improving their performance. Most of the literature regarding outsourcing in the banking industry either focuses on IT outsourcing or Business Process Outsourcing (BPO) (e.g. McLellan & Beamish, 1994; Ang & Straub, 1998; Baldwin et al., 2001; Gewald & Hinz, 2004; Gewald et al., 2006; Gewald & Dibbern, 2009; Dey et al., 2010; Tayauova, 2012; Hanafizadeh & Zare Ravasan, 2018). The amount of outsourcing done by a bank varies widely from only sticking to their core competencies and outsourcing everything else if seen fit, to only having a few of their services or processes outsourced. As the banking industry heavily relies on IT (Gewald et al., 2006), it can be said that practically all banks use IT from external suppliers, be it off-the-shelf software or only components which are then used by the bank to build something of their own. For banks there is a multitude of potential benefits as well as possible risks that are connected to outsourcing and the complicated and highly regulated nature of the banking industry forces banks to consider the outsourcing decisions carefully.

What could be surprising to some is that the cost savings that can be achieved by outsourcing are often not the primary objective for many banks. For example, German banks that are deciding on BPO think that other benefits, such as being able to focus on core competencies and restructuring a bank’s value proposition, weigh more than the initial cost savings from that BPO decision (Gewald & Dibbern, 2009). Also, McLellan and Beamish (1994) argue that though outsourcing of for example software or hardware reduces costs, most banks tend to list financial motivations after other strategic objectives while deciding on IT outsourcing. Gewald and Dibbern (2009) also found in their study of German banks that banks shifting their focus from costs savings to value and quality factors, such as improving their non-core attributes leads to banks demanding additional business value and distribution of financial risk from their possible BPO suppliers. The most notable perceived benefit of BPO for banks was found to be the

possibility of increasing focus to the bank's core competencies (Gewald and Dibbern, 2009).

There are also factors that can change the banks' objectives regarding outsourcing, one of them being size. In a study regarding the pros and cons of outsourcing in Kazakhstani banks conducted by Tayauova (2012), they found that smaller banks tend to have lower resources which leads to a necessity to outsource some services or processes. They also found that smaller banks have the potential to gain more operation flexibility from outsourcing due to bigger banks having heavier managerial structures preventing it.

Similarly to benefits, outsourcing also comes with risks. Gewald and Dibbern (2009) notably found out that in the BPO decision process perceived benefits tend to have a bigger impact than the avoidance of perceived risks. Some of the common risks of IS outsourcing in the banking sector were listed by Gewald and Hinz (2004). According to their thorough review, risks frequently mentioned in the literature are "service debasement, hidden costs, inexperienced customer or vendor, customer using more resources than anticipated, loss of competence, failing interfaces, loss of cross functional skills, not achieving anticipated benefits, default of vendor, communication mismatch, lock-in, loss of business flexibility, incapable vendor, wrong measurements, misuse of trust and security breaches" (Gewald & Hinz, 2004, p. 80). These mentioned risks clearly include some that also concern the IT vendor. According to another study the most notable risks from the vendors perspective in BPO are lack of top management support, client's changing objectives, scope or requirements and lack of cooperation from the client (Liu et al., 2023). However, this study addressed BPO in general, not only in the banking sector.

## **2.3 Literature review on vendor selection**

### **2.3.1 Vendor selection**

In banking and in general, the selection of a vendor is not an easy feat. There are multiple factors that need to be assessed before starting a vendor-customer relationship. Choosing a vendor is done carefully as it usually comes with significant costs and contains some degree of risk of for example the software vendors software not working as expected. The trade-offs between different factors influencing the decisions are not easy to assess. It can be hard to decide whether the efficiency of a software should be considered more important than the costs that come with it, and if all this applies to a different software as well. It is no surprise that a large amount of research has been done regarding vendor selection in general, as well as the selection criteria (e.g. Weber et al., 1991; Dickson, 1966; Şen et al., 2008; Repschlaeger et al., 2012).

According to Şen et al (2008) the most important research regarding supplier selection criteria was made by Dickson (1966). Dickson published a set of 23

criteria to be used to evaluate the vendor candidates. In later research done by Weber and his colleagues (1991) they found out that the set of criteria first structured by Dickson was mostly still relevant, and that the criteria were used a lot in other research: only one of the 23 criteria, warranties and claims, was not addressed in the 74 articles that were picked for the study, and in 47 of the 74 articles more than one of the criteria were used. The most addressed factors were net price, delivery and quality (Weber et al., 1991).

The obvious question regarding the above-mentioned set of criteria by Dickson is that have they been able to withstand time? And if so, can they be applied to all industries universally, or should there be different vendor criteria for different industries? Dickson himself answers the latter of the two questions in his study by saying “it seems very reasonable to assume the factors considered when selecting a vendor for nuts and bolts are not the factors that are appropriate when selecting a supplier for a computer” (Dickson 1966, p.5). This would imply that the selection criteria would need to be adjusted according to the industry in which they are to be used. Weber’s and his colleagues’ study also takes us to the same conclusion: while net price, quality and delivery were mentioned in 61, 44 and 40 of the 74 articles, not all 23 criteria were used nearly as much (Weber et al. 1991). Still, it should be noted that Dickson’s set of 23 criteria has yet been widely used in scientific literature (Şen et al., 2008). With this information no final conclusions can be made in favour of all the criteria being viable across industries.

Şen et al. (2008) argues along the same lines: they conducted a framework for vendor selection criteria which included 49 criteria in total (Figure 1), that were gathered through a comprehensive literature review of their own. Instead of figuring out if the criteria apply across industries, they recognized that the importance of the criteria differs in accordance with a company’s industry, buyer-supplier relationship and many other factors. Therefore, they intended that the framework could be used for companies needs by selecting the relevant criteria to use, and to add new ones if need be.

