UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Master Degree Project in International Business and Trade

Knowledge Sharing within Business Process Integration

What are the barriers for knowledge sharing? - The case of Statkraft's e-invoice project

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ABSTRACT

As Multinational Corporations (MNCs) expand their footholds over the world along with the development of digitalisation, a natural strategic requirement in process standardisation and simplification has been introduced for a future integrated platform. Knowledge is always a critical factor during the transformation. This research aims to explore further what are the main barriers for intra-organisational knowledge sharing across national borders within business process integration in an accounting project.

A case study approach has been adopted for this research based on 11 semi-structured interviews conducted with the HQ in Norway and subsidiaries in Germany, Turkey and Brazil. The results demonstrate that knowledge sharing in the journey of business process integration can face several barriers related to contextual, technological, organisational and individual factors. The findings also show that the contextual factors have significant impacts over the other barriers that is essential to address for future strategy of an MNC.

Key words: Multinational Corporations (MNCs), Knowledge Sharing, Business Process Integration, Barriers.
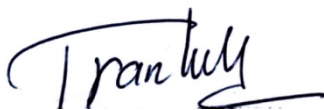
ACKNOWLEDGEMENT

Gothenburg, 2nd June 2017

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LIST OF ABBREVIATIONS

MNC   Multinational corporation

HR   Human resources

HQ   Head quarter

IB   International business

IT   Information technology

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1   INTRODUCTION

This chapter introduces the background to the topic of knowledge sharing under business process integration within MNCs, and the importance of constantly striving for the better in order to compete in the global market. Thereafter, a problem discussion is provided, based on the background, the research purpose and research questions are stated. Finally, the limitations of this study is presented, and a research outline is provided in order to guide the reader through the thesis.

1.1   Background

Over the last decade, the trend of internationalisation and globalisation of firms has increased at a fast pace. Alongside with the trend, organisational performance and continuous learning are key factors to succeed and stay competitive. Therefore, the concept of knowledge sharing across borders has been widely researched in the literature of international business and management. Since the late 1990s, knowledge has been a central part of the management issues and researchers have stressed knowledge as an important tool to generate competitive advantages (Grant, 1996b; Gupta & Govindarajan, 2000; Kogut & Zander, 1992; Kogut & Zander, 1993; Szulanski, 1996). In order to cope with the increased competition in the global market, MNCs are bound to share knowledge efficiently across national borders (Algote et al., 2000); however, MNCs have to strive to be better in order to survive in the global market in the long run (Lodh & Nandy, 2006; Raj, 2007).

Kogut and Zander (1993) are among the first authors who emphasised the role of knowledge as a foundation for the successful creation of organisations. Following these authors, Grant (1996b) highlighted the importance of knowledge as a crucial resource for MNCs to achieve competitive advantages in the global environment, by addressing the knowledge-based approach as a development of the resource-based view. The motivation for this development of the resource-based view, was to empathise the importance of knowledge transferability within organisations, as it could minimise the time span for learning and thereby increase the competitiveness of MNCs (Grant, 1996b). From another perspective, Gupta and Govindarajan (2000) introduced the communication theory that knowledge flew within MNCs across both multiple directions and multiple dimensions. They highlighted that the MNCs' ability to exploit and transfer knowledge more effectively and efficiently in different contexts are crucial for the competitive advantages of MNCs. Building based on the research of Gupta and Govindarajan (2000), Foss and Pedersen (2004) argued for the importance of organisations to share knowledge through networks. They

claimed that it was important for an MNC to have incessant knowledge flows within the MNC's network and among other MNCs in order to remain competitive in the international environment, and thereby, MNCs were today seen as knowledge sharing networks.

In addition, Szulanski (1996) argued that knowledge sharing was a replication of internal practices. Furthermore, he referred to practices as the organisation's routine use of knowledge. This indicates that knowledge sharing can be seen as sharing of information between a source and a receiver. Hence, the importance of knowledge sharing cannot be underestimated; nevertheless, the effectiveness of this process varies considerably among MNCs and among individuals within the MNCs (Algote et al., 2000; Szulanski, 1996).

1.2 Problem discussion

The requirements for knowledge sharing in business increase in line with the development of goods and services. It is, therefore, important for MNCs to continuously increase their knowledge level and thereby their knowledge sharing as an indispensable tool to obtain sustainable competitive advantages in the long run (Grant, 1996b). Earlier research in the knowledge management literature has mainly focused on the importance of knowledge and its implications for the competitive advantages of the MNCs and how this knowledge can be created within the MNCs (Algote et al., 2000; Grant, 1991; Grant, 1996b; Gupta & Govindarajan, 2000; Kogut & Zander, 1993; Szulanski, 1996). Less research has been done on the barriers for integrating and sharing knowledge within an MNC's network. Szulanski (1996) has been widely cited and he clarified the different characteristics of barriers to knowledge sharing. Yet, this research does not contain any information of barriers to knowledge sharing within business process integration. In addition, it is a quantitative study, based on a questionnaire, which implies that a detailed level of research was not done about the context of knowledge sharing. Therefore, we believe that qualitative research would benefit the development of this area.

Furthermore, Kim and Mauborgne (1993) discussed the importance of the due process in the global strategy of an MNC. The due process exists to motivate the subsidiary managers to implement strategies in accordance with the HQ, by giving the subsidiary a strong sense of organisational commitment, trust in HQ management, social harmony with HQ and fundamental requirements for making strategies work. The exercise of due process translates directly into a high level of compulsory and voluntary execution, and thereby the due process motivates managers to fulfil corporate standards to exert voluntary effort to implement strategic decisions of their best ability. Following this path of research, Meyer et al. (2011) discussed the absorptive capacity of

different subsidiaries within an MNC's network by elaborating on the home and host context of multiple embeddedness of the subsidiaries. Combining these views with the studies of knowledge sharing barriers, we believe that it is important to research the knowledge sharing between HQ and subsidiaries by taking into account multiple embeddedness and motivational factors for knowledge sharing and by examining the barriers for knowledge sharing and how to overcome them within business process integration.

In addition, earlier research focused mainly on the executive organisational level (Grant, 1996a; Kogut & Zander, 1993; Meyer et al., 2011; Szulanski, 1996; Zander & Kogut, 1995). Therefore, we believe it is important to dig deeper into one organisation, and look at the barriers of knowledge sharing among different departments over national borders.

1.3   Purpose and research question

Following the problem discussion, the purpose of this study is to develop the understanding of how knowledge is shared between sender units and recipient units within one project across national borders. This will be done by investigating how knowledge is shared within an MNC, by combining cross-disciplinary intersections within the fields of international business and knowledge management. The study focuses on the different barriers for knowledge sharing between HQ and subsidiaries under a new business process integration project. In addition to map the different barriers, the study will also provide an overview of how the identified barriers relate to each other and thereby influence each other on different levels. With this background, the following research questions have been raised:

1. *What are the main barriers for knowledge sharing between units within an MNC, when implementing new business processes?*
2. *How do these barriers relate to and influence each other?*

Following the purpose of this study, the aim is to contribute to the research by focusing on the accounting department, which lacks focus in earlier research. Furthermore, we will focus on the digitalisation process, the development from paper invoices to a total digital invoice-handling system within the MNC. In order to understand the concept of knowledge sharing on a deeper level, a detailed study is required. This will incorporate a case study of the Statkraft Group, a Norwegian state owned company, who are among the world leading hydro power producers and the leader within renewable energy among the Nordic countries. This research will investigate the barriers to knowledge sharing within the accounting departments across national borders, namely

the knowledge sharing between the HQ in Norway and the foreign subsidiaries in Germany, Turkey and South America. The subsidiaries in South America are located in Brazil, Chile and Peru, however tis study will mainly focus on the Brazilian subsidiary.

1.4   Study limitations

The focus of this research is on the barriers of intra-organisational knowledge sharing between HQ and subsidiaries at the Statkraft Group, under a particular project of the accounting department. Therefore, this study aims to complement the popular but broad field of literature of knowledge sharing in IB studies. The study is also limited within a specific company and industry, in which data is collected from one single MNC. Four sites of the MNC, one HQ in Norway and three subsidiaries in Germany, Turkey, and Brazil, which have been launching the targeted project, are investigated.

1.5   Research outline

This research is divided into six different chapters, and is structures as follows:

Chapter 1 – Introduction

Chapter 1 introduces the subject of barriers to knowledge sharing within the field of IB. It further outlines the purpose of the research and presents the research questions of this study, as well as the study limitations.

Chapter 2 – Literature review

Chapter 2 outlines the literature review by presenting the previous research on knowledge within the field of IB in general and knowledge sharing in particular. This covers different researchers' work within the field that built the foundation for this research's conceptual framework.

Chapter 3 – Methodology

Chapter 3 describes the methodological approach for this qualitative study and outlines the following process of the empirical data gathering. It carefully explains the process of preparations, the accomplishment and the analysis of empirical data.

Chapter 4 – Empirical findings

Chapter 4 starts by introducing the company we chose to study and presenting the project of integrating a new digital solution to handle invoices. Subsequently, the empirical results gathered from the interviews were presented. This includes the interviewee' perspectives on different barriers related to knowledge sharing within the organisation under a particular project.

Chapter 5 – Analysis

Chapter 5 presents the analysis of our case. This presents the links between the literature review presented in Chapter 2 and the empirical findings presented in Chapter 4.

Chapter 6 – Conclusion

Chapter 6 provides a summary and conclusion of the findings, as well as distinct answers to the research questions of this study. It also discusses implications for managers and suggestion for future research.

2 LITERATURE REVIEW & CONCEPTUAL FRAMEWORK

This section aims to provide an overview of previous research that has been conducted in the field of knowledge sharing in IB. The section begins with a perspective on general concepts and types of knowledge. This is subsequently followed by a review on previous studies about knowledge management and knowledge sharing in MNCs and is finally focused on barriers on knowledge sharing process within an organisation. The section is concluded by a theoretical framework, which is the foundation for the interview guide and data collection, as well as the analysis of the empirical findings.

