Post-Implementation Improvement of ERP System Usage in SMEs

An Empirical Case Study of E-Commerce Retail Companies in Sweden.
Abstract

Background: ERP systems were perceived as the most significant invention for corporations during the rise of information technology in 1990s (Davenport, 1998). Today ERP systems are a multibillion dollar business and used by both LEs and SMEs. Using an ERP system is a continuous project and it is important to constantly look for misalignments in the system and the usage in accordance to the organizational structure also during post-implementation phase (Peng & Nunes, 2017).

Problem: Despite the abundance of studies regarding the implementation of ERP systems there is a shortage of studies about the post-implementation phase, where existing post-implementation studies are rather fragmented around a large set of issues (Huang & Yasuda, 2016; Peng & Nunes, 2017). Furthermore, the studies about ERP usage during post-implementation tend to focus on user perspective or evaluation of system or organizational performance (Huang & Yasuda, 2016).

Purpose: The purpose of this thesis is to investigate how SMEs improve the usage of ERP systems during the post-implementation phase.

Method: To fulfill the purpose of this study, the empirical data was collected through a multiple case study of three cases with SMEs of e-commerce retailer companies in Sweden. Qualitative semi-structured interviews were conducted with top management of the three SMEs in order to get understanding of underlying methods and reasons for the system usage improvement.

Conclusion: Findings of this study show that SMEs improve their system usage through enhancing knowledge-sharing and organizational learning as well as through unification of the procedures that is achieved through external support and knowledge-sharing.
# Table of Contents

1. **Introduction** ............................................................................................................. 1  
   1.1 Background .............................................................................................................. 1  
   1.2 Problem Statement .................................................................................................. 4  
   1.3 Purpose ..................................................................................................................... 5  
   1.4 Method ...................................................................................................................... 5  
   1.5 Contributions .......................................................................................................... 5  
   1.6 Definitions and Key Terms ..................................................................................... 6  
   1.7 Scope and Delimitation ............................................................................................ 6  

2. **Frame of Reference** ................................................................................................. 7  
   2.1 Establishing a Frame of Reference ......................................................................... 7  
   2.2 The ERP Life Cycle .................................................................................................. 8  
   2.2.1 Pre-Implementation Stage .................................................................................. 8  
   2.2.2 Implementation Stage ......................................................................................... 10  
   2.2.3 Post-Implementation Stage ................................................................................. 11  
   2.2.3.1 Knowledge-Sharing and Organizational Learning ............................................. 11  
   2.2.3.2 External Support ............................................................................................ 13  
   2.2.4 Role of Top Management .................................................................................... 14  
   2.2.5 SMEs ................................................................................................................... 14  

3. **Methodology** ........................................................................................................... 16  
   3.1 Scientific Philosophy ............................................................................................... 16  
   3.1.1 Interpretivism ....................................................................................................... 16  
   3.2 Scientific Approach ................................................................................................. 17  
   3.2.1 Inductive Approach ............................................................................................ 17  
   3.3 Research Strategy .................................................................................................... 18  
   3.3.1 Case Study .......................................................................................................... 18  
   3.4 Research Method and Design .................................................................................. 19  
   3.4.1 Qualitative Method .............................................................................................. 19  
   3.4.2 Case Selection ...................................................................................................... 19  
   3.4.3 Data Collection .................................................................................................... 22  
   3.4.4 Data Analysis ....................................................................................................... 23  
   3.5 Quality Criteria ........................................................................................................ 23  

4. **Data Presentation** .................................................................................................... 25  
   4.1 Company A ............................................................................................................. 25  
   4.1.1 Decision of Implementing an ERP System ......................................................... 25  
   4.1.2 Usage of External Support .................................................................................. 25  
   4.1.3 System’s Effect on the Organization .................................................................... 27  
   4.1.4 Organizational Changes to Fit the ERP System ................................................... 28  
   4.1.5 Internal Knowledge-Sharing .............................................................................. 29  
   4.1.6 Organizational Learning ...................................................................................... 30  
   4.2 Company B ............................................................................................................. 31  
   4.2.1 Decision of Implementing an ERP System ......................................................... 31  
   4.2.2 Usage of External Support .................................................................................. 31  
   4.2.3 System’s Effect on the Organization .................................................................... 32  
   4.2.4 Organizational Changes to Fit the ERP System ................................................... 33  
   4.2.5 Internal Knowledge-Sharing .............................................................................. 34  
   4.2.6 Organizational Learning ...................................................................................... 35  
   4.3 Company C ............................................................................................................. 36
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.3.1</td>
<td>Decision of Implementing an ERP System</td>
<td>36</td>
</tr>
<tr>
<td>4.3.2</td>
<td>Usage of External Support</td>
<td>36</td>
</tr>
<tr>
<td>4.3.3</td>
<td>System’s Effect on the Organization</td>
<td>37</td>
</tr>
<tr>
<td>4.3.4</td>
<td>Organizational Changes to Fit the ERP System</td>
<td>39</td>
</tr>
<tr>
<td>4.3.5</td>
<td>Internal Knowledge-Sharing</td>
<td>41</td>
</tr>
<tr>
<td>4.3.6</td>
<td>Organizational Learning</td>
<td>43</td>
</tr>
<tr>
<td>5.</td>
<td>Analysis</td>
<td>45</td>
</tr>
<tr>
<td>5.1</td>
<td>Post-Implementation</td>
<td>46</td>
</tr>
<tr>
<td>5.1.1</td>
<td>Knowledge-Sharing and Organizational Learning</td>
<td>46</td>
</tr>
<tr>
<td>5.1.2</td>
<td>External Support</td>
<td>49</td>
</tr>
<tr>
<td>5.1.3</td>
<td>Organizational Changes and System Impact</td>
<td>50</td>
</tr>
<tr>
<td>6.</td>
<td>Discussion and Conclusion</td>
<td>51</td>
</tr>
<tr>
<td>6.1</td>
<td>Discussion</td>
<td>51</td>
</tr>
<tr>
<td>6.2</td>
<td>Conclusion</td>
<td>54</td>
</tr>
<tr>
<td>6.3</td>
<td>Contributions</td>
<td>55</td>
</tr>
<tr>
<td>6.4</td>
<td>Limitations and Future Research</td>
<td>55</td>
</tr>
<tr>
<td>References</td>
<td></td>
<td>57</td>
</tr>
<tr>
<td>Appendix</td>
<td></td>
<td>63</td>
</tr>
</tbody>
</table>
Acknowledgements

Firstly, we would like to give our sincerest gratitude and our deepest thanks to our tutor, Mr. Christopher Lörde, for helping us through this, at times, ambiguous and challenging process. We are forever grateful for the invaluable feedback and insights which you have provided during this time.

Secondly, we thank our dearest friends and colleagues for the never-ending support, thoughtful feedback and cheerful attitude during this writing process we have experienced together. Your observations and comments enhanced the quality of this thesis.

Lastly, we want to give our most earnest and profound thank you to each of the companies which took part in this study, without whom this thesis would merely not have been possible.

Josefin Kvillert
Sami Reijonen
1. Introduction

This chapter introduces the background to the study, the underlying problematization, as well as its purpose. The chapter is concluded by describing the method, key terms and definitions, and finally the contributions and delimitations of this study.

1.1 Background

“Enterprise systems appear to be a dream come true” (Davenport, 1998, p. 121). Enterprise systems, or more commonly Enterprise Resource Planning (ERP) systems, are cross-functional systems composed of modules that together integrate a business’ key processes and activities (Peng & Nunes, 2017). Common modules include core functions such as supply chain management, customer information, marketing and sales, human resource management and finance (Davenport, 1998). An ERP system’s biggest benefit is its fully integrated system and the access to real-time information (Robey, Ross & Boudreau, 2002; Ross, 1999). By merging key functions, it enables an overview of the information that flows within the organization increasing efficiency, better decision-making and control, as well as cost reductions (Holland & Light, 1999; Davenport, 1998; Ross, 1999). The system allows for each employee, regardless of division or office location, to seamlessly track all of the organizations’ activities.

ERP systems were reputed as the most significant development in terms of corporate use during the exponential rise of Information Technology (IT) in the 1990s (Davenport, 1998). ERP systems first gained its popularity among large enterprises (LEs), allowing them to move away from fragmented systems (Ross, 1999). Since then, ERP systems have become a multibillion-dollar industry, expected to be valued $82.3 billion dollars in 2018, and are today implemented by organizations of all sizes, small and medium sized enterprises (SME) and large enterprises (LE) alike (Statista, 2018; Peng & Nunes, 2017).

Yet, ERP systems are not always a dream. ERP systems are of high costs and a long implementation process (Ross, 1999). Kimberling (2017) report that an implementation project on average cost $1.3 million dollars in 2016 and had a duration of 16.9 months. Moreover, the project may be abandoned or terminated at any given time during the process due to costs, technical problems or insufficient impacts on the organization (Markus & Tanis,
2000). In fact, despite recent increases in success rates, 26 percent of projects are still characterized as a failure and organizations continue to experience budget overruns and extended project durations (Kimberling, 2017).

Despite extensive investments into an implementation project, once the implementation process has been deemed successful, few resources are put towards the post-implementation of the project (Nah & Delgado, 2006). The improvement of ERP system usage is not limited to the implementation phase, however, many companies see implementation of an ERP system as the ultimate goal, ignoring the importance of post-implementation improvement (Scott & Vessey, 2000). This has led to eventually withdrawing the use of the ERP system, only months after successful implementation (McGinnis & Huang, 2007). Yet, successfully completing the implementation of the ERP system is not the end of the project (Peng & Nunes, 2017). The ERP life cycle can be explained through a series of steps, simply interpret as pre-implementation, implementation and post-implementation. Markus & Tanis (2000) defines the process through four phases: project chartering (pre-implementation); the project (implementation); ‘shakedown’; ‘onward and upward’ (post-implementation).

The initial phase, project chartering, is the pre-implementation phase in which the overall construct is defined, including intended system functionality, organizational goals with using the system and how the system will be rolled out and maintained. The project then enters the implementation phase where the system is configured and implemented to meet the goals and parameters set in the initial phase (Markus & Tanis, 2000). At which point the system ‘goes live’, the project enters post-implementation (Gattiker & Goodhue, 2005). The ‘shakedown’ phase is where attention is put towards reworking, tuning and debugging the system, and managing issues related to training, lack of ease of use, as well as diagnosing and solving problems. The ‘onward and upwards’ phase is when the organization has returned to routine operations and is where benefits of the system is realized. Decisions are made regarding continuous improvements and maintenance (Markus & Tanis, 2000). Post-implementation is regarded as the last two phases.

Once the system ‘goes live’ and enters post-implementation, firms may experience a drop in performance (Ross & Vitale, 2000). In general, it appears that it is in the post-implementation phase possible deficiencies of prior phases will surface that may have been gone unseen. These discrepancies may affect productivity and firms may sense business disruptions.
(Markus & Tanis, 2000; Ross, 1999). Gattiker & Goodhue (2005) suggest that with time the impact of the ERP system will become increasingly positive, but that the effects vary significantly on the firm. Ross (1999) highlights the importance of continuous improvement in the post-implementation phase to continue to derive value from the project.

Peng & Nunes (2017) further underlines that to enable continuous business improvement, post-implementation evaluations are crucial for long-term success. Evaluations may identify the misfits between the ERP system and the organization; misfits, which not only involves technological misalignment, but more critically, can be rooted in organizational and managerial issues. Post-implementation may thus be seen as a critical aspect of integrating an ERP system into an organization, and identifying the underlying issues that prompt improvements of the systems and the system usage in order to further align the system with the organization, its operations and its goals.

Improvements can be attained towards ERP usage after entering the post-implementation phase. ERP usage has significant effects on post-implementation learning (Chou, Chang, Li & Chou, 2014b). ERP usage can be divided into three categories, decision support, work integration and customer service (Lorenzo, 2001). Decision support handles solving problems and justifying decisions. It can, for example, be reports and analysis which helps the top management to make better decisions. Work integration is about coordinating activities between different business units as well as superiors and subordinates. Work integration happens when the employees find benefits of the system in their working methods (Chou et al. 2014b). Customer service is for servicing internal and external customers, meaning that the ERP system can be used to enhance customer service experience, for example by having more information of what to promise to customers.

Zuboff (1988) introduced the idea of dividing functional role of IT into two categories: automating and informating. Lorenzo (2001) further developed the idea into the ERP context by defining automating functionalities as the functionalities which produce continuity, uniformity and control in the processes whereas informating functions is utilizing the system to generate information of the processes which organization uses to perform its work. Informating functions are used for decision support, work integration and customer service.
1.2 Problem Statement

The vast majority of the existing literature of ERP systems focuses on the implementation phase of the ERP life cycle (Ifinedo et al., 2010). The implementation phase, particularly in relation to Critical Success Factors, which are identified factors that affect the success of the ERP implementation (Holland & Light, 1999; Akkermans & Helden, 2002; Hong & Kim, 2002), has been the norm. Indeed, the implementation phase have dominated the ERP research so over-abundantly that the research field may be getting mature (Huang & Yasuda, 2016; Peng & Nunes, 2017).

Despite the abundance of research in the field of ERP implementation, there is a lack of studies in the post-implementation phase (Huang & Yasuda, 2016). Additionally, the existing studies within post-implementation tend to be fragmented, focusing on a wide range of issues (Peng & Nunes, 2017; Zhu et al. 2010). The usage has been one of the most prominent subjects in ERP post-implementation studies, however, the usage-related studies primarily focus on evaluation of organizational or system performance or user satisfaction (Huang & Yasuda, 2016). Instead, how SMEs are pursuing to improve their ERP system usage during the post-implementation phase has not previously been studied.