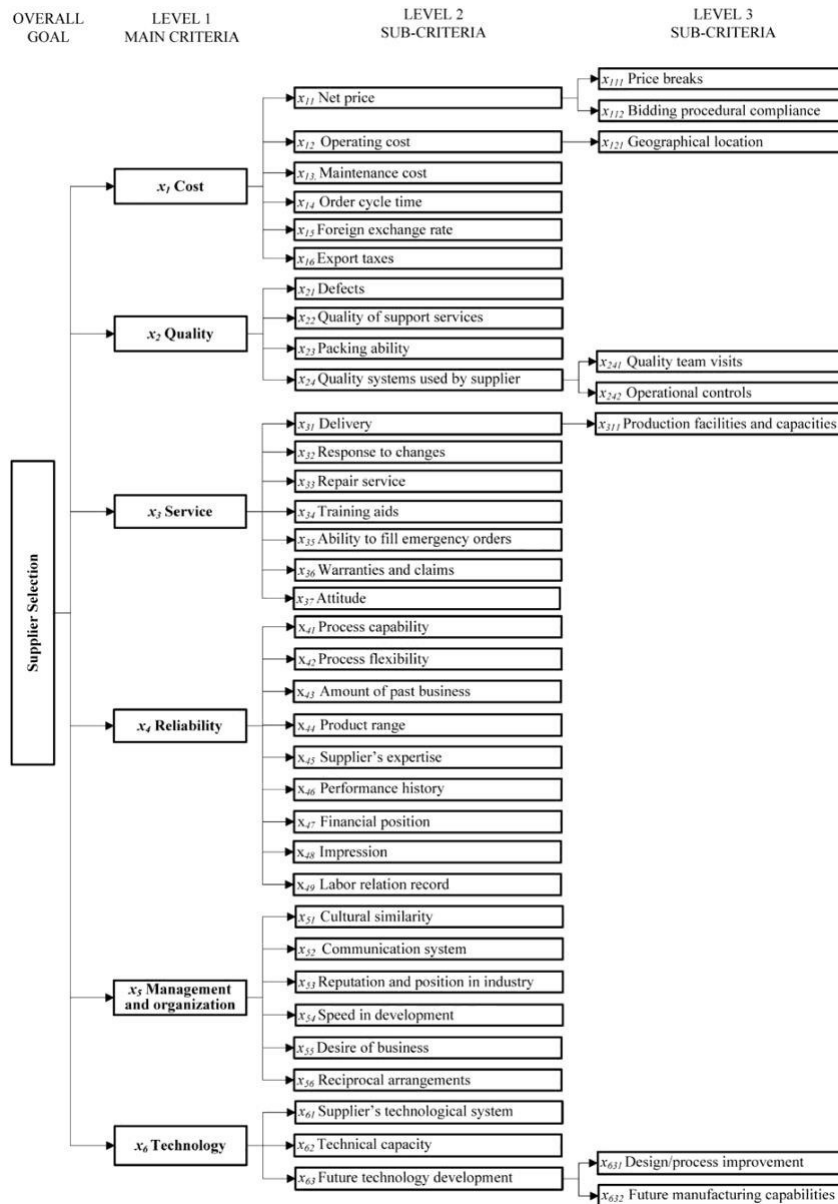


Figure 1. Supplier selection criteria hierarchy (Şen et al., 2008)

Many other models have also been developed for vendor selection, some of which decide not to only focus on the vendor selection decision and its criteria. Boer (2001) presents the vendor selection to include not only the final decision, but four phases in total: problem definition, formulation of criteria, qualification and the final decision. Boer presents a wide variety of different decision-making models to work on each of the four phases, such as cluster analysis, linear weighing models and mathematical programming (Boer et al., 2001). He also argues that these models could be used across industries, and that the real difference comes down to the meaning and interpretation of the selection criteria (Boer et al., 2001).

All the above-mentioned studies have given this thesis a general view of the vendor selection process and criteria. However, these studies were all conducted some years ago, and we also require a more in-depth look at the software vendor

selection process in its own right to find out which criteria and factors seem to be relevant in that field.

### **2.3.2 Software vendor selection**

Many types of software can be outsourced by a business to external vendors. For example, Enterprise Resource Planning (ERP) software, Software-as-a-Service (SaaS) and Fintech are all concepts which are used as tools for banking and other industries. All the above-mentioned technologies have grown and are projected to keep on growing in the future (Statista, 2023). In this section I will cover software vendor selection by presenting the relevant literature and aiming to find out similarities and differences in the process in contrast to the more general vendor selection literature mentioned above. In particular, I will focus on SaaS, ERP and Fintech software, since they are very relevant to the banking industry (Hon & Millard, 2018; Juengerkes et al., 2016; Fuß et al., 2007).

Considering the Software-as-a-Service model of supplying services to a customer, many studies were found that presented guidelines and criteria for SaaS vendor selection (e.g. Repschlaeger et al., 2012; Godse & Mulik, 2009; Yiming & Yiwei, 2011; Boussoualim & Aklouf, 2015). Most of the studies addressed in this section approach the SaaS vendor selection process as a multi criteria decision-making (MCDM) problem meaning there are multiple criteria which need to be considered in the process (Godse & Mulik, 2009; Boussoualim & Aklouf, 2015). Also, the concept of Analytic hierarchy process (AHP) is something that comes up in almost all the material covered regarding SaaS vendor selection for this thesis. An Analytical hierarchy process is a decision-making tool which has been used widely across industries. In short, the AHP consists of formulating the problem, to which criteria are selected and put to a form of a hierarchy. The criteria are weighted based on their importance, and the subject of the process (the product) is then assessed according to these weighted criteria using mathematical formulas (Saaty, 2004).

In a study by Godse and Mulik (2009) they approach the selection process using the Analytic hierarchy process. They base their SaaS product selection criteria on discussions with experts and their own experience and proposed the following criteria for SaaS selection: functionality, architecture, usability, vendor reputation and cost. These criteria were also split into multiple attributes, for example usability includes user interface, help, support for mobile devices and offline support. These criteria would then be valued with weights according to the AHP (Godse & Mulik, 2009).

Along similar lines were also Yiming and Yiwei (2011), albeit their selection criteria were not exactly the same compared to Godse and Mulik. For example, they divided vendor attributes into five different criteria while Godse and Mulik only covered vendor reputation which covered number of clients and brand value. Similarly to Godse and Mulik, Yiming and Yiwei used the AHP giving weights to their chosen criteria to then evaluate the SaaS providers. AHP was also the approach in a study published by Boussoualim and Aklouf (2015) where they

presented a very similar framework for SaaS vendor selection as the two studies mentioned above.