2.1 The concept of knowledge

In management literature, knowledge is a multifaceted concept and clear differences have been made between the different definitions and meanings of knowledge (Grant, 1996b). However, the most common terms people often heard around knowledge are data, information and knowledge, which seems somehow to be used interchangeably. It is important to distinguish that knowledge is the application and productive use of information, and information is created as the base of data (Davenport & Prusak, 1998; Roberts, 2001). Other researchers believe that all information is considered knowledge but knowledge is more than just information (Kogut & Zander, 1992; Kogut & Zander, 1993). They categorised organisational knowledge into information and know-how based. These two types of knowledge carry competitive implications due to the fact that they are easy to replicate within an organisation, but difficult to imitate by other firms. Information is defined as knowledge which can be transmitted without loss of integrity, in other words, the knowledge of what to do. Know-how is defined as the accumulated practical skill or expertise, in other words the knowledge of how to do (ibid).

Simulated by the question of why firms exist, Grant (1996b) initially outlined the knowledge-based view of the firm, with a goal to explain firm's performance and the determinants of strategic choices, and by this contributed with a new theory of the firm's existence. The knowledge-based view seeks to explain and predict why some firms are able to create sustainable competitive advantage positions and when doing this, earn superior results (ibid). Nevertheless, the key contributors to the literature of the knowledge-based view are also Kogut and Zander (1992) with focus on the view of the firm as a knowledge-processing institution, Demsetz (1988) who highlighted the firm boundaries through knowledge-based analysis, Brown and Duguid (1991) who examined of the knowledge-based organisation and Nonaka (1994) who emphasised the knowledge creation within the firm analysis. However, knowledge can only be seen as a competitive advantage

if it is possible to reuse to the extent that reduces the cost of retrieval, transformation and transfer or it will intensify efficiency (Charlie & Rebentisch, 2003).

2.2 Nature of knowledge

While studying the processes of knowledge sharing and their impacts on organisations' performance, earlier studies distinguished between tacit and explicit knowledge (Nonaka, 1994; Park et al., 2015). Explicit knowledge is defined as externalised knowledge that is accessible to others (Nonaka, 1994; Schryen et al., 2015), and is viewed as a good for the public and can be utilised through communication (Grant, 1996b). On the other hand, tacit knowledge is defined as knowledge that has not been published, hence it has personal quality, which makes it hard to communicate and formalise because it is rooted in commitment, involvement and action (Nonaka, 1994; Schryen et al., 2015). The tacit knowledge is learned through practices and transferred through observation (Kogut & Zander, 1992). Therefore, tacit knowledge is a barrier for replication, due to its embeddedness in processes, routines, and interactions within the firm (Kogut & Zander, 1992; Lam, 1997; Nonaka, 1994; Reed & Defillippi, 1990; Simonin, 1999).

Following the step of Nonaka and Takeuchi (1995), Spender (1996) blended the explicit and tacit knowledge dimensions with individual and social knowledge ones and generated a matrix of four types of organisation's knowledge by combining these dimensions. The first type refers to individual explicit knowledge, which is storable and retrievable from individual record and memory. The second type, which is learning and experience-based knowledge, is known as individual tacit knowledge. The third type is social explicit knowledge, which represented the shared corpus of knowledge and is consider as the most advanced form of knowledge (Boisot, 1995). The fourth type refers to an organisation's social tacit knowledge, represents all knowledge embedded in social and institutional practices. It regards to "the most secure and strategically significant kind of organisational knowledge" (Spender, 1996, p. 52). However, other research indicated that firms to a large extent valued individualism and encouraged their employees to be independent in decision making and problem solving, especially in Western organisations (Nonaka & Takeuchi, 1995). Firms, nonetheless, also emphasise employee collaboration and team work (Riege, 2005). Thus, in order to achieve the desired level of knowledge sharing, the communication about knowledge sharing to the employees is very important since the knowledge application is not only valued at individual level but also at group performances and collective accomplishments.

2.3 Knowledge management

Many researchers in both business and academia have reviewed knowledge management theory (Liebowitz, 1999) with different perspectives surrounding this topic at the organisational level: information systems, management, organisational learning, and strategy perspective (Bray, 2007). The four perspectives overlap and support each other's argument. Information systems can help to manage knowledge and affect the performance of the firm (Choi & Lee, 2003; Gold et al., 2001; Tanriverdi, 2005) with the support of processes: knowledge creation, knowledge sharing, knowledge transferring, knowledge application (Alavi & Leidner, 2001), and knowledge replication (Winter & Szulanski, 2001). Processes of knowledge acquisition, conversion, application and protection are also considered in recent studies (Gold et al., 2001). Several literatures mentioned that the processes could be influenced by individuals, institutionalised routines and capabilities (Dyer & Nobeoka, 2000; Liebeskind, 1996; Tsoukas, 1996). The previous studies also emphasised that knowledge management could produce long-term competitive advantage of an organisation (Alavi & Leidner, 2001; Choi & Lee, 2003; Gold et al., 2001; Tanriverdi, 2005).

As MNCs internationalise, knowledge must be shared not only between employees in the same country, but also across national boundaries. The process of successfully sharing knowledge across national boundaries, has thereby become a competitive advantage for MNCs (Grant, 1996b; Szulanski, 1996). Hence, it is important to investigate how to make effective knowledge management with in an organisation.

2.3.1 _Knowledge management in business process integration_

According to Bourdreau and Couillard (1999), IT provides knowledge management capabilities that were not possible before. Furthermore, they argued that process integration that incorporates true knowledge management offered the organisation an opportunity for organisational transformation. By combining business process integration and knowledge management, MNCs can become more competitive, innovative, responsive, effective and efficient (Bourdreau & Couillard, 1999; Jung et al., 2007).

As the business world becomes more complex due to globalisation, IT, communication systems and explosion of knowledge, it is important to keep pace with the shifting environment (Bourdreau & Couillard, 1999). Therefore, MNCs must learn as quickly as the environment changes to stay competitive. Jung et al. (2007) introduced an architecture for integrating knowledge management systems and business process management systems to combine the advantages of these two

paradigms, and thereby provided a framework for MNCs to maintain their competitive advantages when integrating new business processes. Firstly, knowledge is used by performers of business processes. New knowledge is created as results of business processes. In other words, business process is an exceptional tool for knowledge sharing and knowledge creation. Subsequently, knowledge about a process and process implementation results are valuable corporate knowledge. In other words, information derived from business processes can be formalised and gathered to improve the performance of business processes, and thereby the organisation. IT provides a powerful enabling factor for capturing and sharing the knowledge within an organisation (Bourdreau & Couillard, 1999)

Knowledge management and business process management need to be integrated together in order for the organisation to stay competitive and achieve organisational success (Bourdreau & Couillard, 1999). Therefore, the need to become more knowledge oriented, learning oriented and take advantage of the existing knowledge is a key factor for process integration. Only when the organisation developed common knowledge and knowledge management structure, will the organisation be able to benefit from business process integration (Bourdreau & Couillard, 1999).

2.3.2 *Knowledge sharing*

As MNCs grow and expand in size, geographical dispersion, and complexity, organisations must acknowledge the importance of knowledge sharing since it helps to achieve organisational competitive advantages, support to develop best practices and reduce redundant learning cycles (Choi & Lee, 2003; Hansen, 2002; Kanaan & Gharibeh, 2013; McDermott & O'Dell, 2001). Previous studies also expose that knowledge sharing has a link to deduction in production costs, innovation facilitation, team achievement, organisational performance including sales and revenue growth from initiatives (Cummings, 2004; Hansen, 2002; Mesmer-Magnus & DeChurch, 2009; Svetlik et al., 2007).

The definition of knowledge sharing was used interchangeably and interconnected with knowledge transfer in the early research of knowledge management (Wang & Noe, 2010). However, recently emerged studies have distinguished and re-defined these two terms. Several studies indicate that knowledge transfer only occur in one direction that knowledge exchange flows only from a sender giving away knowledge to a receiver acquiring knowledge (Mohan & Kumar; Schwartz, 2005; Wang & Noe, 2010). On the contrary, knowledge sharing regards the mutual knowledge exchanges in both directions (Szulanski et al., 2004; Wang & Noe, 2010). Nonetheless, there is another research showing that knowledge sharing is a critical stage in the process of knowledge transfer (Nonaka,

2008). Tangaraja et al. (2016) also believed that knowledge sharing was a subset of knowledge transfer since knowledge transfer was a broad term compared to knowledge sharing. Chou and Tang (2014) presented a similar thought that the term knowledge transfer emerged earlier and covered multidisciplinary aspects but knowledge sharing was generally more focused on the knowledge management aspects with the application of information system.

Several researchers focused on personal knowledge while studying knowledge sharing within an MNC. They emphasised the individualistic extent of knowledge and the embeddedness in specific social contexts (Fernie et al., 2003; Ipe, 2003; Szulanski et al., 2004; Wang & Noe, 2010). This stream of research mainly focuses on the affection of individuals in the process of sharing knowledge despite of the fact that there exists specific technology invested by MNCs to facilitate knowledge sharing (Cabrera & Cabrera, 2002).

In the paper, we focus on knowledge sharing in which knowledge flows between HQ and foreign subsidiaries in both directions among individuals. Since knowledge is one of the most important strategic competence of an MNC, every individual in the organisation is the tie of creating and developing knowledge. Knowledge is not only explicit but to large extent tacit, it becomes more important nowadays for the company to formulate mechanisms facilitating knowledge sharing among individuals.

2.4   Barriers of knowledge sharing

The following section will contribute to map the barriers for knowledge sharing based on earlier studies within knowledge management and international business studies. Following this section, our conceptual framework will be presented, based on the literature presented in this section.