ERP systems are rapidly becoming more common in SMEs due to lowering costs and more suitable systems designed for SMEs (Cereola et al., 2012). However, there is currently little empirical research conducted on post-implementation in a SME context, even though that is when the benefits of the systems should be realized (Markus & Tanis, 2000). The lack of research may be due to the only recent shift in the ERP industry to move away from the traditional, standalone systems to cloud-based and open-source systems (Huang & Yasuda, 2016; Cereola, Wier & Norman, 2012).

Moreover, SMEs are remarkably different to LEs. SMEs often lack the knowledge and resources of best practices of using an ERP system and have to rely on external consulting and ERP vendors, which are generally less willing to conduct heavy integration on the ERP systems for SMEs (Zach, Munkvold & Olsen, 2014). Hence, it is of interest to study SMEs. The research literature of ERP systems in a SME context is rapidly increasing, and potentially shorter life-cycle of ERP systems in SMEs enhances them as samples for addressing more operational issues, yet empirical research is practically non-existent (Huang & Yasuda, 2016).
1.3 Purpose

The purpose of this paper is to investigate the strategies SMEs use to improve their ERP usage in the post-implementation phase.

RQ: How do the SMEs improve their ERP usage after the implementation?

1.4 Method

To answer the research question, a multiple case study was conducted. Qualitative methods were used in which data was collected through a series of semi-structured interviews of small and medium-sized e-commerce retail companies which have implemented an ERP system. The e-commerce retail industry is an instructive context for this study as companies within the industry are avid ERP-systems users, and are thus likely to provide valuable insight on their experience on ERP usage in the post-implementation phase.

1.5 Contributions

This study makes contributions to research on post-implementation improvements of ERP usage, particularly in regard to ERP usage improvement strategies of small and medium sized enterprises. Findings can help small and medium sized enterprises evaluate their strategies of system usage to facilitate enhanced usage of the system. Additionally, this study provides insights to ERP vendors and external support on how they provide their services to small and medium-sized enterprises.
1.6 Definitions and Key Terms

- **SME**: Small and medium sized enterprises. In this study we use the definition by the EU commission (2003) which distinguishes SMEs from LEs on certain criterion; SMEs are defined as enterprises of micro, small and medium size with an employment ceiling of 250 employees, not exceeding €50 million in turnover and/or a €43 million annual balance sheet.

- **ERP**: Enterprise Resource Planning System. In this study we use Peng and Nunes (2017) definition of cross-functional systems composed of modules that together integrate business’ key processes and activities.

- **ERP vendor**: Supplier of the ERP system, not necessarily the producer but the party which sells the software.

- **Post-implementation**: In this study we use Markus and Tanis’ (2000) framework of different phases during the ERP life cycle. The ‘shakedown’ phase and the ‘onward and upward’ phase are combined in this study to cover the post-implementation phase.

- **ERP usage**: Interaction between end-users and the system in order to fulfill business related tasks.

1.7 Scope and Delimitation

This study is limited to explaining how ERP usage is improved in SMEs in the post-implementation of the ERP life cycle. The post-implementation phase starts when initial designing and engineering processes of an ERP system have terminated and the system ‘goes live’ in the organization (Ross, 1999; Gattiker & Goodhue, 2005). The findings of this study may not be applicable to large enterprises, nor the pre-implementation or the implementation phase of the ERP life cycle. Since this study is conducted in Sweden, with a sample of Swedish e-commerce companies, the findings may not be accurate to other nations or industries. For a company to be viable for this study, they have to be operating in the e-commerce industry and have completed the implementation of an ERP system to which point they now can be characterized to be in the post-implementation phase of an ERP system. The study will be explored from a top management perspective. Top management are users of the system in the SMEs but also has the most influence to affect the decisions made in the organizations and, thus, can provide the most accurate information of the reasons for what managerial decisions were made.
2. Frame of Reference

This chapter establishes the frame of reference for the study and covers the ERP life cycle and its different phases. In the post-implementation phase, emphasis is put on organizational learning, knowledge-sharing, external support. Lastly, SMEs are examined within the post-implementation phase.

2.1 Establishing a Frame of Reference

Bryman & Bell (2015) argue that existing literature is an essential component when conducting research in order to obtain knowledge of what is already known within the field. A frame of reference has therefore been established to gain a deeper understanding of the current literature and create a foundation of theory to help the narrative of the study and answer the research question. The databases Primo, Scopus and Google Scholar have been used. Primo provides access to multiple different databases such as Emerald, ProQuest and Taylor & Francis while Scopus allows us to sort the literature based on the amount of citations. Google Scholar is also a valuable tool to distinguish which articles are influential by providing an overview of articles and their number of citations. By having used scientific databases and searched based on specific keywords, we have collected data in a structured fashion. Multiple keywords were used to narrow the dataset and capture the most relevant literature.

Most research topics are rich in research; capturing the entirety of a topic is thus unlikely (Bryman & Bell, 2015). For that reason, Bryman & Bell (2015) emphasize the importance of identifying the main authors and the most influential literature within the field. Two main objectives have driven the collection of secondary data; first, identify the research that has influenced the field’s progression, and second, find the present, most relevant literature published to gain an understanding of what is already known within the ERP field and the post-implementation phase, both from an historic and a modern perspective. The publication period thus ranges from what Peng & Nunes (2017) call the ‘first wave’ and ‘second wave’ of ERP publication to present times.
Table 1: Search Parameters for the Frame of Reference

<table>
<thead>
<tr>
<th>Search Parameters</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Database and Search Engines</strong></td>
<td>Primo, Scopus, Google Scholar, Jönköping University library.</td>
</tr>
<tr>
<td><strong>Search Words</strong></td>
<td>ERP, ERP system, ERP-system, Enterprise Resource Planning, Enterprise System, Post-Implementation, Post Implementation, SME, SMEs, Small and Medium Sized Enterprises, ERP use, ERP usage, Improvement, Leadership, Leadership Style, Implementation, Selection, Pre-implementation, Pre implementation, Knowledge-Sharing, Knowledge Sharing, Organizational Learning, Learning, Organization, Transformational, Transactional, Consulting, External support, Self-Efficacy, Self Efficacy, Top management.</td>
</tr>
<tr>
<td><strong>Literature Types</strong></td>
<td>Peer-reviewed articles, Literature books.</td>
</tr>
<tr>
<td><strong>Languages of Publication</strong></td>
<td>English.</td>
</tr>
</tbody>
</table>

Articles has been chosen on a selective basis, by examining titles and abstracts one by one. The number of citations has heavily influenced the selection process, notably within a specific search where articles’ number of citations have been matched in relation to each other. As ERP systems change rapidly due to technology advancements, date of publication has also been an influencing factor where weight has been put on recent publications.

### 2.2 The ERP Life Cycle

To define the different phases of an ERP project, we use Markus & Tanis (2000) framework of four different phases. We regard phase I as pre-implementation, phase II as implementation and phases III and IV as post-implementation.

#### 2.2.1 Pre-Implementation Stage

Markus and Tanis (2000) describe the phase I as project chartering. The most important activities during this phase include selection of the system, determining a project manager and a project team, defining the budget and schedule, evaluating different systems, vendors, resellers and consultants and making contracts with them (Hostad & Olsen, 2013). Mistakes made in this phase may lead to inefficient ERP usage after the implementation or total failure.
of the project and consequently abandoning the ERP system (Markus & Tanis, 2000). The ERP system must fit the organizational structure and special needs of the company (Nwankpa, 2015). When identifying the project team, it has been found that smaller project teams which work over department borders lead to more successful results than large project groups with representation of all departments (Snider et al., 2009). To identify the ideal members for the project groups, it is crucial to emphasize self-leadership, internal locus of control and a proactive personality to achieve the best results during the implementation phase (Hoch & Dulebohn, 2013). Considering the project manager, it has been found that transformational leadership style is more effectual in both the implementation and the post-implementation phase, although some traits of transactional leadership are beneficial during the post-implementation phase (Hoch & Dulebohn, 2013). In the SME context, it is likely more beneficial to hire an external consultant to be the project leader as they have more relevant experience of project management and it is often not possible to release an employee from his current duties to execute the implementation phase full-time (Snider et al., 2009). It is also important to carefully consider different vendors and systems in order to find the most suitable one, which requires not ruling out different systems too early based on cost (Upadhyay & Dan, 2009; Hustad & Olsen, 2013; Zach et al., 2014). Furthermore, to avoid employees’ negative perception of the new system, it is important to give them time to get used to the idea of implementing the system by not rushing too fast into the implementation phase (Abdinnour-Helm et al., 2003; Nassar & Warrad, 2017).

In the SME context, Zach, Munkvold & Olsen (2014) found that, the decision to implement an ERP system is often sudden and dependent on the mindset of the owner. One main factor when choosing the ERP system for an SME is cost (Zach et al., 2014). However, this may not be the best approach to find the most suitable system (Upadhyay & Dan, 2009). Upadhuay and Dan (2009) suggest that different vendors should not be rejected too early based on price as it may lead to more inefficient use in the future. They suggest to first consult people who already have experience of an ERP system in a similar context and make reference visits to such companies with different vendors. It is also important to have a clear vision of what value-adding principles the system should have in order to find the best possible system. Because SMEs have less resources and consequently they might be more prone to critical damage in case the ERP project fails, it is crucial to choose the most suitable system for the company (Cereola, Wier & Norman, 2012).
2.2.2 Implementation Stage

After the chartering phase in the Markus and Tanis (2000) framework, the project phase, more commonly known as the implementation phase, is initiated. During this phase the aim is to get the system going and teach the end users how to use the basic functions. Important activities during implementation are project management, user training, data cleaning and conversion and testing and customizing the system (Hostad & Olsen, 2013). Ross and Vitale (2000) found that it is common for companies to experience performance dip after the initial implementation of the system. This finding is supported by Markus, Axline, Petrie and Tanis (2000) as they discovered that many companies have difficulties of diagnosing the problems of the system and recovering from them. They also noticed that success during the implementation phase may not indicate success in post-implementation, either due to problems in the latter phase or because of unrealized benefits of using the new system. The most crucial factor of successful execution in the implementation phase is top management involvement (Nassar & Warrad, 2017). Top management involvement includes financial backing, encouragement and relieving employees from their regular duties to concentrate on the system implementation (Snider et al., 2009). Specifically, providing sufficient technical resources has positive impact on the success of ERP implementation (Nwankpa, 2015). Snider et al. (2009) found that even gestures that managers grant to try to help the employees to learn to use the system have positive impact on performance even if the gesture itself proved to be inefficient. External help also matters, Snider et al. (2009) found in their study that the quality of the consultant directly influenced implementation success. Such effect is even more apparent in SMEs which do not have the same possibilities for obtaining IS knowledgeable employees in the company to assist in the implementation project, even in the case when there are competent people to execute the process, they are tied to their regular duty. It is also important to keep using the external support long enough to teach each employee the fundamental usage of the system in order to ensure that the most advanced employees cannot blackmail the company with their superior knowledge, and that there will not be a performance drop after the system is handed over entirely from consultants to regular employees (Hillman-Willis, Willis Brown and McMillan, 2001).

During the implementation phase there are many possible pitfalls for SMEs to fall to. Even ERP systems that are specifically designed for SMEs are complex enough to require consultancy, although they are described as easy to use (Koh, Gunasekaran & Cooper, 2009). Having existing knowledge of ERP system usage is a significant advantage during the
implementation phase and reduces the need for external consulting remarkably, although it
does not totally remove it (Koh et al. 2009; Zach et al. 2014). Having internal knowledge of
information systems is getting more common, even for SMEs (Zach et al, 2014).
Consequently, vendor experience is distinctively important to provide successful
implementation and since SMEs tend to operate with small budget, training sessions,
workshops and material that the vendor provides is especially important in the SME context
(Zach et al, 2014; Udaphyay & Dan, 2009). The implementation process is often accepted as
standard process offered by the vendor which also emphasizes the role of the experience of
the vendor (Zach et al, 2014). Self-learning through CDs and test database can be cost-
efficient way of learning to use the system, although it requires high acceptance of the
implementation and intrinsic motivation for learning to use the system (Koh et al, 2009).

2.2.3 Post-Implementation Stage
After the project-phase, Markus and Tanis (2000) introduce the shakedown phase and the
onward and upward phase that in this study are combined together into the post-
implementation phase. This phase starts when the implementation ends and the employees
start using the new system for their regular work. In the beginning of post-implementation
phase, time is spent on bug fixing, system performance tuning and re-training the staff and
preparing them to deal with temporary errors of the system. Once the system can be used
for regular business processes without constant problems, the activities shift to improving
the ongoing business processes by increasing the skills of the employees to use the system
and eventually resulting in the assessment of benefits. This is generally the phase when the
success of the system is realized and whether competitive advantage will be achieved through
the system implementation. Mistakes made in earlier phases are usually unfolded during this
phase, often leading to workarounds in practice. Key players during this phase are operational
managers, external support and end-users.

2.2.3.1 Knowledge-Sharing and Organizational Learning
Knowledge-sharing is found to be a crucial part of the post-implementation phase (Chou et
al. 2014a). This is supported by Galy and Sauceda (2014), who discovered that knowledge-
sharing across company departments does not only affect the user perceptions of ERP, but
causes changes in financial performance measurements. Moreover, the willingness to provide
knowledge-sharing, willingness to learn, as well as opportunity and capability of learning is
influenced by social capital (Chou et al. 2014b; Chou et al. 2014a). Chou et al. (2014b) discovered that knowledge-sharing may promote ERP usage in the informing functionalities of customer service, decision support and work integration as presented by Lorenzo (2001). Cereola et al. (2012) found that existing IT knowledge has a positive and significant impact on organizational performance after implementing the new system.