In contrast to the three above-mentioned studies, Repschlaeger approaches the SaaS vendor selection from a different perspective. He and his colleagues present that the selection criteria for a SaaS provider have not been defined properly in past research (Repschlaeger et al., 2012). This could also have been observed in the two above-mentioned articles: Godse and Mulik defined their criteria and shortly referred to them being selected according to their experience and experts (Godse & Mulik, 2009), but did not really address that process. Yiming and Yiwei based their criteria definition on “principles of selecting a SaaS vendor” and “principles of attributes of evaluation” but did not really cover the origins of these principles (Yiming & Yiwei, 2011, p.511).

Repschlaeger and his colleagues defined their SaaS selection criteria through various cycles of information gathering, after which the final set of criteria consisted of 45 criteria (Figure 2) which were divided to General selection criteria and SaaS selection criteria. The General selection criteria are criteria that are not service model specific, meaning they can be used in other selection processes for cloud computing models as well. The SaaS selection criteria are specific to the Software-as-a-Service model: these criteria are maintenance cycles, functional coverage, functionality bundle, service category, portability of data and browser compatibility (Repschlaeger et al., 2012). Unlike the other studies so far, Repschlaeger and his colleagues do not present any guidelines, such as the AHP, for the usage of these selection criteria.

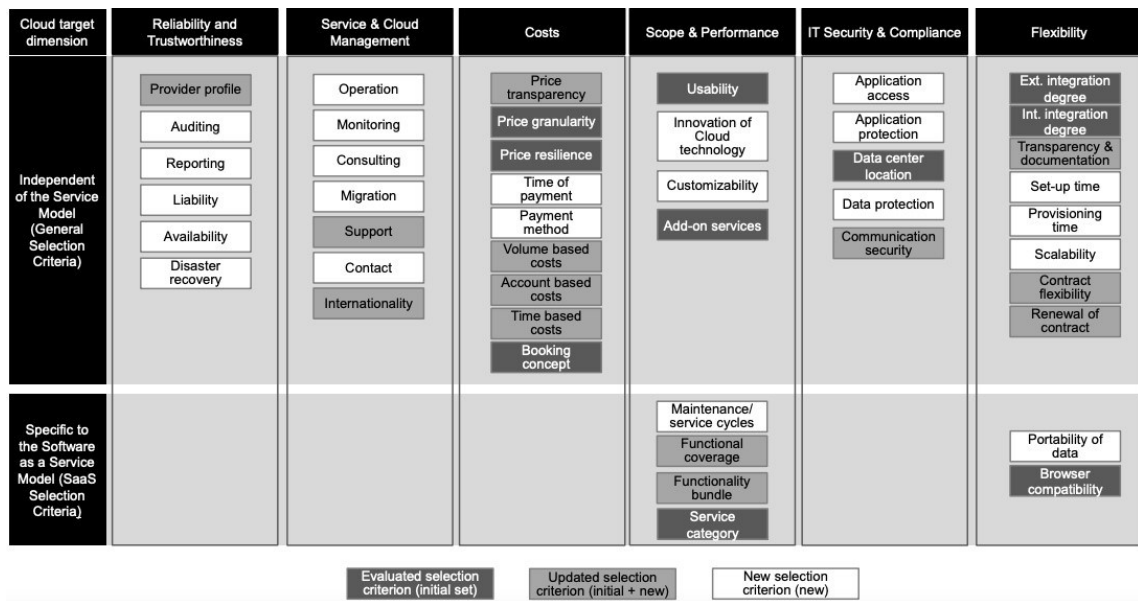


Figure 2. The final set of selection criteria for SaaS (Repschlaeger et al., 2012)

Regarding the ERP software selection, many approaches have been presented in the literature that differ from the ones presented above. Ayağ and Özdemir approach the software selection process using a fuzzy analytic network process (ANP) (Ayağ & Özdemir, 2007). While acknowledging the aforementioned AHP

to be widely used in multi-criteria decision-making problems, they argue that the fuzzy ANP is a more preferable approach to ERP software selection. According to Ayağ and Özdemir, the AHP falls short when multi-criteria decision-making problems involve interactions and dependencies which cannot be well represented in a hierarchical form. To address this, they decide to use the ANP, which considers the dependencies between factors. AHP and ANP are presented more in-depth by Saaty (2004). While being a more holistic approach, Ayağ and Özdemir claim that it heavily relies on the subjective judgements and preferences of the decision-makers, which is not suitable for ERP software selection. To deal with the vagueness created by both the subjective interpretation of qualitative criteria and evaluation of alternatives, Ayağ and Özdemir integrate the fuzzy logic to deal with the imprecision and subjectiveness in the process (Ayağ & Özdemir, 2007). Other things to note from their approach is that they picked the selection criteria by doing a thorough literature review and analyzed ongoing ERP software selection processes.

Another approach to ERP software selection that uses the ANP was presented by Yazgan, Boran and Goztepe (2009). In their study they present an approach based on the ANP but unlike Ayağ and Özdemir they instead aim to build an artificial neural network (ANN) model on top of the results from the ANP which has been conducted with a group of decision-makers (Yazgan et al., 2009). After training the model with groups it can be used by a subjective decision-maker to produce objective results (Yazgan et al., 2009). The selection criteria and their respective sub criteria were based on experience, as well as the relevant literature. The five main criteria are financial analyses, general characteristics, system control and software design, production planning and data and knowledge properties (Yazgan et al., 2009).

López and Ishizaka (2017) also approached the ERP software selection with a two staged process in which they propose a GAHPSort model for selecting a cloud-based ERP system. The premise of their study was the lack of research on cloud-based ERP software selection (López & Ishizaka, 2017). The first stage of the model included a sorting phase, in which the cloud-based ERP systems were given either a pass or a fail, which was intended to reduce the number of options in the final decision phase due to many possible alternatives in the markets. In the first phase the selection criteria were derived from a thorough literature review and a possibility for the decision makers was given to change the criteria if needed. After the sorting phase, López and Ishizaka apply the already mentioned ANP method for selecting the best system from the candidates that passed the first phase. The selection criteria were picked in the same way as in the first phase (López and Ishizaka, 2017).