In theory, knowledge sharing seems to be rather easy, and can be accomplished by moving tools, tasks or employees (Algote et al., 2000). However, according to Chmielecki (2017), knowledge sharing within MNCs is problematic, because MNCs vary considerably in how to handle the knowledge sharing process.

2.4.1   *Contextual factors*

Meyer et al. (2011) explained how the knowledge sharing process was influenced by both home and host context of MNCs. Firms are shaped by their home country embeddedness, where they build their original resource endowments which is an original resource that drives the international growth of the MNC (Tan & Meyer, 2010). This home embeddedness of MNCs, can act as both

constraints and inducements in international business activities (Narula, 2002). In addition to their home context embeddedness, MNCs are also embedded in the local context of their subsidiary's host country (Meyer et al., 2011). The dual embeddedness of the subsidiary implies that it is subject to institutional pressures arising from both the subsidiary's local context and the HQ's home context (Andersson et al., 2007). The MNCs interaction with their different local context is depending on how these context are related to each other (Meyer et al., 2011). How these contexts relate to each other affects the interaction MNCs have with their different local contexts. Earlier research within the field of IB have used various concepts to investigate these relationships of multiple embeddedness, such as the cultural distance (Kogut & Singh, 1988), psychic of distance (Johanson & Vahlne, 1977) and institutional distance (Estrin et al., 2009; Kostova, 1999). Furthermore, these concepts have been complemented by Cuervo-Cazurra and Genc (2011), who questioned the treatment of difference as distance. Hutzschenreuter et al. (2011) also suggested that the crucial variable to focus on was the distance between the locations of different expansion moves. Nonetheless, Schwens et al. (2011) developed the institutional distance by focusing on the level of institutions-related risk in the host country.

Together these concepts create the foundation for the multiple embeddedness of the MNC, which is outlined as in the Figure 1 below:
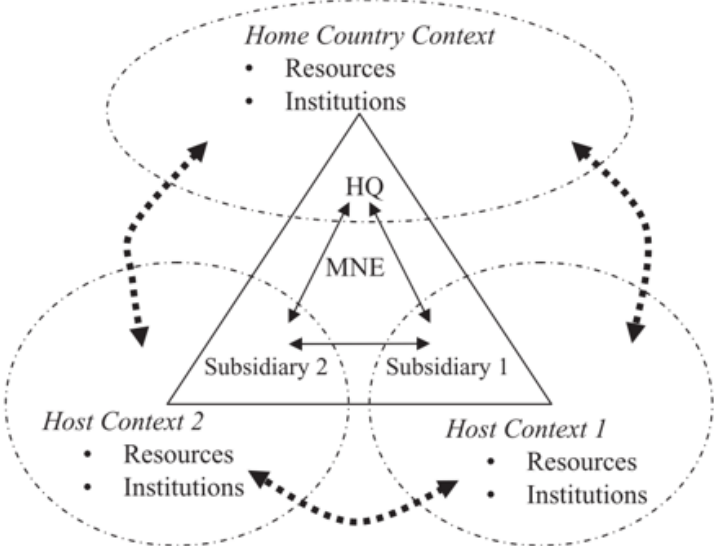
Figure 1: Multinational enterprises and local context (Meyer et al., 2011, p. 240)

Figure 1 shows the multiple embeddedness of MNCs. It outlines how the different subsidiaries are influenced by the HQ's home country context and their subsidiaries' host country context. This multiple embeddedness is important in order to understand how barriers in knowledge sharing is

affected by both the HQ and subsidiaries' local context such as local laws, regulations and way of doing business, as these different home and host contexts play an important role for the knowledge sharing across national borders.

Haas and Cummings (2014) highlighted the importance of geographical barriers to knowledge sharing in MNCs. Such barriers consist of world regions, international time zones and working in different country locations (Cramton, 2001; Espinosa et al., 2003; Hinds & Mortensen, 2005). Furthermore, Haas and Cummings (2014) argued that position-based barriers arose from geographical locations, or structural associations within the MNC. Moreover, these barriers of knowledge sharing that are position-based international differences rather than person-based barriers to knowledge sharing and therefore harder for MNCs to overcome and deal with.

During the last years, researchers have been studying the importance and impact of language barriers in MNCs (Tenzer & Pudelko, 2016). Such corporate context consists of HQ-subsidiary relations (Bordia & Bordia, 2015; Reiche et al., 2015) and multinational teamwork (Hinds et al., 2014; Tenzer et al., 2014). In recent years, a trend of adopting English as a corporate language within a number of non-English speaking MNCs has been observed (Harzing & Feely, 2008).

2.4.2   _Lack of integration of IT system_

According to Riege (2005), technology has the ability to offer instant access to data and information, and enables long distance collaboration and communication that facilitates a team approach, both within the MNC's network. However, in order to fully reach the potential of the technology, the employees working with new technology need to be able to understand and work with it.

Riege (2005) stated that at a technology level, barriers correlated to factors and difficulties linked to building, integrating and modifying IT-systems. Another potential barrier is to develop or maintain the right IT infrastructure, linked to the capability of the technology and the integration of both existing and new IT-systems. This barrier occurs when existing hardware and software components suited for one purpose need to be used in combination with another new system or a different system in another location. To find a system that works well in all functional areas within a global organisation is almost impossible. However, technology is now a main driver in most MNCs and industrial sectors, which most day-to-day activities are highly dependent on. Therefore, more complex technology is called upon to play a greater role in streamlining business processes in order to maximising outputs. MNCs and employees therefore need to accept the challenges of

greater complexity in the workplace, which may result in reluctance to use modified or new technology systems (ibid).

2.4.3   *Reluctance to use IT system*

Riege (2005) emphasised that there were barriers linked to the use of technology. These barriers correlate with factors such as the unwillingness to use technology, due to a mismatch with the needed requirements, and unrealistic expectations of IT-systems. Therefore, a barrier occurs when there is a mismatch between the employees' needs and requirements and the new IT-system. A IT-system should support the work-related processes of the employees, who decide which information to store, access or forward to other employees. Both existing and new technologies are often capable of supporting effective an effective knowledge sharing process, however, if there is a mismatch between the employees needs and requirements, and the technology, the technology itself can become a barrier. This is not due to technical problems, but to the expectations, needs and requirements of the employees, that are not being met (O'dell & Grayson, 1998).

The lack of knowledge about IT-systems can become a potential barrier for the process of knowledge sharing (Riege, 2005). Employees tend to exaggerate or misstate the role of the new technology, which can result in confusion linked to what the technology should do, can do, or cannot do. Furthermore, unrealistic expectations often tend to be blamed on the technology, which results in a reluctance to use new technology or IT-systems. Therefore, it is necessary to involve users when designing and choosing IT-systems (ibid).

2.4.4   *Technology and knowledge creation support.*

According to Riege (2005), the knowledge sharing process is as mush an individual and organisational barrier as it is a technology challenge. In order to overcome these challenges, interactions between individuals and technology are necessary to facilitate knowledge sharing practices (Davenport et al., 1996). However, most companies have been struggling to create an environment where employees want to share their knowledge as well as to make use of others knowledge. Technology has the ability to help solving this issue, as it acts as a facilitator for knowledge sharing across national borders, and can thereby encourage and support both knowledge creation and sharing by making the process easier and more effective. However, to choose and implement the most suitable technology can be a challenge. IT-systems that work effectively in one organisation may fail on others (Riege, 2005). Hendriks (1999) suggested that the use of new IT-systems might enhance employees' motivation for knowledge sharing, as it tended

to remove temporal, physical and social distance barriers, by improving the process of knowledge sharing. Even though, technology is rarely the only solution and driver for knowledge sharing, the integration of the right technology is highly important. Numerous technologies such as Internet, intranet system, e-mail systems and communication software like Skype have huge impacts on reducing the formal communication barriers, especially across national borders (Riege, 2005).

2.4.5 *Organisational culture*

The effects of organisational culture on knowledge sharing are examined by many previous studies. De Long and Fahey (2000) argued that organisational culture was gradually recognisable as a main obstacle to leveraging intellectual assets. The definition of organisational culture is complex and varies in both practice and academia (Sułkowski, 2009). In Lesser and Prusak (2004), culture is defined as values, beliefs, and behaviour of an organisation. According to Brache (2002), an organisation conducts business through a culture that encompasses values, rules, practices, and norms. Different definitions has emerged, nonetheless, the organisational culture can be simply understood as 'the way we do things around here' and 'the way we treat one another around here' (McKinlay & Williamson, 2010).

In some organisations, especially in a highly competitive professional culture, knowledge is a competitive advantages and power that leads to the behaviour of knowledge-hoarding (Scarbrough, 2003). In other words, the professional environment that emphasises individual competition may posture a barrier to knowledge sharing, whereas team cooperating mind-set help build trust, a necessary condition for knowledge sharing (Schepers & Van den Berg, 2007; Willem et al., 2006).

Ardichvili (2008) has a different point of view, that most large MNCs considers knowledge as a public asset and belong to the whole organisation, not individually. When such perception exists in each employee, knowledge sharing can be facilitated by the group interest rather than individual interest. Empirical studies also indicated that in case an organisation considered knowledge as a private asset, their employees would hesitate to share knowledge (Wasko & Faraj, 2000). As emphasised in the paper, knowledge is a significant source of competitive advantage of an organisation. Thus, if the organisation desires to get ahead of the competition, they need to convert individual knowledge into organisational knowledge by motivating employees to share knowledge continuously.

Some studies have also highlighted that an organisational culture which strongly focuses on innovation can facilitate intra-sharing knowledge with encouraged subjective norms (Bock et al.,

2005; McKinnon et al., 2003; Ruppel & Harrington, 2001). De Long and Fahey (2000) also stated that the long-term value and practices of organisations, which did not support knowledge sharing across units, might limit the benefit of new technology infrastructure.