Knowledge is often divided into tacit and explicit knowledge, where tacit knowledge is difficult to pass by while explicit knowledge is easily transferred by words or documents (Yang & Wu, 2008). Both kinds of knowledge can be shared and management has ways to enhance knowledge-sharing inside the company, however, there are barriers for employees to share their knowledge. Because knowledge is scarce resource, having knowledge provides power and increases the value of the employee that holds the scarce knowledge, leading to a superior position in relation to the colleagues in the same company (Yang & Wu, 2008). Rationally a person would not free-willingly give up such a position but would try to maintain their benefits. On the other hand, if someone is not willing to share their knowledge regarding certain subjects, they are less prone to be given knowledge (Yang & Wu, 2008). In order to facilitate knowledge sharing, companies must create an environment where the payoff of knowledge-sharing is sufficiently high (Yang & Wu, 2008). Managers can, additionally, enhance knowledge-transfer inside the company by various actions. Different reward systems have been proven to be efficient motivators for knowledge-sharing behaviour (Wang & Hou, 2015; Hu & Randel, 2015; Cai, Li & Guan, 2016; Lam & Lambermont-Ford, 2008). Even though extrinsic rewards have been found to foster knowledge-sharing behaviour, intrinsic rewards are more efficient than extrinsic rewards (Wang & Hou, 2015; Lam & Lambermont-Ford, 2008). Lam and Lambermont-Ford (2008) even claim that usage of financial extrinsic rewards may crowd out intrinsic motivation through employees' diminished perception of autonomy. High intrinsic motivation and social capital enhances willingness to take part in the action of knowledge sharing also in ERP context (Chou et al. 2014a). Hu and Randel (2014) found a link between social capital and tacit knowledge sharing but not significant link between social capital and extrinsic knowledge sharing. The authors also found that rewarding mechanisms for explicit knowledge sharing also enhances tacit knowledge-sharing.

Managers’ behavior also affects the willingness to share knowledge. The more authentic the leaders are the more willing the employees are to share knowledge, while abusive leadership
diminishes the employees’ will to share knowledge (Kim, Kim & Yun, 2015; Edu-Valsania, Moriano & Molero, 2016). It is also important to enhance organizational commitment as it strengthens the incentives to share knowledge (Han, Chiang & Chang, 2014). Another important issue for learning to use ERP stems is self-efficacy. Chou et al. (2014a) found that employees who do not believe that they excel in using an ERP system are reluctant to share their knowledge with others. On the other hand, self-efficacy affects the willingness and capability of learning to use the ERP system (Chou et al., 2014b). This is because ERP systems are large and complex by nature which forces the employees to acquire new skills and knowledge, providing them with more challenges than with legacy systems (Chou et al., 2014b). Additionally, Yoon and Kayes (2016) found that self-efficacy promotes individual learning, suggesting that in order to boost individual learning, it is valuable to build self-efficacy and also team learning skills as they moderate the effect of self-efficacy. Elkhani, Solthani and Althal (2014) discovered that transformational managers support self-efficacy of ERP users, meaning that companies should emphasize the transformational leadership style when appointing the project leaders. This finding was supported by Shao, Feng and Hu (2017) who found that although both transactional and transformational leadership styles have mechanisms to promote self-efficacy among the end-users, the transformational leadership style was more efficient. The authors also found that exploitative learning is the dominant way of learning to use an ERP system and enhancing exploitative learning can be done by fostering organizational culture of psychological safety and participative decision-making. Furthermore, Ha and Anh (2014) found that top management has a role in training, communication and collaboration between departments facilitating knowledge-sharing inside the company.

2.2.3.2 External Support

External support refers to supporting channels that emerge from outside the company such as consultants and vendors. The impact of external support is slightly ambiguous. Pan, Nunes and Chao (2011) present lack of external support as a possible risk for a successful post-implementation phase. Galy and Saucedas (2014) support this by finding strong positive implications on having good relations to external support and changes in financial measurements. Zhu, Wang and Zhen (2010), however, did not find significant connection between external support and post-implementation success. They explained this result by the special features of their sample, such as studying retailer industry and the overall poor quality of Chinese information systems consultants. Consequently, it is very important to get high-
quality external support as their service quality remarkably, as well, affects information quality and system quality and consequently employee benefits of the system (Hsu, Yen & Chung, 2015; Ifinedo et al, 2010). Higher level of benefits for an employee using an ERP system will lead to higher gains for the company through adopting the system (Ifinedo et al. 2010; Pan et al. 2011). There are challenges, however, Abdinnouri and Saeed (2015) found that employees’ perception turned significantly more negative after transitioning to the post-implementation concerning the system’s value, timing and capability. As well, acceptance of the ERP system dropped remarkably among the managers. Hsu et al. (2015) argue that to get the best end-user satisfaction, managers should go further than the “just-enough” phase of external support to encourage the users to explore the functionalities of the system instead of just using the most basic tools to survive at work. Service quality of the external support and internal information system staff is a crucial part contributing to the user satisfaction and ultimately employee benefits from using the ERP system (Hsu et al., 2015).

### 2.2.4 Role of Top Management

The role of top management in the post-implementation phase has significant importance (Ha and Anh, 2014; Peng and Nunes, 2009; Yu, 2005). However, the means of top management support are incoherent. Galy and Sauceda (2014) found no significant connection between financial ratios and top management allocating time for the ERP project, and that long ERP project plans negatively affect earnings before interest and taxes. Elkhani et al. (2014), however, found that transformational leadership style promotes acceptance of the system among the end-users. Ram, Corkindale and Wu (2013) suggest that managers should define explicit targets and priorities to achieve successful post-implementation organizational performance. Typically, companies’ goal setting changes when moving from the implementation to the post-implementation phase; user needs, improving business processes and reporting gain importance in the post-implementation phase (Gallagher and Coleman, 2012).

### 2.2.5 SMEs

The size of the company affects ERP-system usage from pre-implementation to the very end. Benefits of using an ERP system in SMEs are ambiguous. Teittinen, Pellinen & Järvenpää (2013) found that the main benefit of implementing an ERP system is added transparency to control different units and obtaining a better tool for strategic control, suggesting that regarding Zuboff’s (1988) and Lorenzo’s (2001) division to automating and
informating functionalities, most benefits are found from informing side. Koh & Simpson (2005) also found evidence that the ERP system increased agility and responsiveness to change while providing a tool to affect the fundamental reasons for late deliveries.

To provide an environment beneficial for the intrinsic motivation of learning to use an EPR system, strong organizational culture is crucial (Zach et al., 2014). Implementing an ERP system does not alone provide stronger organizational culture and lack of it makes the implementation process much more difficult (Teittinen et al. 2013; Zach et al. 2014). Having a too inflexible system may weaken the internal acceptance of the system usage, while flexibility of the system is crucial to accommodate the future growth and the needs that growth might bring (Teittinen et al. 2013; Zach et al. 2014; Cereola et al., 2012). In regard to this, SMEs usually prefer customization of the ERP system over changing the organizational structure according to the requirements of the basic system (Zach et al., 2014), even though they might not have the resources to constantly facilitate and adapt the ERP system according to the company’s needs, leading to less optimal usage of the system (Teittinen et al., 2013). Cereola et al. (2012) found in their study that customizing the ERP system in accordance to the business processes of the SME improves system assimilation inside the company and consequently results in higher performance. Particularly important for achieving a strong organizational culture and acceptance of the change is the strong involvement of top management throughout the ERP system life cycle, which is a distinct feature specifically in the SME context (Zach et al., 2014). Taking into account internal opinions and including the future end-users of the ERP system into the decision-making group during system selection, is also a factor in providing good basis for acceptance of the implementation of the new system (Udaphyay & Dan, 2009).
3. Methodology

In this chapter the undertaken methodology is presented, including the reasoning for the choices made regarding scientific philosophy, scientific approach, and research strategy. Thereafter, the research method is presented, explaining how case companies were selected and how data was collected and analyzed. The chapter is concluded by considering and ensuring the quality criteria of the study.

3.1 Scientific Philosophy

3.1.1 Interpretivism

Research philosophy concerns the development and the nature of knowledge (Saunders, Lewis & Thornhill, 2012). According to Gray (2013), the two most influential philosophies are positivism and interpretivism. Positivists argue that reality exist externally to the researcher and thus the collection of data can only be obtained by observation of that reality (Gray, 2013; Saunders, Lewis & Thornhill, 2012). Positivists believe theoretical explanations can only derive from what can be empirically tested and confirmed as established truths and therefore seeks to make generalizations about its reality through objectively obtaining facts. Contrarily, interpretivism seeks to find subjective interpretations of our reality. Interpretivism distinguishes between our objective reality and our social reality and mean that our social reality is interpreted through the mind (Gray, 2013). Moreover, interpretivists argue that the researcher is not external to the social reality but rather included in it (Saunders, Lewis & Thornhill, 2012). Interpretivists view the world as socially constructed and therefore explore the subjective meanings of the complex social world through in-depth investigations (Saunders, Lewis & Thornhill, 2012). Interpretivism thus seek to explore the details of a social phenomena or actions of individuals rather than to establish generalized truths or laws (Saunders, Lewis & Thornhill, 2012; Gray, 2013).

As this study explores how SMEs improve their ERP system usage, an interpretive approach is found best suited. The study is interested in gaining in-depth insights on how companies improve or aim to improve their usage of the system in the post-implementation phase, which concerns exploring the strategies of the companies.
3.2 Scientific Approach

3.2.1 Inductive Approach

According to Bryman & Bell (2015) there are three different research approaches used to conduct business research, namely deductive, inductive and abductive reasoning. Deductive reasoning tends to follow a logical, sequential approach of developing theory and form an explanation and thereafter test it if it holds. Mantere & Ketokivi (2013) described the deductive approach as (1) theory, (2) explanation, and (3) observation, where theory deduces hypothesis (explanation) which drives the process of gathering data (observation); the observations are then matched with the hypothesis (explanation) to determine if it can be confirmed or rejected. Deduction therefore allows for prediction (Mantere & Ketokivi, 2013).

Contrastingly, inductive theory moves from the particular to the general. The inductive approach conjoins (3) observation and (2) explanation to derive (1) theory (Mantere & Ketokivi, 2013). An inductive approach tends to be used when the study is data-driven and a topic is explored while data is collected and analyzed to derive a theoretical explanation. The purpose is to better understand the nature of a problem (Saunders, Lewis & Thornhill, 2012). Opposed to testing a theoretical position, an inductive approach seeks to establish patterns, consistencies and meanings through the process of data (Gray, 2013; Saunders, Lewis & Thornhill, 2012). The outcome generated from the observations may involve constructs of generalizations, relationships and conceptualization of new theory (Gray, 2013; Bryman & Bell, 2015).

The abductive approach is an attempt to overcome the limitations of the aforementioned (Bryman & Bell, 2015). According to Mantere & Ketokivi (2013), the abductive approach is based on the premise that (1) theory and (3) observation comes first, the explanation (2) is then implied if it accounts for the observation in terms of the theory. Abduction is said to be an interpretation of the explanation. Alvesson & Kärreman (2007) described abductive reasoning, in terms of interpretive philosophy, as an approach which may help explain a mystery by making it less ambiguous and more understandable. The mystery is said to be a combination of the researcher’s preunderstanding of the theory and the empirical, and the interpretation can then resolve or contribute to the solution. Bryman & Bellman (2015) emphasized the continuous alternating between the researcher’s understanding and the data.
As this study is exploring a niche topic not rich in research and hence is not heavily based on previously established theory, an inductive-leaning approach has been chosen. By adopting an inductive-leaning approach, it does not rely on an existing theoretical position of previous research, yet theory is used to become knowledgeable about the topic and identify concepts within the literature to further explore (Saunders, Lewis & Thornhill, 2012). An exploratory study is a valuable mean to gain insights about a topic where the precise nature is ambiguous and calls for further clarification or understanding. An exploratory study includes asking open questions and has the advantage of being flexible and adaptable depending on where the data directs the study (Saunders, Lewis & Thornhill, 2012). This allows the study to be fully explored regarding how SMEs improve their ERP usage.

Furthermore, according to Saunders, Lewis & Thornhill (2012), the way the research question is formulated will guide the design of the research. Research questions that asks ‘what’, ‘where’, ‘who’, ‘when’ or ‘how’, which corresponds to the asked research question in this study, often imply a descriptive answer. This study initiates in an exploratory phase to identify how ERP usage is improved in SMEs and leads to a descriptive phase of strategies taken by the firms to achieve ERP usage improvement.

3.3 Research Strategy

3.3.1 Case Study

A suitable research strategy for a particular study depends on the nature of the study. The choice of method is conditioned by certain factors, such as how the research question of the study is formulated. Studies which aim to answer ‘how’ and ‘why’ stated research questions are said to benefit from using a case study research strategy (Yin, 2009). This corresponds to the asked research question of how companies improve their ERP system usage. According to Collins and Hussey (2014), case study research as a research strategy can adopted by both interpretivist and positivist studies. Case study research is often adopted to gain in-depth insights of a real-world phenomenon within its context (Yin, 2009). Yin (2009) stated that case study research typically is the advantageous choice of method if the events examined are contemporary and the researchers has limited or no control of the events. The events desired to be examined in this study concerns the need to study companies which researchers has no control over. Moreover, those companies are required to currently be in the post-
implementation phase of the ERP life cycle to be examined, which can be characterized as a contemporary event. It can then be motivated that a case study is a suitable choice.