After reviewing literature regarding SaaS, ERP and other software selection it can be said that most are very similar, especially when looking at the selection criteria. An interesting insight is that some of the studies are keen on presenting the criteria in a hierarchical model, while others tend to think that the intertwined dependencies of the factors prevent a hierarchy's use. The models presented in these studies mostly depend on the AHP or the ANP, though some also

included additional phases to the process. Many other studies not addressed in this thesis also approach the selection process using the AHP or ANP models (e.g. Wei et al., 2005; Yuen & Lau, 2008; Percin, 2008; Karaarslan & Gundogar, 2009; Piengang et al., 2019). However, other frameworks and models can be found in the literature as well (Martins et al, 2015).

When comparing the software vendor selection criteria, models and frameworks to the more general vendor selection literature it can be said that there are more similarities than differences. Most of the selection criteria in the software vendor selection studies can already be found in Dickson's (1966) work. In addition, the commonly used methods and frameworks of software vendor selection, such as the AHP, ANP and the use of fuzzy logic, can be found in the more general vendor selection literature (Boer et al., 2001). Still, there are some attributes that seem to be specific to the software vendor selection process. For example, there are naturally some selection criteria that only suit a software selection's characteristics, such as browser compatibility and portability of data (Repschlaeger et al., 2012).

### **2.3.3 Software vendor selection in the banking industry**

The literature reviewed so far has not addressed the software selection process in the banking sector in particular. Though the more general software selection practices and literature are possibly more or less interconnected to the practices and literature regarding the banking sector, the software selection process in the banking sector being our topic should be covered on its own and the related literature reviewed properly to understand the academics' views. In general, very few research papers can be found regarding software vendor selection processes in the banking industry (Thakur & Anbanandam 2015; Cao et al., 2012). However, some literature and case studies can be found that present models and case studies for banks selecting vendors for outsourcing information technology (Karami & Guo, 2012; Cao et al., 2012), Core Banking Software (CBS) (Rahman & Qi, 2016) or digital services in general (Thakur & Anbanandam, 2015). This literature consisted mostly of the already presented vendor selection methods, such as the use of fuzzy logic, ANP and AHP, and of combinations of different methods. Also, other methods were proposed such as the use of grey theory which was first introduced by Ju-Long (1982) and TOPSIS, which was introduced by Lai and his colleagues (1994).

As suspected, the literature showed significant similarities between vendor selection in the banking sector and the more general vendor selection methods. All of the case studies reviewed (Karami & Guo, 2012; Cao et al., 2012; Thakur & Anbanandam, 2015) used multi-criteria decision-making tools for vendor selection, and the selection criteria were based on past literature, as well as experts' contributions. The similarities between the selection processes of different industries are also noted in the studies themselves: one of the studies only uses the banking industry as an example case study for a framework for a more general IT service provider selection (Karami & Guo, 2012). Other studies suggest that their proposed method could be extended to other industries as long as the selection



criteria and their respective weights are adjusted accordingly (Thakur & Anbanandam, 2015, Cao et al., 2012).

Although not much can be said to differentiate the vendor selection processes in the banking industry from other industries, the biggest separating factor in the studies reviewed regarding the banking industry is the concern put into avoiding and managing risk. Karami and Guo (2012) argue that the most important factor in vendor selection for banks is risk, and that the risks should be highly considered especially in information system outsourcing since banks are so dependent on them. Also, in a case study by Baldwin and Irani (2001) they noted that the addressed bank avoided risk as a policy which resulted in the bank deciding not to outsource IS. Still, the management of risk has been noted in practically all of the other vendor selection literature as well, the mere difference being that Karami and Guo actually argue in favor of a criteria instead of leaving the measuring of criteria to the party who is doing the selection like other studies.

### 3 Methodology

The methodology of this thesis consists of four interviews. Two books were used to help and guide in creating the structure for the interviews, conducting them and analyzing the gathered data: *Qualitative research & evaluation methods: Integrating theory and practice* and *Conducting in-depth interviews: A guide for designing and conducting in-depth interviews for evaluation input*. These books came in handy especially in the process of creating the questions for the interview. In this thesis four people were interviewed, two of which work at OP Financial Group, which is the largest financial group in Finland (OP, 2023). The two other interviewees work for MORS Software, a Finnish financial software vendor that provides treasury, liquidity risk management and ALM (asset and liability management) software for banks. The interviewees were chosen from both sides of the banks' vendor selection process to gain an in-depth view of the process having both the banks and the vendor's view on it. For the rest of this thesis, the interviewees will be called Vendor 1, Vendor 2, Banker 1 and Banker 2 according to their respective fields of work.

Vendor 1 is the CCO at MORS and has participated in multiple software selection processes as the head salesman during his 7 years in the company. His role in the company is both leading the sales processes and maintaining the existing customer relationships. Before this role Vendor 1 worked at e.g. Thomson Reuters selling market data to banks. Vendor 2 has 30 years of experience in the field of consulting in software sales and implementation processes, 10 of which he has had his own firm, G2M Solutions Ltd, based in London. He has also worked for several companies such as FIS and MORS Software and has been in close contact with banks during his whole career. Banker 1 is a Senior Vice President at OP Uusimaa and has worked in different parts of the OP Financial Group for more than ten years. She has also led a team which was responsible for the selection of externally produced software at OP. Banker 2 is the Head of Business Partnerships and the Start-up and M&A Lead at OP Financial Group. In his day-to-day work he aims to help OP's current needs by searching for Fintech and start-up companies which they could work with in many ways such as implementing their software for OP's use or giving them a boost in their product development. Before Banker 2 has worked at Sanoma developing new business processes and also as a consultant for various investment banks.

The interviews were all conducted between 10<sup>th</sup> and 23<sup>rd</sup> of November in 2023, and they were all conducted one-on-one, using MS Teams. All the interviews were recorded and transcribed, lasting for about an hour each resulting in approximately four hours of interviews in total. I decided to conclude semi-structured interviews to both create a clear foundation of questions for myself during the interviews but also to leave room for open-ended discussion. The analysis of the gathered data was done by dividing it into categories according to the research questions, which were then used to piece together the results section. The table below contains the relevant information regarding the interviewees (Table 1).