Trust is one of the culture dimensions that researchers are interested to investigate its influence on knowledge sharing. It is shown that a culture with high degree of trust can ease the negative effect of perceived costs on sharing knowledge, while lack of trust can create an opposite effect (Kankanhalli et al., 2005).

2.4.6   *Organisational structure*

While exploring what barriers at organisational level can inhibit intra-firm knowledge sharing, many researchers examine the effect of organisational structure. Tagliaventi and Mattarelli (2006) found that a functionally segmented structure seemed to hinder knowledge sharing over departments, whereas, a more decentralised organisational structure, which encouraged interaction among employees and communication across functions (Liebowitz, 2004; Yang & Chen, 2007), had possibility to enable knowledge sharing (Kim & Lee, 2006). In general, Wang and Noe (2010) summarised that employee's rank, hierarchy structure and seniority are obstacles for knowledge sharing facilitation.

There also exist barriers to knowledge sharing of internal knowledge and replication of knowledge among HQ and subsidiaries. These barriers are determined by their motivational disposition to gain and shared knowledge, the capacity of absorbing incoming knowledge, the knowledge stocks and the richness of transmission channels (Gupta & Govindarajan, 2000; Szulanski, 1996). Therefore, it is essential for an MNC's HQ to link subsidiaries to the rest of the global network in order to facilitate knowledge sharing and communications between divisions by establishing coordination mechanisms. Also, the "not invented her syndrome" can affect the subsidiaries willingness to absorb knowledge even though it is shared within the MNC's network (Gupta & Govindarajan, 2000; Szulanski, 1996).

2.4.7   *Employee' perspectives*

Previous research has examined that individuals are often not willing to share knowledge in their organisation, and that knowledge has stickiness characteristic and does not transfer easily, even though firm has made a huge effort to facilitate knowledge sharing (Szulanski, 1996). He identified the three most important barriers to knowledge sharing. First, causal ambiguity, which refers to the difficulty of replicating a capability into a new setting which can depend on human complex skills

but also the tackiness of the knowledge. Second, the recipient of knowledge may lack of absorptive capacity, which means that the recipients ability to absorb new knowledge is low. The last barrier he recognises is arduous relationships. Knowledge sharing occurs between people, therefore, it requires a good relationship between the recipient unit and the source unit, especially if tacit knowledge is to be shared. If the relationship is distant and lack of intimacy, this may create a barrier to sharing knowledge.

Osterloh and Frey (2000), who studied about intrinsic and extrinsic motivation in intra-organisational knowledge sharing, indicated that intrinsic motives highly stimulate such sharing, while extrinsic motives (e.g. incentive schemes, administrative) has less influence, and are even able to become a reluctant in knowledge sharing. However, there are many of reasons for why people in an MNC are hesitate to share knowledge. Some of these reasons comprise the fears related to criticism and misleading, the unclearness of what the most effective methods of sharing knowledge are, and cultural assumptions about proper and improper ways of knowledge sharing and communication (Ardichvili, 2008; Ardichvili et al., 2006).

In addition, according to Kankanhalli et al. (2005), loss of knowledge power can also be accounted as a barrier. Their study shows that this barrier to knowledge sharing is increasing in line with the technological development of electronical knowledge sharing. Furthermore, knowledge sharing can also be linked to a fear-based perspective (Davenport & Prusak, 1998). This means that employees are unwilling to share their knowledge in fear of being replaced. The fear based perspective tends to be more accurate when sharing knowledge across national borders, than when sharing knowledge within a team, as employees seems to be more willing to share their knowledge internally in their working team.

2.5   Conceptual framework

In the previous part, we have chosen seven concepts of barriers to knowledge sharing to examine. These seven concepts are as outlined in the previous section: *Contextual factors, Lack of integration of IT-systems, Reluctance to use IT-systems, Technology and knowledge creation support, Organisational culture, Organisational structure* and *Employee' perspectives*. These concepts have been chosen in accordance to the reviewed literature, and presents professional perspectives from both practice and academia.

We found that most of the chosen barriers can be categories into three more narrow categories as in Riege (2005)'s work: *Technological barriers, Organisational barriers* and *Individual barriers*. However, while reviewing previous of Meyer et al. (2011), we discovered that the contextual factors affected

all three categories as they outlined the home and host embeddedness of the MNC. Therefore, we believe that the contextual factors are superior to the other three categories of barriers. Furthermore, the four categories of barriers are different. Most of them are broad, but the barriers linked to technology is more specific and narrow to our subject. This is because we aim to identify the main barriers for knowledge sharing within new business process integration and not all barriers for knowledge sharing. Also, our study focuses on introducing e-invoice as a new business process, which is why we only focus on the technological barriers linked to introducing e-invoice as a new business process and not all barriers for knowledge sharing linked to technology.

The grouping of the barriers for knowledge sharing that we have identified through the literature, is therefore outlined as follows in Figure 2, which presents our conceptual framework:
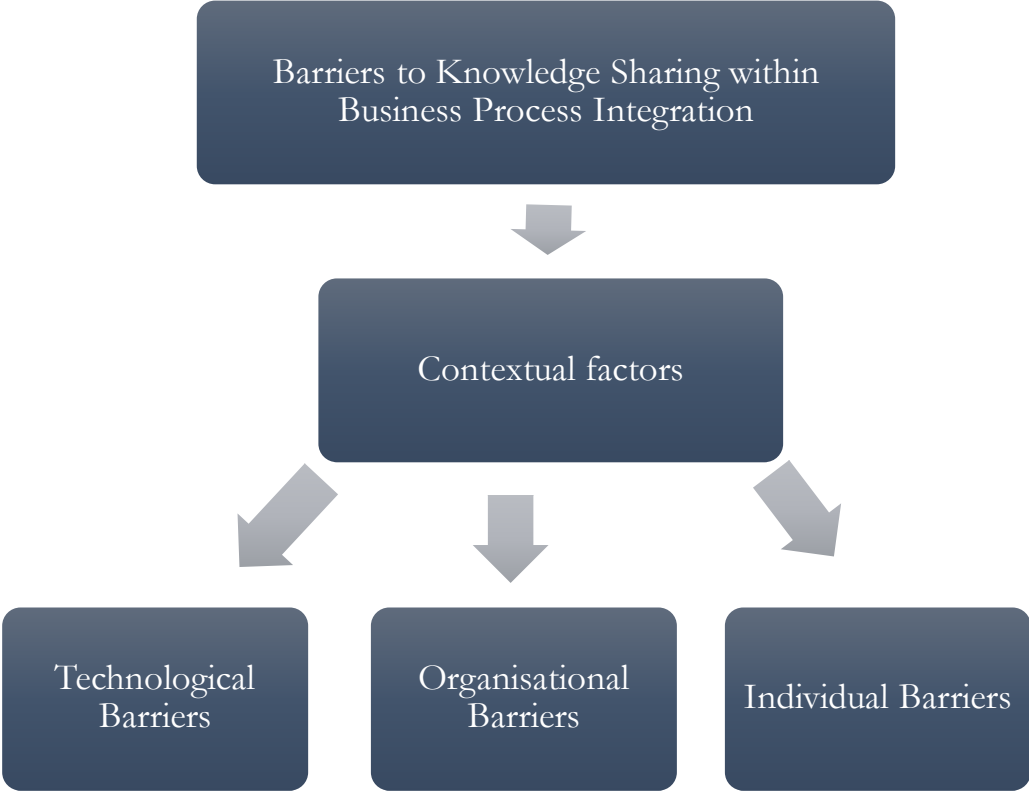
Figure 2: Conceptual Framework (Authors' own conceptualisation)

Following the literature review the grouping of the conceptual framework presented in *Figure 2* above consists of the following outline: *Technological Barriers* include *Lack of integration of IT-systems, Reluctance to use IT-systems* and *Technology and knowledge creation support. Organisational Barriers* include *Organisational culture* and *Organisational structure.* Lastly, *Individual Barriers* include *Employee' perspectives.*

3 METHODOLOGY

This chapter presents the methodology used for this research in detail. First, the research approach will be presented and argued for. Thereafter, the research unit will be presented and outline a detailed description of the interview process. Lastly the reliability and validity of the research will be presented.

In our thesis, we will use a qualitative research method approach. When deciding on what type of qualitative method to pursue the choice fell on case study, which allows us to investigate the concept of knowledge sharing within its real-world context. This will give us a chance to deepen the understanding of the phenomenon. The gathering of empirical data has been conducted through semi-structured interviews. We think that this is the most suitable data collection method for collecting our primary data. Furthermore, we interview people across national borders and therefore we used the software Skype as a tool in order to conduct these interviewees. In addition to interviews, data were also collected through observations of the surroundings and locations during the interviews.

3.1 Research Approach

We chose the abductive theoretical approach, which involves back-and-forth engagement with the social world as an empirical source for theoretical ideas and with the literature, in a process of dialectical shutting (Atkinson et al., 2003; Bryman & Bell, 2015; Schwartz-Shea & Yanow, 2012). The literature review was created in order to deepen our understanding about the topic and earlier research linked to it. The literature review has functioned as a foundation for gathering the empirical findings. Through the analysis, the empirical findings and the earlier studies presented in the literature review as linked together, which is in accordance to the abductive theoretical approach (Bryman & Bell, 2015).

We attempt to get as close to the reality as possible. This is done through research in a natural context, where the research needs to be as realistic as possible (Darmer & Nygaard, 2005). In order to collect data in accordance with the interpretivist epistemology, we have chosen to use semi-structured research interviews as our primary data collection method. Focusing on getting as close to the truth as possible, we believe that semi-structured interviews give us the possibility to explore subjects and themes that the interviewees consider important due to the composition of both leading and open questions. In other words, the data collection method will aid us in the search for the truth concerning the research question. Furthermore, in order to reach as close to the truth as possible, and at the same time generate quality data and valid findings through the interviews we

have conducted, it have been important for us to minimise bias and research influence (Rowley, 2012).