When adopting a case study research strategy, a decision has to be made regarding the case design. A single case study design is often used if the case is considered critical or unusual in which the case on its own is unique enough to test a significant theory or can be tested in a longitudinal study. Contrarily, by using a multiple-case design you may have analytical advantages of contrasting situations or produce direct replication to stronger support your findings (Yin, 2009). According to Gray (2013), by taking on multiple cases, multiple observations can be made which establishes a certain degree of reliability rather than basing conclusions on one single case. For this study, a multiple-case design is preferred as it not only allows for within-case analysis, but also for contrasting the cases on how they improve their usage. An embedded, multiple-case study has thus been adopted for this study and is cross-sectional in that the cases are studied at a specific point in time.

3.4 Research Method and Design

3.4.1 Qualitative Method
When conducting research two methods of gathering data are commonly used, qualitative and quantitative research methods. Qualitative research methods conclude findings based on data which is collected to study meanings and relationships of and between participants. Qualitative data is thus mainly distinguished from quantitative data through which meanings are expressed through words rather than numbers (Saunders, Lewis & Thornhill, 2012). Given the inductive approach and the interpretative research philosophy, a qualitative data set is desired in order to understand the studied topic and answer the research question. Therefore, a qualitative method is chosen to collect the data. A multiple-case study is established by using the research method interviews. Interviews are conducted in a semi-structured manner which is described in further detail below.

3.4.2 Case Selection
Case companies are selected based on certain criterion in order to be found purposeful for this study. First, the companies have to fit the SME criterion for this study. The guideline by the European commission is used, which narrows down the options to companies with an employment ceiling of 250 employees and a turnover not exceeding €50 million. Second, the companies have to have implemented an ERP system at which phase the companies can be
regarded to be in the post-implementation phase of the ERP life-cycle. This is concluded to be when the ERP system have gone live. For companies to have a good overview of how they have improved their ERP usage, it is further significant that they have used the system long enough to be aware of the measured taken to improve the usage. Companies selected must have used their system for an extensive period of time. To narrow down the selection process, the e-commerce industry is chosen as e-commerce companies are known to be avid ERP system users. Due to convenience and consistency, only Swedish companies are considered in the case selection.

Search engines were used to find companies which fit the SME criteria and the industry selection. The companies were then reviewed through websites available of the companies to make sure the industry criteria were met. Companies were then approached by email to investigate if the respective company used an ERP system and in fact were considered to be in the post-implementation phase. The companies were given an introduction to the study and its purpose and are asked if they were willing to participate in the study. Emails were successfully sent out and delivered to 61 companies in which they were asked if they used an ERP system. In total, we got 14 respondents to the email. Out of the 14 responding companies, one company was currently implementing a system, one was in between systems, and three companies did not use an ERP system, all of which were thus ineligible to participate in the study. Six of the responding companies declined to participate due to various reasons. Three companies had implemented an ERP system and were able to participate in the study. Appointments were made with the available companies to conduct the interviews at their respective offices. The selected case companies are presented in Table 1 below, including details of the interviews.
### Table 2: Presentation of Case Companies

<table>
<thead>
<tr>
<th>Company</th>
<th>Number of Employees</th>
<th>Turnover (tSEK)</th>
<th>Industry</th>
<th>Choice of ERP system</th>
<th>Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company A</td>
<td>~100</td>
<td>69354</td>
<td>E-commerce, Retail, Grocery</td>
<td>Visma Business</td>
<td>2018-04-19 83 minutes</td>
</tr>
<tr>
<td>Company B</td>
<td>~40</td>
<td>55626</td>
<td>E-Commerce, Retail, Clothing</td>
<td>Pyramid</td>
<td>2018-04-24 69 minutes</td>
</tr>
<tr>
<td>Company C</td>
<td>~45</td>
<td>180000</td>
<td>E-commerce, Retail, Construction, Furniture</td>
<td>Jeeves</td>
<td>2018-04-26 79 minutes</td>
</tr>
</tbody>
</table>

**Company A**

Company A is an e-commerce business operating in the grocery subsection. The company is a sustainably-minded e-grocery which aims to reduce food waste by selling food online at a discount that otherwise may have been thrown out. The company has experienced fast growth and has quickly become around 100 employees where about 80 are working from their logistics center. The company’s markets are Sweden, Finland and Norway. The interview was conducted with the company’s CIO who has been a part of the company virtually from the start and therefore experienced their full ERP life cycle. The CIO manages the ERP system for the company and has consultancy experience from the time before joining the firm. Due to its fast growth, an ERP system has been necessary for managing their operations and is mainly used for clutter control and structure.

**Company B**

Company B is an e-commerce and retailer business which produces and sells their own kids clothing brand suitable for kids between 0 and 12 years old. The brand initially started around 13 years ago and have today ten physical stores in Sweden and an e-commerce which mostly sell to Swedish customers but also to the rest of the world. They further sell through resellers and distributors around the world, with a main focus in Europe. The company has around 40 employees where the majority work in the stores or at the company’s own warehouse. We interviewed the part-owner which primarily manages administrative, logistics and IT functions. The part-owner has been with the company since the start and therefore also has been a key player in their pre-implementation, implementation and post-implementation processes of their ERP system. The ERP system became the obvious solution for them as
they experienced growth and had a need for further integration and connectedness between processes.

**Company C**

Company C is a retailer and e-commerce business that sells products used in the construction and furniture industry. The company is almost a hundred years old with an old history and therefore also a strong reputation and customer base. Their customer base ranges from the individual craftsman to larger corporations. They are currently around 45 employees and have four locations, with headquarters, warehouse and store conjoined in one location, as well as two additional stores and another office. The interview was conducted with three key top managers in the firm, the CFO which also has CIO responsibilities, the CMO, and the head of logistics which shares the head of purchasing responsibilities with another employee. Although not part of the implementation group when the system was implemented, all are avid users of the system and have extensive knowledge of the post-implementation phase and the improvements made regarding the system usage.

### 3.4.3 Data Collection

Data collection is driven by the undertaken methodological approach (Bryman & Bell, 2015). Since this study is of qualitative and interpretive nature and has adopted a multiple-case study research method, a data collection technique suitable involve interviews. The primary data is thus collected through a single data collection technique, namely semi-structured interviews. Semi-structured interviews provide guidance to the interview but, in contrast to structured interviews, still allows for flexibility in order to obtain the most accurate and in-depth information (Bryman & Bell, 2015). Interviews are conducted with well-represented top management of the SMEs which have had an influence on the managerial decisions made regarding the ERP improvement and usage.

The interviews were conducted at the company’s respective offices and were all recorded and transcribed thereafter to analyze the data in a structured manner. The interview questions were inspired by the themes found in the frame of reference but broad in nature to capture a wide range of data due to the study’s inductive approach. The date and length of the interview can be viewed in Table 1 in the previous section. As anonymousness was requested
by some respondents in this study, a decision was made to conceal the identity of all interviewees as well as their represented companies.

### 3.4.4 Data Analysis

Different analytical techniques can be applied to analyze the data generated from a multiple-case study. These include pattern matching, explanation building, time-series analysis, logic models and cross-case synthesis. According to Yin (2009), a technique which is especially relevant for multiple-case studies that involve more than two cases is cross-case synthesis. The technique considers each case as an individual, separate study where findings can be collected across the series of cases through contrasting and comparison.

The data analysis is facilitated by grouping the data into categories or themes to determine similarities and contrasts. The analysis of the tables of collected and grouped data will thus heavily rely on the pattern recognition and interpretation of the researcher (Yin, 2009). It is important to note that in qualitative research it is believed that there are multiple viewpoints of a case in which establishing the best view is, beyond contention, not attainable (Stake, 1995). By further taking into consideration the inductive case research approach, the study therefore entails transparency of empirical generalizations. This calls for descriptive evaluation which is established on the basis of transparency of coding processes and generalization of data. Effective tools to adhere to this evaluation criteria are quotations and extracts to illustrate the collected data (Mantere & Ketokivi, 2013).

### 3.5 Quality Criteria

To ensure the quality of interpretative qualitative research, multiple standards of quality criteria have to be considered. Collis and Hussey (2014) bring forward certain criteria crucial for an interpretivist study.

*Credibility:* concerns whether the research has been properly conducted and achieved its intended purpose in terms of the studied subject. The measure can be strengthened through triangulation in which multiple sources are used (Collins & Hussey, 2014). Data triangulation has been used through a multiple-case study which was analyzed through cross-case analysis to ensure the credibility of the study.
Transferability: relates to the degree which findings are bound to the explicitly studied subject and whether the study can be emulated and generate similar results to allow for generalizations (Gray, 2013; Collis & Hussey, 2014). To ensure transferability, the interview guide (see Appendix) can be applied in future studies to grant the possibility to reproduce similar findings.

Dependability & Confirmability: centers on the degree of which the research process has been systematic, rigorous and well-documented and whether it is possible to determine if the findings is derived from the data (Collis & Hussey, 2014). To increase rigor, audit trails of the data can be utilized where the trail show the connection between findings and the data (Gray, 2013). Through sound recording and transcription of the case study interviews, as well as the conjoined, systematic coding of the cases for cross-analysis, a trail of the data has been established. Further, the interview guide (see Appendix) present how findings were produced from the data. Additionally, the research process has been well documented.
4. Data Presentation

This chapter compiles the data collected from the case companies through semi-constructed interviews. The data is summarized company by company and presented through direct quotes. Emphasis is put on their decision to implement an ERP system, the usage of external support, system’s effect on the organization, organizational changes to fit the system, as well as internal knowledge-sharing and organizational learning.

4.1 Company A

4.1.1 Decision of Implementing an ERP System

CIO of Company A states that the most important reason for them to implement the ERP system is better “clutter control”, ergo, clearer integration between departments. Company A is a fast-growing company with about 100 employees so they feel a need for standardized platforms.

“I think above all better clutter control, it’s getting more and more important. It’s even more important today. So we raise this question all the time. So it was vital for us to do the ERP project. Above all I think that having standardized platforms makes it possible to think in terms of processes. And that, I think, is what the ERP system has helped us with most.”.

Company A also notes that their aim with the system in addition to improve “clutter control” is to attain better reports, visibility, and enabling better analysis.

4.1.2 Usage of External Support

Company A uses two different external support channels. One for usage-related issues and one for system-related issues.

“So if it’s “I don’t log in at all” then it’s one number and if it’s “my invoice got lost, how do I proceed now” it’s another number. So we have two channels for support... Then it can be ‘it doesn’t work, I can’t distribute the products because X has happened and it should work’; then it’s a project issue. But it can be understood as ‘this should work’ so then you have to discuss a bit, ‘no it wasn’t meant to work like that, it’s a request for change issue’. If it’s a project or support, it can sometimes be a bit in the gray area. There the users can be of assistance.”
During the implementation all questions were dealt by the same consultants, whether they were usage-related or system-related. The division between usage- and system-related issues was made after the implementation project was finished.

“Support contract was made right after the project was finished. All support-related questions are handled by the consultants during the project because it’s important to...since procedures are not finalized, you need to know how it’s intended to work to be able to verify, ‘is this an error that we must handle in the project’ or is it like, ‘it was intended to be like that’.”

Even though the project has been in the post-implementation phase for years now, they are still using external consulting. Nowadays the consulting company takes care of the administration of the system. They also help with further adjustments and customization, especially concerning new reports and adjusting the user interface.

“Exactly [we still use them], so that [Consulting Company] executed the project and then we continued. So they do all the administration too, together with us. So we have the same [consulting] company for everything we do.”

“Continuous adjustments, above all new reports, adjusting the interface, access, tailoring”

The CIO states the reason for still using consulting is the significant fast growth they are experiencing. The relationship with the consultancy firm is also strong and they are pleased with the service and support received thus far. The finance department appear to have been affected as they have changed their perception of accounting practices by using the system.

“Because we grow so much, I think that we use [external] support a lot to... ‘would you be able to help me to see this, visualize this’ [or] you now have a question... ‘how much have we spent on X’ and such. It can be a specific dimension that we want to look at. There the support has helped us tremendously. So that’s how we use the support, especially the finance department which has looked at their accounting in a new way, new reports et cetera.”
4.1.3 System’s Effect on the Organization

As the internal processes have changed in Company A, and are taking longer to execute, it’s important to get the employees understand that the change is necessary.

“It’s a lot of putting things in order and streamline-forming processes. We used to have very simple processes so if you looked how long it would take to execute them, they surely take longer time today, but we also handle larger volumes and we experience errors more often. Better reports, better performance indicators, so it’s not only about how fast the processes are. It’s quite a lot of what our company focus on. It used to take two seconds, now it takes three. So it’s important to sell the change internally.”

They haven’t conducted any evaluation of the system, yet the CIO feels the underlying need for it. He perceives that, as a small company, they can’t afford putting resources into evaluating the system, especially considering that the system continuously changes all the time due to the company’s fast growth.

“Not like that. We should do it. But at the same time it changes so incredibly much all the time and we are such a lean organization so we have no resources to do what larger companies can. They have a person who really has time, we wish we had time and I wish we had more time but I balance between ERP system and our website and many other issues. It would have been nice to do such an evaluation but we haven’t done any [evaluation] of that kind.”

Company A grows in a remarkable speed by doubling the profits each year. The CIO doesn’t completely exclude the chance of attaining similar growth and results without an ERP system, but still views the system as a beneficial investment after all, due to easy access to information and standard and simultaneous way of handling the data. He doesn’t think that building your own system is an option for a non-IT company if it wants to grow to be a bigger company in the future.