Table 1. The interviewees

<b>The interviewees</b>				
Name	Vendor 1	Vendor 2	Banker 1	Banker 2
Position	Chief Commercial Officer at MORS	Founder of G2M Solutions Ltd. Business Developer at MORS	Senior Vice President at OP Uusimaa	Head of Business Partnerships, Start-up and M&A Lead at OP Financial Group
Experience in the field	25 years	30 years	30 years	15 years
Nationality	Finnish	British	Finnish	Finnish

## 4 Results

In this chapter I will review the results from the interviews. The chapter will be addressing the views of the interviewees considering the research questions introduced in chapter 1.

After the interviews it can be said that outsourcing is something that all banks do, at least to some extent. Banker 2 thinks that the increasing trend of outsourcing software has a lot to do with the development of cloud-based systems, such as SaaS, and the ease in regulation (in this case by Financial Supervisory Authority) regarding them. All interviewees agree that though some of the IT functions or software used by banks might be internally developed, it is essentially built on components developed by others, which lead us to quite philosophical conversations on the definition of outsourcing. For example, Banker 2 explains that though some of their software is internally built, it might still need servers provided by Microsoft and without the servers the software would not work.

The origins of software, however, vary widely between banks. Vendor 2 argues that many large banks have a significant IT department of their own, which provides the banks with internally built software. This software is naturally decided to keep in-house due to the bank feeling that they gain a competitive advantage from that software (Vendor 2). In some cases however, Vendor 2 thinks that it may not make sense for a bank to develop their own software: if there is a market standard function, which is highly regulated and includes many regulated calculations (such as KPI's like Liquidity Coverage Ratio) it is best to opt for a vendor produced Treasury or Asset Liability management solution. Since all banks must do the same tasks, it is more optimal to go for an off-the-shelf package rather than doing their own one (Vendor 2).

Banker 1 argues that banks going for the off-the-shelf software services provided by others has been the trend for some time now. She says that today banks outsource practically all software, though in the past there might have been some core processes, such as borrowing and lending, which were thought of as “holy”, and the related software therefore kept in-house. She also explains that OP uses many systems which are used globally, aiming for synergies and cost effectiveness. Vendor 1 goes along the same line stating that all banks outsource software, but there is a wide variety in the amount between banks. Similar to Vendor 2, Vendor 1 thinks that some banks keep software in-house to gain advantages in the markets, and others opt to outsource practically everything thinking that development is not their core competency. Vendor 1 adds that many neobanks, which are new banks that exclusively provide online services, have a lot of know-how in software development and are aiming to gain an edge over their competitors especially with their IT knowledge.

## 4.1 What does the software selection process contain?

### 4.1.1 Contents of the selection process

The software selection process was carefully depicted by the interviewees, and the process itself could be described as quite heavy. Banker 1 recalls that after the initial decision to outsource software for a particular need, they often start scouting for possible vendors, of which they meet a handful. This meeting consisted of a demo where the vendor was given the opportunity to showcase their software, its functions and logic. After that the process quickly goes to the specifics of connecting the software to the bank's other interfaces, as well as the code. The interconnectivity between the bank's already existing systems and the possible new one was described as an important and difficult part of the process by Banker 1. She also says that information security being one of the highest priorities of the bank, talks with the vendor might end very quickly if their software does not seem to fulfil the standards. It should be noted that Banker 1 also tells that she has not been a part of this process directly for some time now, and therefore felt that she could only provide upper-level detail regarding it.

Vendor 1 thinks that in the last 30 years the banks' processes have become much more structured and stricter: in the 80's and 90's bank regulation and culture was looser, and banks tended to select software from the markets more impulsively if they felt a need for it. Nowadays the process is very organized, and banks consider many questions before making decisions (Vendor 1). Both Banker 1 and Vendor 1 refer to a "spaghetti like" system in the banks which is a consequence of adding many different software and systems to the bank, resulting in an entity difficult to maintain and further develop. Vendor 1 further explains that today the structure of the process must be strict to also avoid costly wrong decisions when picking software, and if some were to happen it would be possible to at least refer to the stages of the process to avoid accusations of wrongful conduct.

Vendor 2 goes to more detail regarding the parts of the selection process. Interestingly enough, he argues that even 60-70% of the work done by the banks has to do with online research before even talking to any vendors. According to Vendor 2, the process typically starts with the bank providing a longlist ideally including 6 to 8 vendors in the market. With these vendors the banks usually have some initial conversations to inform the vendors of their requirements. Based on these talks the banks would then send a RFI (Request For Information) to the vendors on the longlist. The RFI includes questions which the vendors in turn answer, and then do a presentation on how they can address the requirements.

After the presentations the process leads to a shortlist of usually three to four vendors, and they go through a more detailed process called the RFP (Request for Proposal). In the RFP, the vendor is expected to give detailed estimates of the project implementation, costs of the software and thorough demonstrations and workshops to explain how they would address the bank's needs. The RFP then usually leads to two candidates being left, and the project would be taken over by

the procurement department of the bank, to conduct negotiations around commercial and financial details. After that the bank will select the vendor based on views by the stakeholders conducting the RFP. After the selection there can be a proof of concept or a pilot process to do further testing with the software (Vendor 2). Vendor 1 depicts the processes' parts along the same lines as Vendor 2, adding that sometimes some parts of the selection process are conducted by a consultant, not the bank.

Banker 2 agrees on the structure of the selection process but also mentions that the adoption of fintech software works very differently case by case. He goes further by giving an example of a start-up which had a new concept for a brokerage system based on blockchain technology. In this case they decided to start developing the software together with the start-up firm, eventually leading to a new brokerage system for OP. To Banker 2 this goes to show that the software selection process is not always a decision to build in-house or select an off-the-shelf software.