3.2 Research Design

The research design outlines in what way the empirical data was collected systematically and analysed in relation to the research questions. This framework is important to achieve validity and reliability, which measures the quality of the study (Bryman & Bell, 2015)

3.2.1 *Research Unit*

The research design of this research will be carried out as a case study. The basic case study entails the detailed and intensive analysis of a single case (Bryman & Bell, 2015). There are several different types of case studies, but this research will focus on a single organisation (ibid). The reimbursements for choosing a single organisation case design is that the case represents an extreme or unusual case (Yin, 2014). Furthermore, Yin (1984) distinguished between different types of cases, we have chosen to research a revelatory case. The basis for the revelatory case occurs "when an investigator has an opportunity to observe and analyse a phenomenon previously inaccessible to scientific investigation" (Yin, 1984, p. 44).

We have chosen to investigate the Statkraft Group, and their project of integrating an e-invoice system across national borders. We believe that the case of introducing a global solution throughout an MNC, by integrating an e-invoice system has not been widely researched, as this is a new phenomenon that have increased regarding to new technology. However, the Statkraft Group is a large multinational company, the research is conducted at the HQ in Norway, and with subsidiaries in Germany, Turkey and Brazil. This implies that we will combine a single case study approach with a comparative design, by making comparisons between the different national borders. This is because we think it is interesting to study how knowledge sharing in the same project of the MNC differs across national borders or from different parts of the MNC's network.

At the HQ in Norway, we have investigated the accounting department. The accounting department in Norway is the owner of the project of integrating an e-invoice system, which is why we found this unit interesting to investigate. Also, the accounting department in Norway is the largest accounting department within the MNC's network and therefore have more influence than the subsidiaries. Furthermore, due to their centralised location, we believe that this influences the knowledge sharing between HQ and the foreign subsidiaries.

Another research unit, is the foreign subsidiary in Turkey. In Turkey, they are only three employees where two works with accounting related tasks. This implies a very different organisational structure than at the HQ in Norway. Therefore, we believe it is interesting to see how these differences affect the knowledge sharing process within the integration of e-invoice. Also, Turkey are obligated by the national law to implement e-invoices which affect how they integrate the new business process.

Furthermore, we also researched the German subsidiary. In Germany, they are 10 employees working with accounting related tasks. This implies that they are somewhere in the middle between the HQ in Norway and the Turkish subsidiary in size. However, the German market is not yet ready for e-invoices. We believe that this will shed light upon the difficulties linked to integrate new business processes across national borders.

In addition to the German and Turkish subsidiaries in Europe, we have researched the subsidiaries in South America. These units include three subsidiaries: *Peru, Chile* and *Brazil,* however the focus of this study will be on Brazil, as the other subsidiaries in South America are very small and newly acquired. As South America is completely different from Europe, the barriers linked to the integrating of e-invoice in these subsidiaries are very different from the barriers in the other subsidiaries. Therefore, we believe that researching subsidiaries in South America gives a more global view of the barriers linked to the integration of new business processes.

Combining these research units, we believe that we will be able to look at the barriers for knowledge sharing when integrating a new business process from different angels. We will combine the HQ perspective, one subsidiary that are obligated by national law to follow the initiatives from the HQ to integrate the new business process and one subsidiary where the local market is not yet ready, and therefore do not believe in the initiatives from the HQ. With these chosen research units, we believe that we will be able to answer our research question, by investigating different barriers from different angels and different organisational structures within the MNC's network.

3.2.2   *Data collection method*

This research is of a quality data approach, and based on the gathering of both primary and secondary data. The aim of this study is to investigate the main barriers for intra-knowledge sharing within business process integration and how the MNC can overcome these barriers. Therefore, the most suitable data collection method was considered primary data in the form of semi-structured interviews. Semi-structured interviews typically refer to a series of question that are in the general

form of an interview schedule, but can vary the sequence of questions (Bryman & Bell, 2015). This method permits us to focus straight on topics related to knowledge sharing, which leads us to insightful information. Furthermore, semi-structured interviews allow for comparability, and at the same time, it opens for opportunity to explore subjects and themes that the interviewees consider important due to the composition of both leading and open questions.

The interviews were conducted through face-to face, through the use of Skype and by telephone. At the HQ in Norway, the interviews were conducted face-to-face, and Skype and phone interviews were held with those abroad. Opdenakker (2006) discussed the advantages and disadvantages of face-to-face and telephone interview in terms of time and location, which is why we chose Skype as an interview tool, in order to combine the advantages of face-to-face and telephone interview, when interviewing people abroad. Also, Skype has a semi-formal structure, which tend to be less stressful for the interviewees, at the same time the interviewers are able to see the face expressions of the interviewees. Also, all interviewees have personal contact with us, which opens for a friendly and open environment for the interviews. The Skype-interview opens for the opportunity to record the whole interview, which allows us to watch it over and over, which therefore helps to prevent the shortcomings of memory (Carter, 2011; Hanna, 2012). However, when conducting the interviews, we faced some problems with Skype, both from our side and the interviewees' side. Therefore, three of our planned Skype interviewees turned out to be telephone interviews, which are also allowed for long distance communication (Holt, 2010).

In addition to interviews, data were collected through observations of the HQ and Skype locations. During the interview sessions, only one of the interviewers were asking questions. This enabled the other interviewer to take notes about the surroundings and how the interviewees reacted to the interview questions. Also, this enabled us to make clear notes about what topic the interviewees found most interesting during the interview, which made the transcription process and later coding easier.

In total 11 interviews were conducted, six were conducted face-to-face, two were conducted using Skype and three were conducted using phone. The Table 1 below, presents the interviewees positions, their departments, location, duration and date of the interview and additional information gained from the interviewees:

Position	Department	Interview method	Interview location	Duration	Date	Additional information
Project Accounting Manager	External Consultant	Face-to-face English Recorder used	Oslo, Norway	45 min	16/02/2017	
Project Manager 2	Accounting	Face-to-face English Recorder used	Oslo, Norway	60 min	20/02/2017	E-mail contact after interview to ask following up questions several times
Team Member 1	Accounting	Face-to-face Norwegian Recorder used	Oslo, Norway	25 min	21/02/2017	
Team Member 2	Back Office	Face-to-face Norwegian Recorder used	Oslo, Norway	40 min	21/02/2017	
Accounting Manager	Accounting	Face-to-face English Recorder used	Oslo, Norway	40 min	21/02/2017	
Team Member 3	Accounting	Face-to-face English Recorder used	Oslo, Norway	40 min	22/02/2017	E-mail contact after interview to ask following up questions several times
Manager Turkey	Accounting & Controlling	Skype English Recorder used	Turkey	35 min	01/03/2017	
IT Team Member 1	Market Operations & IT	Phone Norwegian Recorder used	Oslo, Norway	30 min	09/03/2017	
Team Member Germany	Market Operations & IT	Phone English Recorder used	Germany	40 min	09/03/2017	E-mail contact after interview to ask following up questions several times
Manager Germany	Market Operations & IT	Phone English Recorder used	Germany	40 min	09/03/2017	
IT Specialist South America	Market Operations & IT	Skype English Recorder used	Oslo, Norway	45 min	16/03/2017	E-mail contact after interview, took part of a power point presentation and got relevant links for further research on the internet.

Table 1: List of interviewees (authors' own collection)

3.2.2.1 Norway

At the HQ in Norway, the e-invoice project has been going on since 2012. Seven employees were interviewed, among these interviewees there were two project managers, one accounting manager, and four employees from different departments, such as accounting, back office and IT. The reason for choosing these interviewees was due to their different responsibilities within the organisation, that gave us different viewpoints of how knowledge is shared when integrating the e-invoice project. The interviewees tasks differed significantly; some had daily contact with the subsidiaries, and some had almost no contact. Also, by choosing these interviewees, we covered both the managers' perspective and the employees' perspective, in addition to cover both incoming and outgoing invoices tasks and how the e-invoice has been integrated in manner of both of these.

Also, we were able to get the viewpoint from the employee working with integrating the IT-systems in the different subsidiaries, which gave us insightful information about the different barriers linked to each location.

3.2.2.2 *Turkey*

In Turkey, the e-invoice project has been going on for two years. The subsidiary is a small subsidiary with only two employees working in the accounting department. We interviewed one employee at the Turkish subsidiary. This interviewee was the financial controller and was responsible for controlling and reporting according to local requirements, and being the link between auditors and the organisation. The interviewee was also responsible for finance, HR and office management administration at the Turkish subsidiary. This interviewee was the only one working at the e-invoice project in Turkey, and therefore, the only interviewee suitable for this research at this location. However, being the only member at the e-invoice project at this location, the interviewee had extensive knowledge and deep understanding of the e-invoice project in Turkey. Compared to the interviews in Norway where one interviewee had special knowledge for ingoing invoices and another for outgoing ones, the Turkish interviewee could cover both these aspects due to the local organisation culture being similar to small-medium enterprises instead of MNCs where every employee is very specialised.

3.2.2.3 *Germany*

In Germany, the e-invoice project has been going on for only five months. At the German subsidiary, there are five employees in the Accounts Payable Team and five in the General Ledger Team working with accounting related tasks. However, since the e-invoice project has only been going on for five months in this subsidiary, it is still not fully integrated. Therefore, only two employees at this site have been involved in this phase of the project. On the other hand, these two interviewees also had a deep understanding and extensive knowledge linked to the barriers of integrating e-invoice, like the interviewee in Turkey, since they were testing the system, finding the barriers and communication back to the HQ and suppliers about the barriers they faced when implementing the e-invoice system. The interviewees were one manager and one team member, which indicates that we covered both the manager's perspective and the team member's perspective at this subsidiary.