“In theory it would surely had been possible. It’s the access to information that is key to be able to do continuous reporting and, of course, those the numbers may have been accessed in another way. But the ERP has made it visible how so many things are connected in a company. And it helps in identifying problems and as well as finding solutions. So, sure purely theoretically, but in practice I would say having an ERP is vital for a retail company. But of course, it would have been possible to solve these things in another way, too. You should be a big company if you start building solutions yourself. You should be an IT company to be able to
do that. Companies that are not an IT company should first and foremost use standard platforms and then, when you've truly proven that this is super special, then you perhaps can do something else."

Company A does not, however, consider the system when they think about organizational goals. Instead they are more focused on general goals that are not very related to the system.

“We handle it in different way. We are not so system focused when we talk about goals but our goals are sales goals, profitability goals and expansion goals.”

4.1.4 Organizational Changes to Fit the ERP System

Company A has restructured their working methods in order to have better fit with the ERP-system by relocating people and changing processes.

“We keep doing small changes, mostly around products. The warehouse procedures have been quite stable but especially in purchasing there are a lot of things that have changed in terms of product handling where we have staff in both at the warehouse and in at the headquarter. So we have done organizational [changes], for example if a publisher of products sits at the warehouse or at the headquarter, what step in the process you do, who is next in line and such things have changed a little bit. So resources have been delegated to different departments. It's also a bit connected to how we generally are organized. We are a startup and a few years ago we sold nothing and now we have about 190 million in turnover.”

The CIO doesn’t feel that the ERP-system would be restricting their growth or business operations in any way. He emphasizes that they are only doing certain things in the system and leaving out activities that require more flexibility and innovation. Constant adjusting of the system also helps them avoid inflexibility and losing innovativeness.

“No, we have an apparent [division]...We have our e-commerce platform, it’s where we meet our customers so that ERP doesn’t really set any limitations in what we can offer and not. In the end, it’s an order with products which shall be delivered with bottle deposit and shipping and discounts and all that kind of stuff...And I think that an ERP should be able to do orders, accounting, warehouse, like that's what should be included, somewhere around there. But everything else I think shall be handled outside [of the system]. Then I think that you sustain your innovative advantage, keep track of your numbers and keep up with the continuous changes. We change systems all the time, every year we have stopped something or taken out something or replaced something. It has been good for us.“
4.1.5 Internal Knowledge-Sharing

The CIO of Company A state that internal knowledge-sharing is a big part of their company as their organizational culture is start-up-like and interactive. The firm try to find a balance between maintaining structure while still allowing for exploration in order to improve the system.

“Yes, absolutely...It’s a little bit in our DNA that we are good at sharing knowledge. It’s perhaps what other companies usually have to work on to get the most out of employees’ expertise. At [our company] we more so have to try to maintain the orderliness since we are growing so fast”

Rather than arranging formal knowledge-sharing setups, knowledge-sharing occurs in everyday interactions.

“So we learn new things all the time. Not like that we have a workshop every friday. But, on the other hand, if I have learned something or the warehouse calls “[Name], as you are [the CIO]... what is the best way to find this information?”. Then maybe [answer] “I have come across this earlier “ “great, this is sort of new to me”. So it’s not organized learning, but we learn new things all the time.“

For Company A, it is important that everyone has a realistic understanding of their skills and their expertise. Employees continuously learn about how other departments use the system and how they can improve their usage.

“We work a lot on setting the right expectations. How much do you need to know about a process in order to change it, for example. So we learn, I think we learn every day like, ‘okay this is purchasing but this can also affect the warehouse’. I think that we are a learning organization in that sense. But absolutely, all organizations are unique in that way, what mix of people you have.”

Overall, the CIO explain that they have worked on creating an environment to promote internal knowledge-sharing. It is very much part of the organizational culture that is generated from being a start-up.
“[Such an environment] has existed from the start. We are a startup and as start-up, there are always a billion things to do and you bleed money and develop your business idea. So, you are constantly discussing and questioning all the time. So it’s a bit in our DNA to continually develop the business. It comes like from our founders who have established a culture which is very strong”

4.1.6 Organizational Learning

The CIO of Company A states that they have made efforts to get the employees behind the change by explaining why the system is important for the organization. These actions have increased the willingness to learn to use the system among the employees.

“When it’s a difficult project it’s very important to communicate why this is so important, why this is good for us in the long-term. And there the ambassadors become very important, so then we have a person in every department that gets to become this ambassador. So the first thing we did was to sell the idea to those people, ‘these are your responsibilities, these questions you can spend less time on and this is kind of the outcome that we are looking for’. So that the ambassadors were a very important part of the project. Because of them, we didn’t have any resistance but more of a proactive attitude for how we solve problems.”

Learning is also done through projects where they go through the system together, both with the vendor and internally. The CIO states that he also motivates during these projects, using the transformational leadership style.

“We do it partly through projects, where we find a solution to a new need, for example that we go through why the system looks like this and why we solve this problem in this way. So that we get educated all the time. We have continuous projects within the ERP-system so that both our vendors help us with it but also internally to gain understanding. So that, there I am motivating too to work on that case because it is a complex platform - you have to take it one step at a time. You can always learn something new”

The employees at Company A are very eager to learn to use the ERP-system in more efficient ways. Even to the point where it becomes harmful for the overall efficiency of the company.

“Sometimes [they] find activities for things that we are absolutely not allowed to do (laughs). So, [they are] very, very inventive and creative...We created this procedure to change article numbers and then after a month I think we had 1000 orders with diffs because the article number didn’t exist.”
4.2 Company B

4.2.1 Decision of Implementing an ERP System
Part-owner of Company B underlines the necessity of the ERP system, with its added integrations, and notes that it is easier to control different departments. Company B have used the system for a long time and have previously changed systems once before.

“Yes, well we had a growing business and more and more stores, and it felt fairly obvious that one would want everything to be connected in a better way so we searched for...an ERP system with an integrated cashier system, which also would manage our different types of customers, or our external customers as well, not only our own. “

He also sees the traceability and transparency as a beneficial factor with ERP-systems.

“You see what others are doing in a different way, so it’s easier to keep track. You can see what different people are doing and how far they’ve come with their tasks and so on”

Before the current system, the Company B used another, Spanish, system before realizing that it would not meet the needs of the business. Their new ERP system was tailored to the Swedish business environment and offered more functionality and integration.

“...We had a Spanish system for a while. You could say that it wasn't even adjusted for Swedish rules, the accounting part, but it was more of a cashier system for us as it didn’t hold up for much else. Purely considering accounting rules, it wasn't adjusted at all for Sweden so we switched pretty fast from that system. We had it for maybe a year or so before we switched”

4.2.2 Usage of External Support
The system that Company B is using is not available for purchase from the developers of the system. The company have also decided to continue to use their support moving forward.

“No, I mean the system, you don’t purchase it directly from the developer, you always buy it from a consultant and they get involved. You could run it on your own server of course too, but I think most have some sort of agreement, some service related agreement. We have decided to let them run it on their servers so we always have it there. “
After the implementation, the usage of external support has been reduced gradually, however, it is still utilized occasionally. There are certain issues they cannot handle on their own in which they consider the external support to be necessary.

“We hire them less and less because we know so much on our own now so I think we almost know more than them maybe, at least when it comes to certain things. But we have to get help from them sometimes, some parts we cannot do on our own. And some parts they are a lot better at. So I think it works fairly well.”

Nowadays Company B relies mostly on individual efforts with the system although the option for using external support is still there due to their service agreement.

“We can always ask the support about things for sure. So we have done that, especially in the beginning. But then again you have learned a lot from just interacting and fiddling with the system I would say.”

The part-owner did not express complete satisfaction with the service they got from the consultants. They would have appreciated more adaptation toward their organization.

“I guess they did what they’ve always done with many other customers. Perhaps they could have been a bit more perceptive towards the needs and wants we had. “

The company has therefore internally developed external solutions as workarounds to satisfy some of the needs which the system lacks to fulfill.

“...We can do everything we need and we have successfully fixed workarounds for those faulty parts that exists. But yes, happy but not fully happy.”

4.2.3 System’s Effect on the Organization

The part-owner is not completely happy with the system, but expresses that it is sufficient enough for their current operations but that it perhaps has not fulfilled their every expectation.

“Yes, in a satisfactory way...We are not fully satisfied, but neither dissatisfied.”
4.2.4 Organizational Changes to Fit the ERP System

The part-owner reports that he cannot recall any specific examples regarding intentional changes made to the working methods in the organization. Changes to fit the system happen unconsciously but he is aware that they have gone through some minor changes. He still provides a clever solution to the limited number of licenses they use for the system as licenses can be costly. Employees share their licenses in a way that happens to fit the organizational structure well.

“Yes…nothing consciously but I’m sure we have unconsciously made some changes since we are aware of how things work, but I can’t think of anything special that we’ve done. That would in that case be that we are so stingy that we haven’t increased the number of licenses although we have more users, but we share the licenses. But that’s because it works for us. It’s not that we have adjusted the working hours, but we happen to have working hours that fits well. For example, the finance girl, she always use her license when she’s here but she doesn’t work fulltime so when that license is available at certain times or on certain days, then someone else like me, who otherwise never use it more than to fix special things, can use it.”

He does not think, however, that they have done any major changes to existing organizational working methods to better fit the system, but that in some ways they feel restricted by the system.

“I actually don’t know there has been anything like that…if I can think of anything…There’s probably something, it should be I think. Nothing major, nothing that has affected the organization directly but, of course, we surely have had to settle for some solutions which we would’ve wanted differently, absolutely.”

He does not reckon that the system would restrict their future growth as it is. He does, however, acknowledge that it could restrict future growth if they were to change their strategy.

“It depends also on how we grow…if you for example get more resellers then it wouldn’t affect anything really more than you end up with more orders in the system and there we won’t really have any restrictions I guess but it would be more if we would change strategy in some way and start franchising or something and you would want to keep track of the stores, then I’m sure [the system] still probably could work but I think you would choose another system then that is a bit more user-friendly which didn’t have those limitations that we have and are aware of.”
4.2.5 Internal Knowledge-Sharing

The part-owner does not see any specific problems within knowledge-sharing internally, even though he reckons that there are always people who are not as willing to cooperate.

“I mean, we are 40 employees and not everyone’s the same. So, sure sometimes one can feel that they seem to discard the manual or discard trying to learn things they should know. That’s just how it is.”

They mainly motivate internal knowledge-sharing by assigning the end-users that are most capable with the system to write manuals.

“Then we assign those people to write manuals on the sections that they know very well.”

The internal knowledge-sharing in Company B happens mostly in an informal setting during one-on-one interactions instead of workshops or other organized events. Additionally, instead of utilizing the external support, they rely more on internal interaction and trial and error.

“We can always ask the support about things for sure. So we have done that, especially in the beginning. But then again a lot of learning has occurred from just interacting and fiddling with the system I would say.”

The Company B does not use much external support when assisting the end-users but rather relies on internal interaction and the aid of manuals. Top management tends to come in to assist as support during more advanced issues.

“We do internally. But it also depends on where, for example, if there’s a new employee in the store then it may be the store manager that teach them and show them where the manuals are. But I also do a fair amount as I handle some support when we experience issues with the system. So I teach as well, but maybe in later stages.”
4.2.6 Organizational Learning

Responsibility of learning to use the system is oriented towards individual-focused learning in Company B. Store managers are mostly responsible for motivating the employees to learn to use the system and learning usually happens individually by examining the manuals. Top-management’s role is solely to remind store managers to encourage the employees to read the manual.

“I don’t know how the store managers work but it’s their responsibility to make sure that people check the manuals but sometimes we try to remind them too, about the good manuals and other good-to-know things that we do. Right now, I’m trying to structure the manuals so they can be found at the same spot in every store so everyone knows where to find them, because it’s probably has been cases where a folder has been somewhere in the store and then they don’t know where to find it. So, we do those kinds of improvements perhaps. So they are easier to find, even if you are in a different store then you know that they are at the same place. Stuff like that.”

The part-owner stresses that every employee is different and that some are better at adapting to the individual focused learning environment than others.

“Pretty good, but as I said in the beginning, there are individuals that take in and learn better than others and that checks the manual and such. Some people ask the same questions again and again, some never call at all. That’s just how it is. But you have to work harder with those that find it difficult then, if you’d like. If it’s the right problem then of course you do [work harder to help] but it’s not that bad.”

They also have what can be labeled as a demo of the system which acts as a test environment for the end-users. This test environment allows for experimentation with new procedures and testing new functionality without causing harm to the actual system and promotes a better individual understanding of how the system works.

“We do that [test environment] if there’s a need for it. We’ve done it multiple times and you can do ‘trial and error’ in a test environment as a ‘test company’, that exist as a part of the installation, so you can go in and test procedures without ruining anything.”
4.3 Company C

4.3.1 Decision of Implementing an ERP System

Company C decided to implement a new ERP-system as their previous system was no longer supported due to the outdated software.

“I think the [old system] was discontinued. There was no support...It was very old so it wasn’t even Windows compatible.”

4.3.2 Usage of External Support

Company C is still very dependent of external support and especially of certain consultants. They highly value the personal connection they have with the consultants, who have been with them from the start, as they have gained a deep understanding of the company and its needs. They see this as a necessity to get the most out of the system for the organization.

“A strong dependency. And it’s person dependent, of that reason that if you’re going to be a good support consultant you need to know the organization. And that doesn’t just happen like that... you need to know what the organization is doing, how they work and how they think. Because it differs between companies, even if you’re doing the same thing, you do them in different ways. And I think that our consultants knows us very well, what our needs are and then it simply comes down to the personal level. It’s very dependent on the people, the support.”

The need for external support is most apparent in the finance department which has experienced changes in personnel. The support is, however, often used by a selective number of employees who then pass on the knowledge internally in the department. Self-learning is also practiced when they are trying to grasp a better understanding of the system.