#### **4.1.2 Critical factors in the selection process**

For the selection process to be successful, the interviewees had many opinions on the most important parts. Looking from the vendors' perspective, Vendor 1 thinks that the most important part is that the bank provides the minimum requirements as early as possible in the process and does not change them. This helps the software vendor in assessing if they really have what the means for the bank's needs. Vendor 1 also argues that keeping to the presented requirements also helps the bank in the process. For Vendor 1, other important factor is the relationship between the vendor and the bank: finding the right contact person and having a good relationship will better the information flow and give the vendor a better chance at for example having a realistic proposal for price offer.

Vendor 2 also argues that the bank knowing what they need helps both sides in the process. He thinks that the bank should always define the problem which they are aiming to solve with the software clearly. This will help the bank to avoid the "bright lights of a software product" which may not even be a fit for the bank's needs. He goes further, saying that a good salesperson could take advantage of the situation and be able to persuade the bank to select software that does not meet their needs. From the vendor's perspective, Vendor 2 thinks that being involved in the market and talking to possible and existing customers is vital to have the vendor in the bank's minds already as they are in the early stages of the software selection process. He argues that sometimes filling out the RFP might be pointless for the vendor if it has not been in contact with the bank before as it is likely that other vendors already have a good relationship with the bank. He also gave an example of being on the right side of that exchange by having a good relationship with the customer, the final result being that they were selected practically before the customer's formal selection process even started.

Unlike Vendor 1 and Vendor 2, Banker 1 does not mention the supplier-customer relationship to be as important though it does matter. She highlights that the deep dive to the specifics of the software integration and security happens early in the process which suggests that the software and its vendor are selected very strictly according to them being able to meet the bank's requirements. As mentioned, Banker 1 highlights the security requirements and compatibility with the bank's other interfaces as the most important factors in the selection process, where the discussions might end quickly. Banker 2 is mostly along the same lines as Banker 1, telling that interface compatibility and information security are vital for a software to get to the next phase in the selection process.

#### **4.1.3 Selection models and criteria**

According to Banker 1 and Banker 2, the final pick of the software to be outsourced is usually done by a "committee" which includes people from many departments of the bank, such as legal, procurement, IT and the management personnel. Banker 2 explains that the selection criteria are mostly based on the RFP sheet, which has been originally created by the procurement department of the bank. He was not familiar with the process of creating the criteria but said that he believes some academic literature has been used in the process. According to him, the same goes for the selection model which the bank uses. He mentioned that the academic literature is also based on case studies from the banking sector, which raises the question of the real origin of the selection models and criteria. Banker 2 again pointed out that the criteria change case by case, and that the banking regulators guidelines play a major part in the process.

Banker 1 recalls that they have had a framework which included a list of selection criteria that ultimately formed a hierarchy of sorts. Not unlike in the AHP, these criteria were weighed allowing the comparison between software and vendor candidates. She was unsure whether the framework was based on any academic literature, though she knew that it was created by professionals. Both Banker 1 and Banker 2 emphasize that the whole selection process is professional, quite heavy and strict.

The interviewees from the vendor side had very differing views regarding the selection criteria. Vendor 1 agrees with Banker 2 that the requirements and criteria for the software are included in the RFI and RFP sheets but does not think that they always mirror the real criteria. He argues that the official criteria might have been "listed by a consultant who could even have copied, modified and pasted the criteria from another selection process he or she has been involved in". Overall, Vendor 1 says that he has seen a wide variety of quality in the official criteria given by the banks, worst case scenario being that the consult-created list does not really help the bank in the process of finding what they actually need. The best outcomes have come from selection criteria that have been created with the software's end users involved in the process. When asked about the selection criteria, Vendor 1 divides them into criteria regarding the actual functionality of the software, compatibility with the bank's other interfaces and systems and security measures. He argues that there are more factors in play however, such as the size

of the bank and the vendor: a large bank is very unlikely to buy services from a small vendor and though there may be some logic to it, Vendor 1 thinks that feelings play a big part in that. Vendor 1 adds that location plays a part in the selection process as well meaning the bigger the distance is from a vendor to a bank, the harder it gets to convince the bank that you can meet their needs. To conclude, he argues that the selection criteria are often not formed in a rational process, and the quality differs a lot from case to case.

Vendor 2 lists the selection criteria in three categories: functional, technical and commercial requirements. He thinks that the functional requirements are quite straight forward, being a list of what a bank needs to have in the software. The technical requirements are trickier, since a bank might for example have an arbitrary guideline that they only use Microsoft or Oracle based software or work only with on-premises or cloud-based software. Vendor 2 thinks that these kinds of rules may even come in the way of the banks' own business since they cannot necessarily pick the ideal product. The commercial requirements are often best met when the two sides have a good relationship and communications. Vendor 2 argues that sometimes the selection criteria given in the RFP process are cryptic and their origins very seldom explained. Though he has had cases where the bank actually explains the weights of each criterion, the process is not typically very transparent. This lack of transparency leaves doubt that there are decisions made that are not solely based on qualitative or quantitative statistics, but are down to some sort of preference, or even politics inside the bank (Vendor 2).

## **4.2 Risks, issues and enhancing factors in the process**

### **4.2.1 Risks and issues**

Banker 1 tells that “No software adoption process she has witnessed in her whole career has been completely successful and clear of trouble”. This is something that all of the interviewees agree on. From a bank's perspective, Banker 1 argues that though they do a lot of risk management while acquiring new software, unwanted surprises always come up. As already mentioned, one of the biggest risks in new software is a security issue of which Banker 1 also gives an example, where all 1100 personnel at OP Uusimaa were ready and to start using a newly integrated system. Upon the start, they unfortunately found a security issue in the system and had to cancel the whole process since it could not have been fixed. The other big risk in a software adoption process is the incompatibility to other interfaces, which could be fixed by the bank or the vendor, but ultimately can lead to total failure. The compatibility issues are in part caused by the complicated mixture of systems inside a bank. (Banker 1)

These kinds of errors lead to significant costs on the bank's sides, which is why Banker 2 highlights the importance of their “second line of defense” in the selection process consisting of legal and IT personnel that thoroughly check the software for any of the issues Banker 1 mentioned. In addition, many of the interviewees think that the bank is at risk of a situation where the vendor is promising more than they have or can handle. The bank in turn tries to eliminate this



possibility by making contracts with the vendor that bind it to its promises (Banker 2, Vendor 2). A more recent issue that has to be accounted for by banks is also corporate responsibility. Banker 1 argues that especially in today's world acquiring services from wrong places can very easily harm the company's reputation and is an important factor to consider. In other words, risk management in vendor selection also includes brand management.