In Brazil, the e-invoice project has been going on for seven months. The Brazilian system is very different from the Norwegian one, and therefore the project faces major challenges in this area. Consequently, the project is still in the planning phase at this location. The interviewee from this location was an IT specialist, working with identifying the local needs and requirements, finding partners and trying to customise the e-invoice system to meet the local requirements in Brazil. The interviewee is a key player in the planning and integration of the e-invoice project in this location. Also, the interviewee has extensive knowledge about the Brazilian accounting and tax systems, which gave us insightful information about the barriers linked to the integration of e-invoice. South America, as a part of the Statkraft Group, was newly acquired, and is therefore very new in the Statkraft Group. Additionally, the subsidiaries in South America, including Brazil, are very small subsidiaries where most of the employees only speak Portuguese. These were factors contribution to that only one employee was interviewed at this site. Even though the project is not integrated in this area yet, we believe that the barriers linked knowledge sharing when integrating the e-invoice system in this part of the world is important findings that will broaden the view of the challenges of implementing new business processes as a global solution for the MNC.

In summary, the interviews were conducted with key players within the e-invoice project in the organisation of the Statkraft Group. The reason for choosing these interviewees is that we believe that more insightful information will occur if we interview people in different positions and at different locations. Therefore, we have interviewed both project managers, managers and team members, in order to get different viewpoints and information regarding how knowledge is shared when implementing a new business process. Furthermore, we have researched this in an international context, which is why we have chosen to also focus on foreign subsidiaries. The project we have researched, integration of e-invoice is linked to the accounting department, which is why we believe that the accounting department is a good match in order to investigate this project. However, we also found links to both IT and market operations, which is the reason for including interviewees in these departments also.

The interviewees represent all the involved people in the e-invoice project at this stage. This implies that the research is conducted with 100% of the population of the project, therefore we believe that the reliability is representative for this research. The findings at subsidiary level point out that each subsidiary faces barriers linked to tax issues, which implies that the findings at subsidiary level can be linked to each other and thereby validate the findings at subsidiary level. In addition, findings

from the HQ validate the reliability of the findings from the subsidiaries. Together these factors imply that the findings of this research conducted with the already mentioned interviewees are reliable, knowledgeable and gives a fair view of the employees working at both the HQ and in the subsidiaries.

3.2.2.5   *Interview protocol*

When preparing for the interviews, an interview guide was developed, see Appendix 1-4. The interview guide was developed in accordance to the theoretical framework, therefore the questions are structured in a methodical way and following the conceptual framework and process of knowledge sharing within business integration process. The interview guide was to a great help when conducting the interviews in order to keep a relaxed conversation and gain as much information as possible. Furthermore, after conducting some interviews, the interview guide was revisited due to new knowledge about the topic.

The interview guide was divided into six main topics: *Background, Project background, Technical barriers, Organisational barriers, Individual barriers* and *Contextual barriers.* Questions included in the *Background* focused on the tasks of the interviewees, their daily work and responsibilities. These questions were asked in order to get a broader understanding of who we were talking to and how they were related to the integration of e-invoice as a global solution for digitalisation within the MNC's network. In the *Project background,* we asked questions about the status of the project and how long it has been going on in each location. This was to deepen our understanding of the project, which phase they were in and their expectations about integration this new business process. After getting an understanding of the personal background of the interviewees and their thoughts about the project, we started asking questions about the barriers, including *Technical barriers, Organisational barriers, Individual barriers* and *Contextual barriers.* These questions were more focused and related to our conceptual framework, but still left space for the interviewees to elaborate on what barriers they faced when integrating a totally new digital invoice handling system. Thereafter, following the interview guide we asked to questions to every employee:

1. Do you see any other barriers for knowledge sharing when implementing the e-invoice system?
2. Do you have any suggestions for how implementing e-invoice could be done more efficiently and facilitate knowledge sharing?

These questions were asked in order to see if we missed some barriers that the interviewees faced, but also for the interviewees to emphasise what barriers they felt were the most important. Also, we asked for their suggestions, in order to understand the interviewees' different perspective and be able to compare it later on.

3.2.2.6   *Interview process*

When preparing for the interviews, we studied the Statkraft Group and its activities in order to create a better understanding of the interviewees' mind-set (Bryman & Bell, 2015). The interviewees at the HQ in Norway were contacted through email, and they got to choose what time was the most convenient for them. In the email, we recommended 16th-22th February, between 09:00-15:00. The email also included a brief introduction to our research topic, which gave them the possibility to prepare for the interviews and get a deeper understanding of what we were focusing on and therefore be able to think through the topic and hopefully be able to provide us with more relevant information. The brief introduction to our interview questions was outlined as follows:

- *Background:* contains questions linked to your specific roles within the organisation, to give us a better understanding of who you are and how you work
- *Project background:* contains questions linked to the status of the project and how long it has been going on in each location
- *Technical barriers:* contains questions linked to the technology side of the project and what barriers for knowledge sharing that you face linked to this
- *Organisational barriers:* contains questions linked to the organisational aspects of knowledge sharing within the e-invoice project and what barriers you face linked to this
- *Individual barriers:* contains questions linked to the personal aspects of knowledge sharing within the e-invoice project and what barriers you face linked to this
- *Contextual barriers:* contains questions linked to two aspects; local laws and requirements and language barriers.

However, no questions from the interview guides were sent out in advance. This was because of our intention to get as close to the truth as possible, and therefore we did not wish for the interviewees to reply with a rehearsed response to the questions. We asked each interviewee if they had any suggestions for more interviewees abroad that we could get in contact with. Therefore, the interviews with the employees abroad was conducted later. They were contacted through mail, and

got to choose the time most convenient for them, this happened to be between 1th-16th March 2017.

Each interview was conducted for 25-60 minutes. The big gap in the time difference was due to the interviewees knowledge about the project. Some were very specialised in their part and therefore only answered to the questions relevant to their responsibilities within the company. Others had a broader knowledge about the project, and therefore were able to elaborate more and gave us more insightful information. Although the interviews were short, they were well prepared as the interview guide contained good and precise questions. Also, the interview guide was revised after each interview and customised to each subsidiary, which allowed us to ask even more related questions. Therefore, there were no reason for more time during the interviews, and we believe the information we got following this time frame gave us very useful information. This timeframe gave the interviewees time to elaborate on what topics they found relevant as well as highlighted the importance of keeping to the topic and focus on what is important. Furthermore, we also kept contact with the interviewees after the interviews through e-mail, in order to ask follow up questions to dig deeper for the analysis.

The language used in the interviews, was English and Norwegian. Our first thought was to conduct all interviews in English, but after the three first interviews with the Norwegian managers, who all highlighted language as a barrier for knowledge sharing, we decided to conduct the remaining interviews in Norway in Norwegian in order to create deeper understanding and communicate more easily. Unfortunately, none of the interviewers speak German or Turkish, and therefore these interviews were conducted in English.

The further we got in the interviewing process, the more following up questions we asked. This was due to our deeper understanding of both the company and the situation regarding knowledge sharing. After each session, the questions in the interview guide were followed up and revised if necessary. All interviews started with a general background of the interviewees responsibilities in order to create a safe atmosphere for the interviewees and to get to know the person we interviewed. Due to the semi-structured approach of the interviews, all interviews were unique, implying that some areas were covered more by some interviewees and some topics were not covered.

3.2.2.7   Ethics

As a part of the preparation process, several ethical considerations and confidentiality issues were taken into account in the data collection process. A mutual agreement that the names of the respondents were to be kept anonymous in this report were established, however the position of the respondents in the company are revealed. Moreover, anonymous interviews open for the interviewees to speak more openly about the questions, in addition to increase trustworthiness and by this being able to come as close to the truth as possible. If the material is to be published, it is important to maintain privacy if so is preferred or requested by the participants of a study (Myers, 2013).

In addition, the interviewees were given information about the topic and asked for consent to record the interview in advanced. According to Myers (2013), informed consent is an essential ethical aspect of qualitative research, which should be followed.

3.2.3   Data analysis method

All interviews were recorded with an audio recorder, and then carefully transcribed. The transcription process allowed us to become more familiar with the data, feelings and enabled thoughts and impressions from the interviews to come back. The transcribing process acts as a tool for researchers to comprehend and grasp the respondents' opinions, thoughts and experiences (McLellan et al., 2003). The transcription process took place no later than 1-2 days after the conduction of the interview, while the interview was still fresh in our minds, which simplifies the analysis later on. Furthermore, during the transcription process, the interviews conducted in Norwegian was analysed deeper, since every word had to be translated in order to be understood. Besides, during transcription, it was easier to compare the answers, due to very careful dictation.

All transcribed interviews were entered into a qualitative analysis software called NVivo in order to code and classify the different findings. Coding and classification of data facilitates relation and interpretation of data to both the research questions and the theoretical framework (Ghauri, 2004). Moreover, using a software like NVivo makes the data analysis more systematic (ibid). In NVivo, every part of the interviews was examined, which allowed us to discover the most emerging themes and trends in the interviews. The coding categories we created in NVivo was based on the themes of the interview question, and the answers the interviewees gave us.

3.3 Qualitative assessment

According to Andersen and Skaates (2004), there are several ways of validating the findings of a study. In qualitative research, *internal validity* is often referred to as whether there is a good match between researchers' observations and the theoretical ideas they developed (Bryman & Bell, 2015). In order to ensure high internal validity, several approaches have been followed. The use of triangulation, which involves using more than one method of or source of data in a study (Bryman & Bell, 2015). The data in this research have been collected through interviews and observations of the surroundings. The observations further solidified the data collected through the interviews. Furthermore, people in different position and hieratical levels were interviewed, which provided diverse views and unbiased data.

External validity, is often referred to the degree to which findings can be generalised (Bryman & Bell, 2015; Yin, 2014). Case studies are often considered weak in terms of external validity, and we are aware of this as a shortcoming of this research. However, case studies can in other respects be generalisable, due to the case study's ability to describe and investigate mechanisms that generate an observed pattern (Tsang, 2014).