“We are all new at the finance department so we learn new things all the time and we discuss with consultants for those things specific to finance as there’s no one in the office which can help us with those issues so then you have to learn it yourself and figure it out and then it’s my job to educate the others and get their knowledge levels heightened, too, so they don’t just sit and do one thing and we all have a pretty good overview of everything.”

External support is also used when there are more profound problems with the software since the company does not possess exceptional IT-expertise within the organization.
"It’s not a lot you can do. You try to find the cause. We don’t have our own IT department...so it’s more [the CFO] and [the CMO] that have to contact the support and ask if they can check if there’s any issue."

New changes and possibilities for improvement, when found, are then handed over to the external support who develop new functionality.

"On the other hand, we still make changes and find improvement possibilities in the system, so then we work more with those involved that discovered something and then we sit with our consultants so they can work on it..."

Sometimes improvements of the system are realized from accidental occurrences in the system. The CMO recalled a case of a free delivery problem in the software. She emphasizes that because the system may not always work as it is intended in regard to the company’s specific needs, it is crucial to have external support that have a deep understanding of the company’s needs to be able to provide the right solutions, and even offer the solutions to potential problems and modifications that the company might not even be aware of.

"We have a free delivery limit if you purchase for more than 4000. Earlier that occurred automatically but then if you removed an article and it summed up to 2000 instead, the free delivery option was still there, which was a mistake that led us to make a change so now instead you have to tick a check box to accept the free delivery each time so we don’t miss those things. So that’s an improvement we’ve made by initially doing something in the wrong way. But here we come back to how important the support consultants’ role is and that they are aware of what we need. Because we don’t know what the system can do. There’s so much functions that we could utilize. And it’s up to them to know what we can utilize and sale pitch those functions to us."

4.3.3 System’s Effect on the Organization

They express satisfaction towards the system when comparing it to their previous system, but realize that there are still room for improvements in term of ERP usage when comparing to other systems. Company C realize that the system usage is vital for success.
“I don’t have much to compare to. I only have [the old system] to compare to which I worked with before, and then I absolutely think so. If you compare to the earlier ERP system then this has for sure exceeded our expectations...So it was an upgrade for sure...I think it’s easy to just see all the issues, but you forget what you’ve actually have won...”

“...As you say, [the system] is a lot better now. We can’t really compare to how it was before, but if we compare to what we have seen in other places, we see that there are still improvements and adjustments that can be made, other customizations and such. And to use the system in the correct way.”

Using an ERP system is crucial for Company C to meet their business goals. It gives the top management better reports, and better traceability and oversight of everything, resulting in better managerial decisions.

“It hadn’t been possible without the ERP system. All reports and the oversight. ... So you don’t let a order through with too low margins as we say. You keep track of everything, just like you would report to the finance department. We can follow up and see ‘here we haven’t done so well this month’. It’s indispensable. We wouldn’t make it without it.”

According to Head of Logistics, there are still improvement that could be made to the system usage. The biggest boundary is the communication between the company and the external support as the company is not aware of the functionality they have not yet acquired of the system. New employees have had the opportunity to question procedures and suggest improvements which were believed not to be supported by the system, but when consultants were approached, it turned out to be possible.

“You ask ‘we have this certain need, is this possible to solve with [the system]?’: ‘Certainly’, they say. ‘Well, why haven’t you said that earlier?’. So you’ve been sitting there doing a lot of illogical things and then the function exist in the system, just that we haven’t paid for the access for that function. So we’ve had some examples of that...I have had ideas and questioned ‘why are we doing it this way and not this way?’: ‘No, but that’s not possible’, and then you ask the consultant which say ‘Yes, you can’. It’s just that it hasn’t been known that the need existed.”
The Head of Logistics emphasizes that modification and improvement of ERP system is a never-ending project and changing the system does not necessarily bring solutions to existing problems but might even create more issues. It is important to have a realistic mindset and not have the perception that changing the ERP system magically will fix everything.

“It’s a continuous project that you constantly have to work on. An ERP system change don’t just solve that. It probably would just create more issues. That’s perhaps what we thought that the old data in the old system would just disappear when you created a new [system], but that’s not the case. And that’s how it is with ERP systems, too. You very often overestimate the quality of your data.”

4.3.4 Organizational Changes to Fit the ERP System

The top management thinks that the system pairs well with their organization. They emphasize that it is more a matter of acquiring the knowledge to use the system efficiently.

“I think it matches. All functionality is extremely good, it’s just about knowing it. To do what bow it’s meant to be done, to do it the same way. More so than adding more functionality anyway, and utilize what we have in a correct way, and teach everyone.“

To keep the existing organizational structure, Company B adjusts the system, for example by restricting employees’ access in the system, although it is sometimes difficult. The company experience problems when people who do not have the sufficient expertise to do procedures which affects other departments than their own, yet have the access to do so. As it is not always possible to deny employees’ access to the parts of the system they should not be fiddling with, the top management needs to look after who does what and, if necessary, set procedures that have to be followed.

“To make sure that not everyone does everything. It’s another difficult thing with access control in the ERP system. What you should allow and how you should group it, roles, people, users. We have structured it in terms of roles, but we’ve ended up a bit in the wrong there because if you are going to work in sales you need every single role. If you work as a purchaser you also need every role to get the right access, although perhaps it’s not the best idea in every situation. And it’s here we now try to narrow the access because, as said, the knowledge level is low if you are in the system doing things you shouldn’t, which have consequences. ‘It looks okay when I do it’ or ‘Oh, it worked’, but it turns out to be a complete disaster for someone else. So it’s more
of overseeing who does what. If you notice that someone has access where they shouldn’t then you can’t always remove that access but then you have to draft a routine and let it be known that it’s now what applies.

The CFO of Company C admits that there have been adjustments made to working methods in order to use the system more efficiently. She gives an example of herself as a new employee where she had to change her working methods in order to fit better to the system, even though the system can be somewhat adjusted to the working methods by customizations.

*With an ERP system you work a certain way and you have to first and foremost follow that. Otherwise you have to build something new from scratch. But you have a foundation and then you can make improvements and adjustments and customizations. It’s like the changes I’ve made, because you use the system, but perhaps you can use it in a different way than you originally thought.*

Currently Company C is working with unifying procedures and routines to make everyone work the same way.

*“Now it’s more about returning to a state where we all do everything in the same way. Because now the system is fully working, the whole flow and such, but everyone need to follow the procedures that was produced and that’s more what it’s about now.”*

In order to get everyone working the same way, Company C have organized workshops and walkthroughs for the employees. According to the CMO, it is an ongoing process as small adjustments accumulate, resulting in differences in working methods in regards of the ERP system.

*“Sometimes we’ve concluded that we need to go through something again, because that’s what naturally happens when you work in a certain way and then you make small adjustments all the time and all of the sudden you work in a different way and then others may be doing things their way. So it’s highly important to have these walkthroughs and training sessions.”*

The CFO of the company also highlights the dangers of customization and upgrades. If the system is heavily customized then special care has to be taken when the software is upgraded.
or changed, so the customizations do not vanish and make the system different from what the employees have been used to and adjusted their working methods.

“It can end up being a bit dangerous eventually if you make a lot of customization that are specifically for us when you, for example, need to do an upgrade. Then you have to make sure those special customizations don’t disappear or something like that”

4.3.5 Internal Knowledge-Sharing

In Company C knowledge-sharing is very deep in the organizational culture.

“For sure. That’s what naturally happens, you realize that you have to help each other even if you are in different departments. “

Head of Logistics claims that the idea of strict department lines has changed in last decades into less rigid separations of the departments, allowing for better knowledge-sharing across departments.

“It’s probably about the functional organization versus the process organization. If you have one, you create the other...50 years ago...There was no processes straight through, the departments were closed and they didn’t communicate with each other...You can still have departments, that there’s a purchasing department and a finance department. But all instructions, the thought process are in terms of organizational processes. “

In Company C, learning how other employees use the ERP system, also across departments, has a big role in the knowledge-sharing.

“And we work a lot with learning each other’s processes. That’s a project that we focused a lot on during this past fall but something that we still do so you don’t just see your own [department].”

There has also been movement of personnel between departments, enhancing knowledge-sharing as different departments use different parts of the system, and thus have different expertise. When employees move to another department they bring their expertise with them, resulting in an overall better understanding of the system in the organization.
“We have a pretty good mix of many who have worked here for a very long time and now we are also a lot of newcomers. So if you look at those that have been here a long time, some of them may have worked in the warehouse before and work with purchasing now. So then some may have moved in between departments and then it kind of happens automatically that you help those in the department you were in before because ‘I know this stuff’. So then you get the process mindset a bit too, you get a whole different understanding for the entirety of the business.”

They hold regular meetings where, among other things, the ERP is discussed and where knowledge is being shared.

“There’s a lot of [interplay] at the meetings that we have in the morning because we discuss all questions, so everyone’s involved. Everyone knows what’s going on.”

The meetings also help the employees to connect with each other and to the right people who can help with solving the problems across departments. Additionally, they have an open working environment which enables knowledge-sharing in day-to-day operations as employees can assist each other.

“We sit very closely together all the time, and we have our meetings so there’s an engagement there and, as I said, everyone knows what’s going on and that makes it easier too to help each other if you hear someone having issues, then you can engage in that situation if you feel that you can provide any input…Everyone helps everyone.”

In the beginning of post-implementation employees were hesitant in taking the initiative of being the superuser, taking on more responsibilities concerning the system. According to the CMO, the employees were not resistant but lacked the self-efficacy for standing out.

“We do have certain employees who teach internally. But I think that in the beginning, I don’t know, spontaneously I was thinking that people were very hesitant, so no one really dared to take on that role (of the superuser), but I don’t know. There wasn’t any that was reluctant in that sense but…”

Although the organization originally had superusers, the use of superusers diminished as employees felt uncertain in the roles and became fed up with the title. Now everyone at the organization is instead around the same knowledge level.
In the beginning of the post-implementation, workshops were organized with the support consultant and the whole staff could study the system in different scenarios. Such workshops also encouraged the employees to discuss the system among each other and consequently share knowledge that way. It was perceived very successful and a good experience for the staff. There are plans to introduce workshops in the future when opportunity is given.

“I know that 1.5 years ago we ran workshops during a full day, went to the stores and brought the support consultant with, and then we did a fictive scenario with different customer orders... So we did those scenarios and all personnel was there so they got a refresh on the whole system with a lot of scenarios. It was very appreciated. This additionally opens up for discussion and we can learn from each other as well. So that we will definitely do again when we have time.”

4.3.6 Organizational Learning

The top management have not felt the need to encourage employees to study the system more profoundly. Instead, they have rather had to restrain the innovativeness of the personnel so the routines and procedures are followed. The need to return to the set routines has led them to consider the boundaries of access given to the employees to force people to perform relatively similar routines and procedures.

“They are very inventive. It’s rather that we try to make them go back and follow the routines and procedures that we’ve developed. I would say that the challenge is rather the opposite. Of course we are open to suggestions which result in improvements, but we can’t let everyone ‘go bananas’ and do whatever they want because that results in problems. And that’s a bit connected to how you give access in the system, what you are allowed and not allowed to do.”

Even though the top management is not always happy when the employees radically modifies their system usage to fit their own needs and going against the procedures of the company, the head of logistics admits that it has led to better usage of the system.

“Yes, the innovativeness of the personnel has led to better usage of system. Not that I have an example but that’s just how it works. That’s why it’s so difficult whether to hit the gas or hit the brakes when it comes to that.”
In company C, learning occurs in training sessions and by teaching each other. It is important to get an understanding of several issues in order to grasp a good usage of the system.

“To get good ERP usage you need to acquire knowledge of multiple things and that is training sessions and teaching each other and train new people that enter the workforce. “

The Head of Logistics emphasizes the importance of knowing the system well and how to use it instead of expecting everything to be given by the system.

“Because it’s our own level of competence which determines how good the outcome will be. It’s easy to sit here and blame the system when it’s our own knowledge levels that is the problem.”

Learning the different dimensions of the system is important because an employee’s modifications affect his colleagues’ work as well. The Head of Logistics stresses that sometimes it is necessary to change the working methods rather than adjusting the system to fit the existing way of working in order to achieve the highest possible overall quality of work for the company.

“You sit and make errors here, you’re not affected by that, but the next in line is. Then you have to obtain that level of understanding where you actually have to change the way you work, or you have to do things correctly, so it will be correct for your colleagues as well. So it’s about raising the quality of work, as well to realize those errors. Respect and an overall understanding of the whole process, and each other.”

Having a deep understanding of the system also makes it possible to solve small issues independently. Head of Logistics claims that when there is a high level of knowledge of the ERP system it will give a more positive perception of the system.

“It’s very much related to our own knowledge level in general. The more we know about the system and how it works and how we should work, the easier it is to correct those small errors that come in. And if you can correct those quickly, then you don’t perceive it to be such a big issue...That’s what I’ve noticed that if everyone knows a lot about the system, then you perceive it to flow incredibly well. You can solve the issues on your own.”
This chapter concludes the analysis of the data from the case companies. Here, cross-analysis is applied. Focus is emphasized on post-implementation in regard to knowledge-sharing and organizational learning, external support, and organizational changes and system impact.