Reputation is also an issue for the software vendors, especially smaller ones. It is much harder to convince a bank to buy a small vendor's services, as they are not that known in the market (Vendor 1). According to Vendor 1 and Vendor 2, a bigger player in the markets has the advantage of being known, and might already have other software used by banks, making it easier to sell them more software. Vendor 2 also argues that unlike the smaller ones, larger vendors have a multitude of ways to affect the software selection process but does not go into any detail regarding them.

Regarding the vendor's perspective, there are a multitude of risks and issues associated with the software selection process, the biggest one being the potential waste of resources and time (Banker 2, Vendor 1, Vendor 2). It is usual for the selection process to take up to two years (Banker 2) and the heavily structured process is not always likely to end up in success. Banker 2 puts the process in contrast to his time at Sanoma, where a software's selection and adoption process could be done in even weeks, depending on the criticality of its function of course. This is why the vendor must seriously consider if the process is worth going through and if they have the chance to be selected (Vendor 1). Vendor 1 tells that he usually assesses the worth of a sales process by measuring if they have at least 80% of the bank's requirements available off-the-shelf, which would then make it more probable to get the customer. This also helps to eliminate another risk in the process: even though succeeding in getting the customer, the workload that comes after being selected might still be too heavy if the software needs to be developed a lot according to the bank's needs.

Another issue that has already been mentioned is the information asymmetry and lack of transparency from the bank (Vendor 1, Vendor 2). The lack of transparency can be seen in the answers of the interviewees: while Banker 1 and Banker 2 have highlighted that the selection process is heavily structured, formal and professional, Vendor 1 and Vendor 2 have perceived it to sometimes be rather subjective and even political. Also, the selection criteria seem to be an issue for the vendors: both Vendor 1 and Vendor 2 think that the RFI sheet does not always include the actual requirements, making it hard to really know what the bank wants. Vendor 1 goes as far as to say that for vendors the bank's needs are sometimes a guessing game. Both Vendor 1 and Vendor 2 think the lack of information flow affects both sides negatively. Unfortunately, the order of these interviews did not provide a chance for cross examination of this issue from the interviewees working at OP, leaving the topic uncovered from the bank's point of view. Banker 2 and Banker 1 both gave the impression that the needed information of the bank's requirements is found in the RFI and RFP processes.

More issues were however covered from the vendors' point of view, one of the more difficult ones being the bank changing its requirements or scope. As already mentioned, this makes no wonders for the vendor trying to both win the sales race and consider if the race is worth it to begin with (Vendor 1). Another more minor issue was the possibility of the bank going through the selection process just to seek out information and then build the software themselves (Vendor 2). However, Vendor 2 suggests that this is not a risk that he has faced too often.

#### **4.2.2 Enhancing factors**

Now that the risks and issues regarding the selection process have been covered, the common factors that increase the success of the process should be considered as well. Banker 2 highlighted the importance of proactiveness from the vendors side as the factor he most sees in successful software selection processes. Every adoption process includes some issues and therefore he argues that the vendors positive attitude will greatly influence the outcome. Banker 1 points out that while the importance of good discussion channels cannot be overlooked, she puts most trust in the framework which the bank works with in these processes. She believes that every step of the process from the bank's side has been developed by professionals to minimize the number of possible mishaps or unwelcome surprises, improving the chances of success.

Like Banker 2, Vendor 1 also believes that a proactive vendor has better chances of succeeding. It is important to get into a position where the vendor has the possibility of freely asking questions from the bank, and to also give the bank the chance to ask questions back. The ideal situation is a dialogue of sorts and without it the process will be hard, especially for smaller vendors (Vendor 1). As a salesman he also thinks that being honest goes a long way for the vendor as many vendors tend to "promise the moon and the stars" which then results to more work and potential upsets. Vendor 2 is along the same lines with Vendor 1 telling that open communication and good relations are the keys to success, especially for the vendor.

### **4.3 What separates the process in the banking sector from other industries?**

One of the questions that rose during the literature review regarding this thesis was the potential separating factors between industries regarding the software selection process. All of the interviewees thought that one factor separating the banking sector from others is the importance of information security (Vendor 1, Vendor 2, Banker 1, Banker 2). Banker 1 explains this further by saying that "banking is above all else a business based on trust", which forces the banks to invest in making sure their systems are as secure as possible. Another separating factor mentioned by Vendor 1, Vendor 2 and Banker 2 is regulation by the Financial Supervisory Authority. Banker 2 thinks that the strict regulation forces the banks to precisely document their actions, making the software selection process heavily structured, sometimes even to the point that a software might not be

worth adopting since the process takes so many resources. Vendor 2 also agrees on this, giving an example from a similar process in another industry: he has seen software selection processes that do not include an RFP process at all and where the decisions are much more loosely made. Another separating factor that came up was the level of integration between the new software and the organizations other systems, and the difficulty of that process (Vendor 1). This was due to the above-mentioned complex body of a bank that can consist of tens or even hundreds of different systems (Vendor 1). However, it should be noted that the interviewees do also think that the software selection and adoption process does share many mutual factors across industries.

## 5 Conclusion and discussion

### 5.1 Conclusion

Looking back to the research questions, the most important factors and criteria in a software selection process were found in the conducted interviews, as were the differences in the views of the vendors and banks. From the banks' perspective, the most important factors in the selection process are security and compatibility with other interfaces and systems used by the banks. These are also the factors that cause most of the issues in the process. The interviewees working on the vendor's side thought these factors to be important as well but emphasized the importance of communication channels and transparency. The lack of transparency seems to cause suspicion regarding the integrity of the banks' internal decision processes, which were illustrated as professional and formal by the interviewees working at OP. According to the findings from these interviews, the varied views of the different parties might be caused by lack of information, though it should be noted that there can be significant differences between banks regarding their culture of conducting selection processes. Still, it seems like all banks are forced to have a relatively heavy process that is well audited due to regulation, which leaves a smaller margin for them to act in the ways depicted by Vendor 1 and Vendor 2.