Reliability refers to the degree to which the study can be replicated (Bryman & Bell, 2015). To replicate a case study, where human behaviour is included can be problematic. Therefore, we assured the reliability by combining the case study perspective with a comparative study, by comparing how the knowledge sharing process within the integration of a business process between national borders. We would like to argue that this comparative approach to our case study strengthens the reliability of the study due to the fact that employees from three different countries were interviewed and which allow for us to compare and replicate our findings across national borders.

4 EMPIRICAL FINDINGS: THE CASE OF STATKRAFT

This chapter will provide the reader with an outline of the empirical findings of what barriers, linked to knowledge sharing within business process integration, which will be presented in accordance to the conceptual framework: contextual factors, technological barriers, organisational barriers and individual barriers. The empirical findings will first outline the structure of the company, and thereafter the project, in order to enhance the readers understanding of the theme.

4.1 Overview of the Statkraft Group and the project

4.1.1 *Company structure of the Statkraft Group*

The Statkraft Group are a Norwegian state owned company, and was founded in 1895, when the Norwegian state acquired its first ownership rights to a waterfall (Statkraft, 2017b). Today the Statkraft Group is a leading company in hydropower internationally and Europe's largest generator of renewable energy (Statkraft, 2017a). The Statkraft Group produces hydropower, wind power, gas-fired power and district heating (ibid), and is today a global player in the energy market operations through its subsidiaries in more 20 countries worldwide (Statkraft, 2017b) and 4170 employees (Statkraft, 2016).

Figure 3: Statkraft's business and locations (Statkraft, 2016, p. 10)

Due to various acquisitions through the years, the Statkraft Group now consist of 18 wholly owned subsidiaries worldwide, as seen in Figure 3 (Statkraft, 2015). In addition, the Statkraft Group consist of several consolidated companies, joint ventures, joint operations and associates throughout the world, and own 356 power plants internationally (ibid).

The position of the Statkraft Group today, is a result of growth over many years based on both Norwegian and international expertise and resources (Statkraft, 2016). The Statkraft Group are well positioned to participate in the transition of Europe to become more sustainable, by providing cleaner power production and new clean production in emerging markets. Furthermore, the company has established positions in several emerging markets with high growth in power consumption, with good opportunities for further development of hydropower. The Statkraft Group were one of the first investors in hydropower internationally and they have increased their investments in emerging markets since their first entrance in Laos and Nepal over 20 years ago. Statkraft's strategy is to continue strengthening the position as a leading international supplier of pure energy, building on their competitive advantages:

- *Unique assets and hydropower expertise*
- *Integrated business model and market expertise*
- *Market-oriented adaptable organisation*

In order to face the challenging changing market conditions, the Statkraft Group aim to continuously develop and improve their existing business, both in terms of minimising short and long term risk, and to maximise value creation (Statkraft, 2017a). This process includes ensuring that corporate activates are robust and can cope with a constantly change in the environment and technological changes (ibid). Therefore, this thesis will focus on an ongoing project for integrating an e-invoice system throughout the company in different countries in order to make the accounting processes easier, save costs, become more effectively and thereby more competitive on the global market.

4.1.2 *Overview of the accounting system*

The accounting system used within the Statkraft Group is an IT-system called SAP. This IT-system handles all accounting related tasks, and is an important tool for the employees' every-day tasks. Also, it is an important tool for the employees working with both incoming and outgoing invoices at the accounting department. However, there has been many changes during the recent years in

the Statkraft Group, as they are integrating a new digital solution for invoice handling. This has major impacts on the invoice flow of the company.

Team Member 3 at the HQ in Norway described the procedures of the invoice handling before implementing e-invoice as a new business process:

> *At the HQ, both the Norwegian and Swedish invoices are handled, and they receive approximately 300-400 invoices every day. Six years ago, in 2011, all invoices came in by post, and had to be sorted manually. This process included both sorting and scanning (Team Member 3)*

According to this interviewee, this sorting and scanning process took around two to three hours for two people every day. After scanning, all invoices were transferred to an IT-software called Readsoft Verify, for verifying. The verifying process included picking date, invoice number, invoice date, payment date, VAT number, amount, currency, and purchase order or reference person. Thereafter, all invoices were transferred to the accounting system SAP. In SAP, a portal called Monitor stopped the invoices that had errors such as missing reference person, wrong purchase order, missing bank account, etc. The old process is summarised and visualised as in Figure 4.
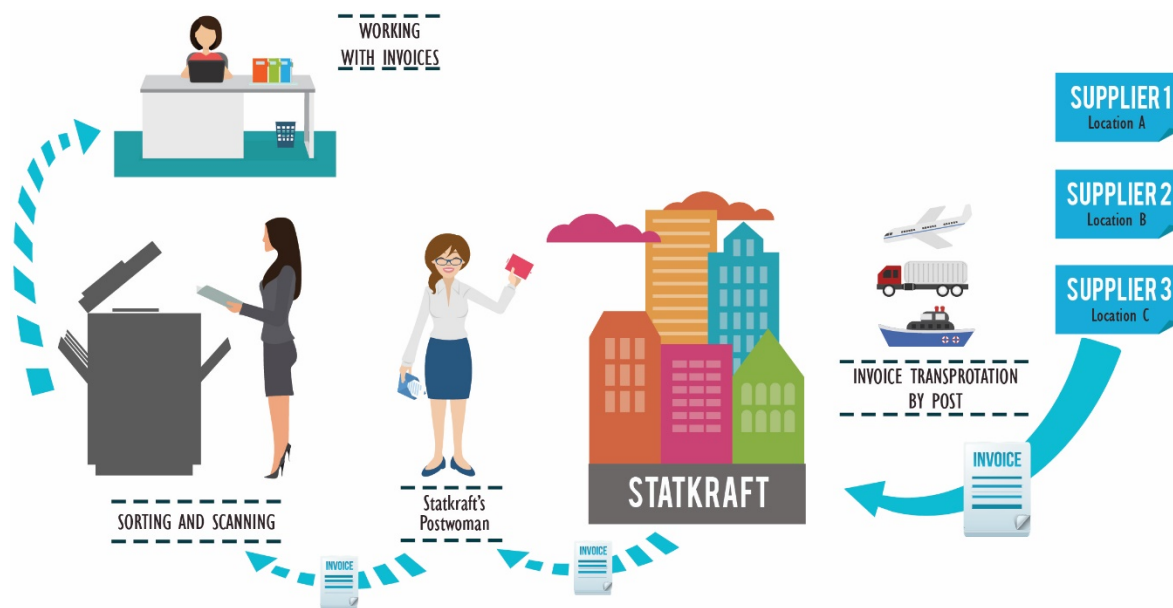
Figure 4: Old invoice flow process (Authors' own figure)

In 2010, an e-mail address for incoming invoices was established. In the beginning, the invoices were printed out and put in the same pile as the invoices coming via post, but gradually the opportunity opened to send PDF files directly to Readsoft Verify.

After integrating the e-invoice system, the flow of invoices is now completely different. In the beginning of 2017, most of the invoices to the Swedish subsidiaries within the Statkraft Group are

received as e-invoices. Approximate 30 invoices are received by post or e-mail daily. For the Norwegian subsidiaries, approximate 100 invoices are daily received by e-mail and sent directly to Readsoft Verify. 60% of the Norwegian invoices are received as e-invoices, 50% of these goes directly into the accounting system SAP, and 50% stops in the portal Monitor for corrections. These corrections are mostly linked to reference person or purchase orders. There are still some invoices that are received by post, however, the handling process of these invoices are now only 30 min for one employee. The e-invoice system has totally changed the invoice handling process, as today, the time spent for handling post and e-mail invoices is one hour in total. The e-invoices are received as they arrive, so the main tasks now are to check Monitor in SAP and push the invoices that stop. The new process of handling invoices is explained as in Figure 5 below.
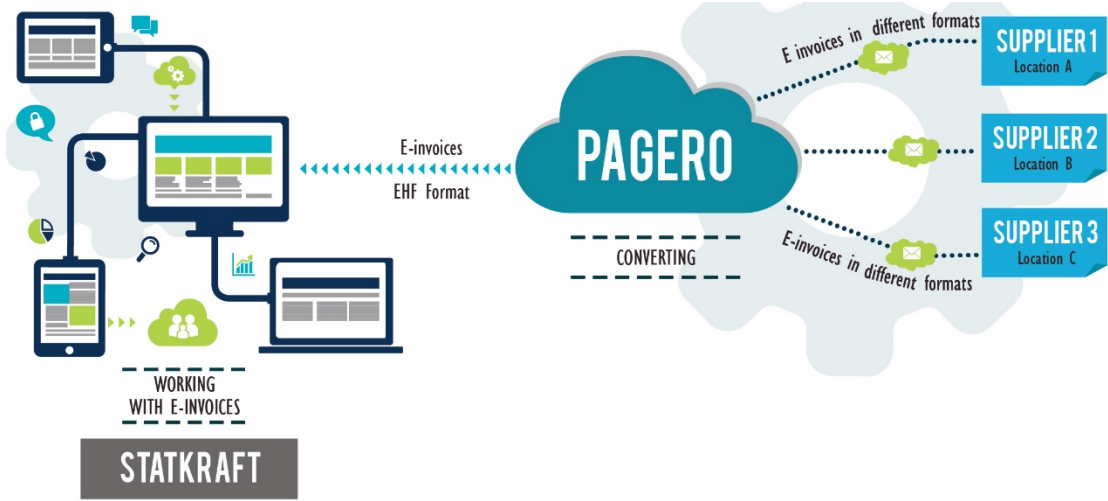
Figure 5: New invoice flow process (Authors' own drawing)

With the integration of the new e-invoice system, the invoices now arrive in SAP at the Statkraft Group the same day as they were sent from the suppliers. This process is the same for the outgoing invoices. There are some small differences linked to how the invoices are handled at the different foreign subsidiaries, however the process is almost the same as the Norwegian process described over. This implies that all subsidiaries will eventually face the same changes in their work when implementing the e-invoice system.