### Table 2: Summary of Data Presentation

<table>
<thead>
<tr>
<th>Case</th>
<th>System</th>
<th>Top Management Role</th>
<th>Knowledge Sharing</th>
<th>External Support</th>
<th>Organizational Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Visma Business</td>
<td>Top management uses transformational leadership style to make employees to believe in the change the ERP system brings. Certain employees work as ambassadors of the system and are trusted with many responsibilities regarding the system.</td>
<td>Startup attitude facilitates knowledge-sharing. Interaction between warehouse and top management is strong while organizational structure has been changed in order to enhance knowledge-sharing inside the company</td>
<td>Still uses two channels of external support. End-users have direct access to the other channel which supports with usage-related issues. Very dependent of the external support</td>
<td>Relocated an employee from headquarters to the warehouse to match the interaction between departments better. Redelegating resources between department to pair with the system better</td>
</tr>
<tr>
<td>B</td>
<td>Pyramid</td>
<td>Store managers have the responsibility of educating new people and top management works only as a support channel if issues cannot be solved through manuals. The top management does not remarkably participate in motivation of the end-users to learn the system.</td>
<td>There is not significant levels of knowledge-sharing across departments. Most of interaction is between store managers and top management. Top management has not used much effort to boost knowledge sharing</td>
<td>Still uses external support for modifications of the system but not as much for usage related questions. Employees do not have direct access to external support</td>
<td>No major changes to the organization. Some unconscious changes but no major intentional changes in the organizational structure</td>
</tr>
<tr>
<td>C</td>
<td>Jeeves</td>
<td>Top management makes efforts to facilitate opportunities for employees to learn the system and solve usage-related issues.</td>
<td>Top management does remarkable efforts to facilitate knowledge-sharing. They organize regular meetings to discuss ERP system across departments and workshops for unification of procedures. Organizational culture encourages to knowledge-sharing</td>
<td>Still uses external support for modifications of the system but not as much for usage related questions. Also organizes workshops in cooperation with the external support. Dependant on the external support</td>
<td>No major changes to the organization. Prefers to modify the system rather than change organizational structures when they are contradicting. System pairs well with the existing organizational structure</td>
</tr>
</tbody>
</table>
5.1 Post-Implementation

5.1.1 Knowledge-Sharing and Organizational Learning

Knowledge-sharing during the post-implementation phase is crucial for improving the ERP system usage and ultimately financial performance (Chou et al., 2014a; Galy & Sauceda, 2014). In each company, the top management was pleased with the situation of knowledge-sharing, although the companies practiced knowledge-sharing in different manners. In all cases, they were positive that internal knowledge-sharing had improved their system usage and helped them gain a better understanding of the system. Company A and Company C used both formal and informal ways of knowledge-sharing whereas Company B relied mainly on informal one-on-one interactions and indirect manual-based knowledge-sharing during the post-implementation. The top management of Companies A and C were visibly more satisfied with the knowledge-sharing culture in the organization than Company B.

High intrinsic motivation enhances willingness to share knowledge and managers can try to boost intrinsic motivation through different reward systems (proposed by e.g. Chou et al., 2014; Wang & Hou, 2015; Hu & Randel, 2014; Lam & Lambermont-Ford, 2008). In none of the companies any extrinsic reward system or rewarding strategy was used. Instead, particularly in Company A and C, intrinsic motivation was a priority and that was increased by transformational leadership style methods. Company C also acknowledged that the organizational culture encouraged the employees to be passionate about learning to use the ERP-system. Additionally, they enhanced motivation by putting remarkable efforts to help the employees to use the system by organizing workshops and meetings where the ERP system was discussed. Contrastingly, Company B delegated most of the motivating to store managers while the top management did not use many mechanisms to enhance intrinsic motivation to learn to use the ERP-systems, yet the top management trusted that the employees were motivated enough to put individual efforts for using the system. Consequently, Company B experienced much more variance in motivation of employees than Company A and C.

None of the companies experienced barriers of knowledge sharing by employees who were especially knowledgeable of the system. Yang and Wu (2008) argued that such resistance of knowledge-sharing could occur if certain people were more knowledgeable in the system usage than others, consequently increasing their value in the organization. Company A and
C claimed to not have any problems with knowledge-sharing and Company B only experienced problems with motivating certain people to learn the system by using the manuals. The reason for not having uncooperative knowledgeable users of the system may be that all of the companies are still using external support for solving issues within the system, and that the knowledge is rather spread out in the organizations. Only Company A used certain employees to be more responsible for the issues and questions regarding the system. Company B never had employees that had such responsibilities and Company C ceased to use superusers after the implementation. Additionally, Company A was the only company where the employees had open access to external support channels, preventing any employees to attain a position where they would be irreplaceable due to their knowledge about the system. Company B, on the other hand, used their employees, who were the most knowledgeable about the system, to write manuals that were ultimately handed to everyone else to use, reducing possible loss of information in case such an employee would leave the company.

Self-efficacy of the employees is important when considering organizational learning of using ERP-systems (proposed by e.g. Chou et al. 2014a; Chou et al. 2014b; Yoon and Kayes, 2016). Companies A promoted self-efficacy by organizing projects where they go through how to solve problems and by having the external support at hand. Company B, on the other hand, only promoted self-efficacy through the test environment that they sometimes used when there was an apparent need. Otherwise, at Company B, promoting self-efficacy was thin, relying only on that the users study manuals by themselves. Consequently, Company B experienced issues when some employees were not eager enough to study the manuals and gain good knowledge of the system. Company C experienced significantly rising levels of self-efficacy. They have made efforts to increase the levels of self-efficacy by organizing workshops and meetings where the employees can improve their skills regarding the system usage. Company C and A also had a noticeably encouraging organizational culture for organizational learning. Both companies experienced considerable amounts of self-efficacy, hinting that the kind of people they hire precedingly have high self-efficacy. The end-users in Company A and C were even so eager to change the procedures for parts that they were not the primary users of that the access needed to be restricted, as well as reintroducing unified procedures. This suggests that in the division of system functionalities proposed by Zuboff (1988) and Lorenzo (2001), companies may have more problems with the automating part of the functionalities of an ERP system during the post-implementation phase in cases.
where the informating functionalities are thoroughly learned. It further suggests that Hsu et al. (2015) findings where the best end-user satisfactions are reached through exploring the system are not indefinitely beneficial for the organization itself. In Company B, the part-owner was struggling with employees not being motivated enough to study the manuals and contacted the top management about relatively simple problems. The transformational leadership style is also notably apparent in Company A and C, although the top management of B also used some features of the transformational leadership style. All of the companies use exploitative learning, Additionally, Company B used explorative learning through the test-environment where the end-users could experiment with different ways of using the system. Company A and C used exploitative learning by arranging regular interactions between departments by organizing workshops, ERP projects and meetings where ERP usage was discussed. They also possess strong organizational culture of participative decision making. In Company A, the end-users were included in the selection process of the software, and in Company C, the employees had an impact on the decision process of adding new modifications during the regular meetings. These results support Shao et al. (2017) findings in the SME environment. There were significant differences among the case companies in levels of interaction between departments. Companies A and C had substantially more interaction than Company B, mainly because of conscious efforts by top management to facilitate such interaction between departments. This evidence supports Ha and Anh (2014): top management has a role even in SMEs in accommodating knowledge-sharing inside the company by organizing meetings, workshops and facilitating interaction.
5.1.2 External Support

Pan et al. (2011) and Galy and Sauceda (2014) both suggested that external support is vital for a successful post-implementation phase and that having an overall good relationship would have positive implications. Company A had two channels of support, one for system-related issues and one for usage-related issues in the post-implementation phase, while Company B and C only utilized one universal support channel. In Company C, employees had a direct line to both support channels which enable employees to get assistance for their individual issues. Contrarily, if Company B or C required external support, it usually went through the top management.

Company A declared that the external consulting is a crucial support channel due to the company's fast growth which cause the system to continuously change. Company A were satisfied with the service provided by their support channels and considered both relationships to be in good standing. Likewise, Company C was strongly dependent on their external support and value the consultants’ in-depth knowledge which have been attained by working closely with the company to tailor the system to fit their needs. The finance department utilized their services the most in day-to-day situations as the consultants’ competence was required due to the expertise not being accessible in-house. The consultants were further used for continuous customizations and adjustments, comparable to Company A. Contrastingly, Company B conveyed that they use external channels less and less as they internally have accumulated the knowledge necessary to handle most issues on their own. They still utilize their service for certain issues which they are unable to solve internally and for minor improvements, but mostly rely on internal assistance for support issues. Internal assistance can be observed in all companies. Company B still expressed a certain satisfaction concerning the service received but stressed that the external support could be have been more attentive to their needs and wants, something which were not expressed in the other companies. Company B has managed to overcome the limitations of their ERP system by internally developing workarounds needed for their operations. Thus, it does appear that a good relation with external support has positive implications for the organization as suggested by previous research. However, while success is hard to define, it can be observed that all companies, needless of perceived relation to their external support, are currently in the post-implementation phase of the life cycle and do not indicate to struggle enough to have plans to change system. It is therefore hard to determine how vital the external support
is to perceived success in the post-implementation, however, the external support appears to have positive implications.

Hsu et al. (2015) and Ifinedo et al. (2010) claimed that high quality support affected the information and system quality and in turn the employee benefits of the system. This is supported by Company A and Company C which expressed higher satisfaction in their external support and overall information and system quality, contrasting Company B. This may be due to the stronger personal connection to their external support which enabled tailored solutions to fit their specific needs, unlike Company B which perceived to have been treated in a likely similar manner to many companies before them. Overall, the empirical findings do indicate that SMEs are heavily dependent on the external support if continuous adjustments and customization are made to the system.

5.1.3 Organizational Changes and System Impact

All the companies aimed for increased integration and control of different departments, as well as traceability and transparency when they opted to implement an ERP system. They all seek benefits from both the automating and informing functionalities of the system (as suggested by Zuboff, 1998 and Lorenzo, 2001). These remarks support the arguments of Teittinen et al. (2013) and Koh and Simpson (2005) that the main benefits are added transparency and responsiveness to change.

In all cases, regular modifications are made to the existing systems rather than radically changing their working methods and organizational structure to fit the system. This is in line with Zach et al. (2014) argument that SMEs often prefer heavy customization of the system to facilitate their needs. On the other hand, our findings are against Teittinen et al. (2014) claims that SMEs do not have enough resources to facilitate the modifications resulting in less optimal usage of the system. Additionally, all of the companies used workarounds through external systems outside of ERP in order to optimize the usage of the systems. This finding is contradictory to Koh and Simpson (2005) arguments that ERP would increase agility.
6. Discussion and Conclusion

This last chapter discuss the findings in regard to ERP usage improvement in SME. The study is then concluded by summarizing the findings and its contributions, both to theory and practice. We conclude the study by stating the limitations of the paper, as well as discuss future implications.

6.1 Discussion

This study aimed to explore how SMEs improve their ERP usage in the post-implementation phases of the ERP life cycle. Previously, finalizing the implementation has been viewed as the ultimate goal, yet improvements of ERP system usage is not limited to the implementation phases (Scott & Vessely, 2000). Markus and Tanis (2000) argued that it is in the post-implementation phases when attention is put towards improving the system in regard to the system itself as well as the system usage. As the ERP systems have become more affordable to SMEs (Cereola et al., 2012), SMEs have become a subject of interest in the ERP research.

Utilizing allocation to automating and informing functionalities developed by Zuboff (1998) and Lorenzo (2001), we found evidence of that SMEs improve their ERP usage during post-implementation phase in regard to both automating and informing functionalities. However, our results suggested that these two functionalities are improved by using partly different methods. ERP usage, in accordance to informing functionalities, are improved during post-implementation by using manuals, projects and internal knowledge-sharing. We also discovered that external support can be used in the improvement of usage of both informing and automating functionalities effectively. ERP usage, regarding automating functions, is improved by access restrictions, workshops and projects which aim to establish a unified method of working inside the system, as well as knowledge-sharing which inform how one’s actions affect other employees’ usage of the system.

Organizational learning can be considered to the main factor of improving ERP usage, in accordance to informative functionalities of the ERP system. Both exploitative and explorative learning was observed, although exploitative learning was extensively utilized to improve system usage through meetings and day-to-day interactions between the users. Shao et al. (2017) found that having a strong organizational culture of participative decision making
and psychological safety promoted organizational learning which also is observed in this study.

Our study also supports that self-efficacy of employees is a vital component to organizational learning, as proposed by authors such as Yoon and Kayes (2016) and Chou et al. (2014a), and that by promoting self-efficacy, employees were more attentive to improving their system usage skills. Our study suggests that self-efficacy was promoted through projects, workshops and meetings where they could discuss and solve problems as well as improve their skills. It appeared that when the organization lacks promoting self-efficacy, employees were less eager to gain knowledge of how to use the system. Increasing the self-efficacy in employees therefore seem crucial for them to feel comfortable using the system and thereof increase their system usage knowledge. Unexplored in earlier research, our results suggest that having high self-efficacy may however cause harm if the high self-efficacy does not relate to deep knowledge of the system. It was observed that if users had the self-efficacy to change procedures but did not acquire enough knowledge to understand the effect of those changes for other users in the system, the access in the system had to be restricted due to the potential harm towards the other users. These findings suggest that too imbalanced focus on improving system usage of informating functionalities may deteriorate the usage from the perspective of automating functionalities.