Regarding the selection criteria and requirements, the findings were also quite two folded: both the vendors and bankers agree that the initial requirements are depicted in the RFP process, but the vendors still think that according to their experiences the requirements are often hidden or changing, even to the point of thinking that the bank does not really know what it wants. This again could be explained by the lack of transparency in the process. The different views might also be caused by consultants working as middlemen in the process, leaving a fog of sorts between the vendor and the bank. The same goes for the selection models used by the banks: the models are made by professionals in the procurement department of a bank and these models are strictly followed in normal software selection processes. The vendors had no knowledge regarding the models and believed that sometimes the process is run by the book just for show. Again, since the bank's doings are not transparent, these suspicions cannot really be verified as true or false.

Though software selection processes share common ground across industries, all interviewees agree that the separating factors of the banking industry in contrast to other industries are the heavy and highly regulated nature of the selection process, as well as the difficulty in integrating software to other systems in a bank. Though the strict process is easy to justify, it does cause issues for both sides, taking a lot of effort and therefore having to assess if the process is even worth it to begin with.

## 5.2 Contrasting to previous research

Contrasting to previous research and literature on the topic, there are no significant findings that have not been covered already. On the other hand, many similarities can be found. For example, many of the risks regarding a BPO (Liu et al., 2023) were mentioned by the interviewees, such as the issue of the customer changing their scope or requirements. Regarding the selection criteria, the ones that the interviewees mentioned can be found in some form from many of the studies covered in this thesis. The most accurate depiction in contrast to the results Godse's and Mulik's selection criteria that included functionality, architecture, usability, vendor reputation and costs, the two first ones being the most accurate ones. Most of the literature that present frameworks, models and criteria for vendor selection agree that they can be expanded to many industries, as long as the criteria and their respective weights are adjusted accordingly (Boer et al., 2001; Saaty 2004; Şen et al., 2008). The same conclusion was also made by Vendor 1 and Banker 1.

There are many different selection models presented in the literature, and though the interviewees could not name any from academic literature, they did suggest that some literature has been used in creating the bank's own models. Banker 1 mentioned that the model they have had in use included selection criteria that were weighed and put into a hierarchy, which implies the use of the AHP or something similar to it.

## 5.3 Implications to practice

The results of this thesis show that there is a major gap between the perceptions of the vendors and the bankers of how the software selection process is conducted on the bank's side. This does not mean that the vendors think all banks use invalid methods in the process, but the fact that they do not actually know if that is the case leaves room for suspicion. This information asymmetry goes the other way around as well: the banks cannot be certain that the vendor is offering the same product that it actually can provide. However, the risk of this happening can be eliminated quite efficiently with a thorough process which Banker 1 and Banker 2 illustrated. In conclusion, the lack of transparency in the selection process makes the job of the vendors harder as they feel that they sometimes have to guess what the bank wants, and cannot really know what happens behind the curtain, leaving doubt of the integrity of the process on the table.

This issue could be at the very least partially fixed if the banks were more open about the whole selection process. On the other hand, there are certainly reasons why banks decide not to reveal everything about the selection process, some of which could potentially have to do with information security issues. The lack of academic literature regarding the selection process in the banking sector also suggests that no one has actually ever asked multiple banks about their selection models to construct a comprehensive review.

Another implication to practice gathered from this thesis' results is for the banks to avoid building a system which is too complex for their own good. This is not new knowledge, and banks are certainly keeping this in mind already. For banks

that have existed for a long time this might be a useless tip since they have already put up a complex network of systems within them, and the renovation would come with considerable costs. However, the rise of neobanks or challenger banks, that offer only online services especially in Europe and North America, means that many new banks have been established in the recent past and many will be formed in the future. These newer banks have a serious chance to build themselves with the knowledge gained from mistakes made in the past by banks that have ended up with such complex systems that it has started to affect their performance and decisions. Ultimately, this can lead to competitive advantages.

#### **5.4 Limitations and future research**

This thesis does not come without limitations. Firstly, the empirical study that was conducted for this thesis had only four interviewees of which two worked at the same bank, and the other two had also been working together for a long time. Though they were certainly experts in their respective fields, interviewing four people does not give the most comprehensive look into any sector nor topic. Furthermore, banks and companies in general have different cultures and methods for vendor selection as for other processes, which is why more banks and software vendors could be involved in the study. It should also be noted that three of the interviewees were Finnish and one was British, leaving room for a study conducted with people from different countries and cultures having more diverse backgrounds, to gain more comprehensive results.

As the results of this thesis show, there are clearly differences in the views of vendors and banks on how the selection process is conducted, which is something that could be further empirically researched to find out if banks in general tend to stick to their selection models and structures or if their actions are based on other factors. As said above, this study could be conducted with more people that work for different software vendors and banks to reduce the impact of individual person's subjective views, as well as work cultures within companies. The research could be done in the form of case studies, where both sides of the selection process are interviewed. This would add value to the results by having the two parties address the same software selection process. In these case studies I would suggest that all people involved (including IT, legal, procurement and management departments etc.) are interviewed to get the full picture of both the bank's and the vendor's perspectives.

More research could also be done regarding the selection models that banks use. In this thesis, the specifics of the models were not entirely reviewed as the participants did not know the whole process of forming the models, nor did they have knowledge of the academic literature regarding them. According to the interviewees (Banker 1, Banker 2) the selection models are created by the procurement department of the bank, suggesting this department to be a fitting one to interview banks across the market in future research. This research could seek to figure out how and by whom the selection models are created and if they have anything to do with the literature regarding the topic.

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# Appendices

## Appendix 1: The interview questions for this thesis

1. Who are you?
2. How common do you think it is for banks to outsource software?
3. Could you describe the process of selecting software and software vendors?
4. What criteria do you consider important for banks in the selection process of software and software vendor companies? Why?
5. Could you describe the selection models or methods used by banks in these selection processes?
6. Are there any flaws or problems with the model used in the selection process?
7. What are the problems with the selection process in general?
8. In your experience, which factors better the selection process?
9. What are the main risks in the selection process?
10. In your opinion, do the selection processes for software in banks differ from those in other sectors? How?