As Chou et al. (2014a) and Galy & Saucedo (2014) claimed, knowledge-sharing is vital for improving the ERP system usage. In this study we found that knowledge-sharing is crucial for improving usage of both automating and informating functionalities of the ERP system. When the organization promoted knowledge-sharing, a deeper understanding of the system was gained of both how the information can be put in the system more efficiently and how other users use the system, giving further understanding of how an individual's actions in the system affect other users. Both formal and informal ways of sharing knowledge were used, but it appeared that when they were used together, the knowledge-sharing was the most efficient. Even though usage of both extrinsic and intrinsic reward system has been proven to enhance knowledge-sharing (Wang & Hou, 2015; Hu & Randel, 2015; Cai et al., 2016; Lam & Lambermont-Ford, 2008), extrinsic reward system strategies were not used at all while organizations used intrinsic motivation to enhance the knowledge-sharing. When intrinsic motivation was not used by the top management, the organization had noticeably more variance in the motivation of employees to learn to use the system. Furthermore, we
did not find any evidence of resistance of knowledge-sharing from the most knowledgeable employees in order to protect their value of having better knowledge than other employees as presented in Yang & Wu (2008). It was hinted that these issues can be dealt with by long-term usage of external support and by ensuring that knowledge is spread out in the organization during implementation and post-implementation phases. A strong organizational culture which promotes cooperation may, as well, impact this, or the fact that SMEs are smaller in size and therefore employees may have closer relations with each other and therefore want to share their knowledge. It was also observed that if an employee was particularly knowledgeable, they were assigned to share their knowledge to others by the organization, which would reduce this barrier. Overall, our results suggested that top management has an important role in accommodating the knowledge-sharing inside the organization. Yet, it appeared that creating an organization culture which promotes knowledge-sharing had the most significant influence.

Even though our findings suggest that external support is decreasingly used for usage-related matters during post-implementation, focusing more on system-related matters, it appears that SMEs still do use external support for improving the usage of both automating and informing functions of the ERP system. This study hints that regular usage of external support provides deeper understanding of how to use the system and consequently improving system usage. It appears that SMEs use workshops and projects to improve the usage of automating functionalities while external support can also be used as a method to improve usage of informing functionalities of the system through written manuals or other interaction.

This study concerns the usage improvement in regard to automating and informing functionalities of an ERP system (Zuboff, 1998; Lorenzo, 2001). Our results suggest that when the employees have high self-efficacy in informing functionalities, there may be need for the organization to focus on forcing automating functionalities into use. Our studies also suggest that both informing and automating functionalities are important when small and medium sized enterprises consider implementing an ERP system and thus play a major role in improving the system usage in the post-implementation phase. These relations have never been studied before and need further elaboration in future studies.
6.2 Conclusion

This study aimed to explore the strategies that small and medium sized enterprises use to improve their ERP system usage during the post-implementation phase of the ERP system lifecycle. The data was collected and analyzed through case study consisting of three cases of separate enterprises using qualitative research methods. This study revealed interesting results on how small and medium sized enterprises further improve the usage of their ERP system after the implementation phase and what are the main topics they deal with when considering improvement needs. The existing literature on the field provided basis for understanding the nature of post-implementation phase of ERP system lifecycle shedding light on potential issues that need improvement during the post-implementation phase.

The results of the study showed that SMEs improve their ERP usage during post-implementation in two ways; through improving the usage of automating and informing functionalities of the system. Consequently, improving usage of informing functionalities can be done by enhancing organizational learning through usage of external support by training events, support channels, or written manuals and by strengthening internal knowledge-sharing. Likewise improving usage of automating functionalities can be done by organizing workshops and projects where unified procedures are taught, access restrictions and also by enhancing knowledge-sharing. An important factor in both strengthening
organizational learning and unifying procedures is building up knowledge-sharing, appearing to be the main mediator of overall usage improvement with ERP systems in SMEs.

6.3 Contributions

Contributions to research:
Previous research has explored which factors affect the organizational performance during post-implementation and which factors affect end-user perceptions about the ERP system (Huang & Yasouda, 2016). This study adds to the post-implementation research by explaining how SMEs enhance knowledge-sharing and organizational learning in the context of ERP system usage improvement, through changing organizational structure and by arranging opportunities for the knowledge-sharing and organizational learning to occur. Possibly for the first time in research, this paper investigates the relation of improving the usage between informing and automating functionalities.

Contributions to practice:
This study brings new understanding about the relation between improving usage of informing and automating functionalities and the contradictory effects they might have. This study sheds the light on how unbalanced focusing on improving the usage of informing functionalities of the ERP system may have disadvantageous effects on the usage of automating functionalities, increasing the importance of understanding what part of the usage should be the priority of improvement. Therefore, this study brings contributions to top management of SMEs when planning strategies to improve the ERP system usage during post-implementation phase.

6.4 Limitations and Future Research

This study includes limitations that are caused by the nature of the study. In addition to the general limitations of a qualitative, semi-structured interview-based academic paper, within a less developed research field, the respondents’ biases towards interpretation of ERP usage in the companies that they ultimately represent present a further limitation to this paper. The findings of this paper are in need of further establishment in the theories in future studies.

The ERP system usage in SMEs and improvement methods as well as knowledge-sharing enhancing strategies are understood through authors’ prior experience and knowledge about the subject and bias caused by literature selection. Due to the interpretive nature of this study,
authors’ subjective interpretation of the data can be seen as a limitation as it cannot be explicitly reproduced. The qualitative method of this study also restricts the possibility to make generalizations of the result, and three cases may be considered as too few in order to be able to significantly confirm the arguments presented in this study. The limitations of the nature of a bachelor thesis also restrict the possibility to thoroughly investigate the underlying factors and reasons which affect the methods to improve ERP system usage during the post-implementation phase. Additionally, this study reflects the top management perspective, and although avid users of the system, it is not the one of sole end-users which may perceive the usage improvement differently.

The future research in the field of ERP system post-implementation phase should quantitatively test the relation between the usage improvement of informing and automating functionalities. Another subject to study is to test the arguments stated in this study through quantitative research with significant number of respondents. Moreover, focus can be attained towards how large enterprises deal with the usage improvement during post-implementation and contrast the results against SMEs. Another topic which has been found undiscovered is the overall study of ERP system usage through its whole lifecycle from implementation to retirement.
References


individual level: Revisiting the role of service quality. *Information & Management, 52*(8), 925-942.


Kimberling (2017) 2017 Report on ERP Systems & Enterprise Software. Retrieved 12 Feb 2018, from http://go.panorama-consulting.com/rs/603-UjX-107/images/2017-ERP-Report.pdf?mk_t_vok=eyJpIjoiT1dSaE5EazJaRGxsTm1VMCIsInQiOiJ6YVZqXC9wUDVIWlMljBkArZrU1Ns0NoeFNnNFVwcXlXeEZ1bnpME9RSG14WWxSR0s0VE0zOWpCQ0lQRkJcCthXc90QiBYWlBuaFvvK3MyYXZUaj6aHVOaXjkRWE5RFQ1RXhB K2ZZYzdHYmtCVHpYZE5PSWlzY0dwYzdplVZslt9


Appendix

Appendix 1: Interview guide, English

Before the Interview

- Ask the interviewee for permission to record the interview. Explain that the information that the interviewee share with us today can at their request be processed anonymously and that if so the organization and their name will be anonymized.

- Introduce the study and its purpose:
  "An implementation of an ERP system is said to consist of three stages: pre-implementation, implementation and post-implementation. ERP systems are a well-studied subject when it comes to the implementation stage, but how do organizations improve the usage of the system after the implementation? In the literature it’s said that it’s important to continuously improve the usage of the system to derive the most value out of the system for the organization. This is the foundation for this study.

About the company

1. Briefly give an introduction to your company.

2. How many employees do you currently have?

3. Briefly introduce yourself and the position you have at the company.

4. Describe your organizational structure and our organizational culture.

5. What ERP system do you use?

6. What modules do you use in the the system? (e.g. purchasing, warehouse, orders, finance, HR, sales and marketing)

7. What other ERP system are you aware of?

Pre-Implementation

- Why did you choose to obtain an ERP system?

- Did you involve employees in the selection process of the system?

- Who made the decision of choosing the system?

- What were the main features you considered when you chose the system?

- How would you describe the selection process?
Were there employees who had previous knowledge of ERP system before the implementation?

Are there any employees who are regarded as experts or are responsible for the system?

**Implementation**

Did you perceive there to be any resistance from employees when adopting the system?

What kind of help did you get from the vendor during the implementation? Where you happy with it?

How would you describe your relation to the ERP vendor?

Did you customize the system for your organization when you implemented it?

What kind of challenges did you face during the implementation? How did you overcome these challenges?

How long did it take for everyone to be able to routinely use the system?

How would you describe your involvement in the implementation process?

**Post-Implementation**

Have the employees been willing to participate in knowledge-sharing of how to use the system?

What kind of actions have you taken to enhance knowledge-sharing inside the company of how to use the system?

What efforts have you made to enhance the knowledge of the system?

Have you made any changes in the organization to better fit the system?

How have technical issues affected the organization and the end-users of the system?

  - What efforts have you made to improve the situation?

Have the organization experienced frustration because of the system or technical issues?

Have you used any external support after the implementation of the system? If so, what kind of external support and what role did they have?

  - How long have you used the external support?
Do you perceive the external support to have been useful to the organization?

If you have not used any external support, in hindsight, do you think it would have been good for you to use external support?

How successful to you perceive that the ERP system have been for you? Have you measured the success in any way?

What kind of challenges or problems have you faced after you implemented the system?

**Improvement and Usage**

What decisions have you made concerning improvements of the system from the point you implemented the system to present day?

Have you made any system upgrades or other improvements of the system?

What actions have you taken to improve or optimize the usage of the system (without changing the system)?

To make internal processes more efficient?

To better meet business goals?

Do you perceive that the ERP system have benefitted you as an organization? If so, in what ways?

How well to you perceive the ERP system to match the organization?

How well do you perceive the ERP system to coordinate with your business goals?

What efforts have you made to better align the system with your organization or vice versa?

To increase turnover or in terms of any other KPI?

To better meet business goals?

How pleased are you in your choice of ERP system and have the system exceeded your expectations?

Have the system accomplished what it was it was intended for?
Appendix 2: Interview guide, Swedish (Original)

Innan intervjun

- Fråga den deltagande om intervjun får lov att spelas in. Förklara att informationen som denne delar med sig av idag kommer att behandlas anonymt och att företaget och deras namn kommer att fingersas.

- Introducera studien och dess syfte:
  "En implementation av ERP system (affärssystem) sägs bestå av tre olika steg: förimplementation, implementation och efterimplementation. ERP system är ett välstuderat ämne när det kommer till implementationssteget, men hur förbättrar företag användningen av systemet efter implementationen? I litteraturen sägs det vara viktigt att kontinuerligt förbättra användningen av systemet för att få ut det mesta av systemet för organisationen. Detta är grunden till vår studie.

Om företaget

8. Berätta kort om eft företag.

9. Hur många anställda har ni?


11. Beskriv er organisationsstruktur och kultur inom organisationen.

12. Vilket ERP system använder ni?

13. Vad för moduler är integrerade i systemet? (Ex. inköp, lager, order, ekonomi, HR, sälj & marknad)

14. Vilka andra ERP system har ni vetskap om?

Förimplementation

- Varför valde ni att implementera ett ERP system?

- Vilka anställda var involverade i val av system?

- Vem tog beslutet i val av system?

- Vilka huvudfunktioner var viktiga för er när ni valde system?

- Hur skulle ni beskriva valprocessen av system?

- Fanns det anställda som hade vetskap om ERP system sedan tidigare innan ni implementerade systemet?

- Har ni någon anställd som är "expert"/ansvarig för ERP systemet?
Implementation

- Upplevde ni någon resistans från anställda när ni införde systemet?
- Vad för hjälp/support fick ni från ERP leverantören? Var ni nöjda med den service ni fick?
- Hur skulle du beskriva er relation med ERP leverantören?
- Skräddarsydde ni systemet något för att passa organisationen?
- Vilka typer av utmaningar eller problem stötte ni på under implementeringen av ert system? Hur överkom ni dessa?
- Hur lång tid tog det tills att alla kunde jobba med systemet på rutin?
- Hur skulle du beskriva din involvering i implementeringsprocessen?

Efterimplementation

- Har anställda varit villiga att delta i att sprida kunskap om hur man använder systemet?
- Vad har ni gjort för att öka spridningen av kunskap inom företaget om hur man använder ERP system?
- Vad har ni gjort för att skapa bättre förståelse av systemet?
- Vad för förändringar har ni gjort inom organisationen för att bättre anpassas med systemet?
- Hur har tekniska problem påverkat organisationen och användarna av systemet?
  - Vad har ni gjort för att förbättra eller motverka sådana situationer?
- Har ni känt av frustrationen i organisationen på grund av systemet eller tekniska problem?
- Har ni använt er av extern support för systemet efter implementationen? Om så, vad för typ av extern support och vad för roll hade dem?
  - Hur länge använde ni extern support?
  - Tycker du att denna externa support har varit användbar för organisationen?
  - Om ni inte använde extern support: Om ni blickar tillbaka, tror ni det hade varit bra att ha extern support?
- Hur framgångsrikt anser ni att ERP systemet har varit för er? Har ni mätt detta på något sätt?
o Vad för motgångar/problem har ni stött på efter att ni implementerat systemet?

**Förbättring & Användning**

o Vad för beslut har ni tagit angående förbättringar av systemet från att systemet har implementerats till idag?
  o Har ni gjort några systemuppgraderingar eller andra förbättringar av systemet?

o Vad har ni gjort för att förbättra/optimera användningen av systemet (utan att förändra systemet)?
  o För att effektivisera interna processer?
  o För att bättstra möta företagsmål?

o Känner ni att ERP systemet har gynnat er som organisation? Om så, på vilka sätt?

o Hur väl känner ni att ert ERP system matchar er organisation?

o Känner ni att ERP systemet koordinerar väl med era företagsmål?

o Vad har ni gjort för att bättre matcha systemet med organisationen eller tvärtom?
  o För att öka avkastningen eller annan prestationsmätning?
  o För att bättre möta företagsmål?

o Känner ni er nöjda med ert val av ERP system och har systemet möt era förväntningar?

o Har systemet uppnått vad det var ämnat för?