4.1.3 *Toward a digital solution – implementing a total digital invoice handling system*

As a part of the internationalisation strategy of the Statkraft Group, the company is focusing on lifting accounting to become a global unit, working together across national borders, working with the same systems, working in the same way and cooperating. Today the accounting departments around the world are working independently with little knowledge sharing across national borders.

The overarching goal is to become more like one unit not limited by national borders in the future. As a part of this, the Statkraft Group are integrating an e-invoicing system, to make the invoice-handling in every country more similar and more efficient.

The e-invoice project started in 2012. The company started focusing on Norway since the government sent out a request to the company to use e-invoices. The company launched the e-invoice system in both Norway and Sweden first and then in the end of 2015, the company started with Turkey. It took around one year and three months for Norway from the launch to be up and running. For one single country, it takes around six to nine months, from launching the system until it is up and running. The project is going on and launching country by country, according to Project Manager 1:

> *We have three countries on track now: Norway, Sweden, and Turkey; Germany will be the 4th, and let's see what will happen, the UK is probably the next country. (Project Manager 1).*

The Statkraft Group had a breakthrough in Norway the last year in 2016. In the beginning of the year, 40% of the total invoice volume were e-invoices; however, the number increased to more than 60% in the end of the year. The reduction of work is emphasised by the Accounting Manager:

> *If you ask the scanning team, they will tell you their pile of incoming paper invoices are shrinking. There are still some work to do, but we have reduced a lot of manual work handling the invoices. (Accounting Manager).*

The invoicing process is supposed to be faster, more efficient, be more accurate and end up with the right recipient with e-invoice process. Before the invoicing was done through paper invoices, they had to print every invoice and send it by post. Then the company introduced PDF invoicing, and the process was much easier. However, the PDFs must still be processed manually into the system, which is time consuming. Implementing e-invoice resolve the problem, as agreed by Team Member 2:

> *Whether we send invoices as PDF or EHF, it doesn't really matter for us. The process is the same for both PDF and EHF; but for the recipient, EHF invoices will save a lot of time. Therefore, I believe that the aim of this project is to streamline procedures in order to make the invoicing more accurate (Team Member 2, our translation).*

This project has acquired a high agenda up at the CFO level, and the top management of the organisation is asking how many percentages of all invoices are now e-invoices. This is due to the link between the percentages and the work load in the accounting team. As the percentages of e-invoicing are going up, the need for manual input goes down. At the same time, the quality goes

up, as the human factor is less present, and the room for misinterpretation decreases. The Accounting Manager emphasised the advantages of new invoicing process:

Furthermore, we don't need to handle paper invoices, including storing them, which is now done automatically in the system. This implies that we can free our sources to do other tasks within the organisation. Basically, integrating these processes is an initiative to get a more efficient organisation (Accounting Manager).

4.2 Barriers of knowledge sharing

The following section will present the empirical presentation of the barriers for knowledge sharing within new business process integration. The barriers will be grouped in accordance to the conceptual framework presented in Figure 2 above. The section will start by presenting the *Contextual factors,* and continuing with *Technological barriers, Organisational barriers* and *Individual barriers.* As some of the barriers are influenced by each other, they are discussed under one category of barriers but might also cover another category. In order to prevent repetition, we have chosen to discuss the barriers under the category we found most suitable, even though it might also fit under another category.

4.2.1 *Contextual factors*

This section will present our findings related to the contextual factors in the locations where Statkraft is implementing e-invoice as a new business process. The locations researched is Norway, Germany, Turkey and South America which contains Chile, Peru and Brazil. The findings will be linked to how *Local requirements* and *Language* affect the knowledge sharing process in the implementation of e-invoice.

4.2.1.1 *Local requirements*

The findings linked to the local requirements will be presented in the following sections. There are different local requirements for the HQ and each foreign subsidiary. However, the findings indicated that there were some similarities linked to the barriers; both storing of information linked to the e-invoices and complex tax reporting systems were found in almost each location.

In Norway, the government requires all companies to use EHF format, which is based on a global standard for e-invoice, UBL. However, if the Statkraft Group implement EHF as a standard format in its global system, there are always some discrepancies while applying in other countries. Statkraft faces the difficulties because of different local requirements and laws that force them to adjust the

system to fulfil those requirements. The IT Team Member 1 highlighted this as one of the biggest challenges:

> *There is no common standard for e-invoice globally. This is different for all countries, and therefore we need to make customised templates for all countries where we decide to integrate the e-invoice system. It is our greatest technological barrier (IT Team Member 1).*

While launching the project in Turkey and Germany, there were some requirements in both countries that the HQ do not face in Norway or Sweden. Existing knowledge are thus stuck at the HQ and new knowledge has been spontaneously created. This is confirmed by the interviewees, as they stated that they needed to adjust their IT applications as well as some operational processes, as mentioned by Project Manager 1 below:

> *We have experienced that the local requirements in both Germany and Turkey confront them. The local law is different especially in this area when we are talking about the invoices, both from and to the Statkraft Group. There are local requirements that we have to fulfil. (Project Manager 1).*

In Turkey, the team already has knowledge about e-invoicing, since most of the big Turkish companies are using an e-invoice system. Turkish companies are obligated by the law to use the e-invoice system unless their gross revenues or asset revenues are under a threshold. However, in order to issue or receive e-invoices, it is obligated that the counterparties such as vendors and customers also use the e-invoice system. Otherwise, the Turkish subsidiary is not able to send out e-invoices to their suppliers, and thereby have to use the old process. At the moment, Turkey do not face barriers linked to this, as most of its vendors are using the e-invoice system. However, the subsidiary confronts some difficulties related to the requirements from the Turkish government that it is forced to follow. As a consequence, technical problems occur for the HQ IT-team when they need to adapt to the requirement of the Turkish government. The situation becomes more complex as it requires the HQ IT-team to develop an understanding of the local context in order to solve the problems. The Manager Turkey stressed the struggles the team had encountered when launching the project in Turkey:

> *In Turkey, we have our own invoice number, that is generated by the government that we have to follow. In SAP, Norway has one type of invoice number arranged and we have another, so both sites have to handle that. Everything in Turkey needs to go through government before we can send the invoices further (Manager Turkey).*

The case in Germany is very similar to the case in Turkey, as they also struggle with the local requirements. When the e-invoice project where launched in Germany, the team found that there were stricter regulations on traceability in Germany than in Norway. In Norway and Sweden, the Statkraft Group only need converted files from Pagero into SAP. However, with the law in

Germany, the system needs both converted files and original files. The main problems were highlighted by the Team Member Germany as follows:

> *The main local requirement is linked to the tax authority here in Germany that requires us to store the original files received from our vendors. It means that the files imported to SAP from Pagero need to be exactly the same as the file received in Pagero from the vendors. No changes are allowed in that file (Team Member Germany).*

The German government demands that companies need to store all the information from the vendor's invoices. In the Statkraft Group's accounting system, when a vendor sends a file to Pagero, Pagero will convert this file into the chosen e-invoice format. The local requirements in Germany demands the company to archive both the file sent from the vendors to Pagero and the final e-invoice that Pagero sends to Statkraft. The requirements set out that both these files must be easily accessible. The IT-team have solved this by attaching the file from the vendors to the e-invoice that the Statkraft Group receives from Pagero. This means that in the company's accounting system, the e-invoice will have one side with understandable information, and another side with unreadable information. The original files are needed to be archived for 10 years. This situation is a drawback for the future integration. New knowledge was created during the process and the IT department face a big challenge to adjust to fulfil the local regulations. The Accounting Manager at the HQ emphasised that the local requirements in Germany create more work for them and make complexity for the IT part:

> *In Germany, we need to save the original file. So it is like an additional requirement which means we need to do some extra coding and save the unchanged version of the file (Accounting Manager).*

In South America, the implementation of e-invoice has been going on for seven months in total, and started in the summer of 2016. The Statkraft Group is implementing the e-invoice system in Brazil, Chile and Peru, however, as most South American countries follow Brazil, the implementation process is therefore focused on Brazil, as explained by the IT Specialist South America:

> *Peru has since 2016 local requirements that forces them to implement e-invoicing. In Chile, e-invoicing has existed for a long time, they have the oldest requirements on e-invoicing in South America. However, Chile is a very small part of Statkraft, and therefore, we have not seen it as a major challenge, as they are already using some kind of e-invoicing. Our focus has been on Brazil for now, and then we will re-focus on Chile and Peru later (IT Specialist South America).*

In Brazil, the Statkraft Group use the accounting system SAP, which as a pre-defined plan for how to resolve inbound and outbound invoice flow. However, like the German subsidiary, Brazil faces some barriers linked to the tax rules, which are very complex and very different from Europe. They

do not have VAT in Brazil, but something that is called ICSM, which is completely different from VAT. Each state has its own ICSM percentage, which make the system very complex and therefore the process of sending invoices between states in Brazil becomes more complex. The main point, is that each state has a public agency called SEFAZ. When sending an invoice to a customer, the Statkraft Group need to send all the information to SEFAZ first, in order to get a control code in return. This control code is a bar code. When Statkraft receives this bar code, they are able to send an invoice in XLM- or PDF-format to the customer. The invoicing can only be performed after receiving this control code form SEFAZ. The same process needs to be done for the incoming invoices, but then the suppliers need to perform this process. The IT Specialist South America emphasised the difficulty:

> *We face a lot of new challenges in South America that does not exist in Norway or the rest of Europe. We have never encountered anything as complex as Brazil, it is completely insane (IT Specialist South America).*

The principle for integrating e-invoice is the same as Brazil for both Chile and Peru. However, South America is still a huge challenge. It is completely different and cannot be compared to the European standard. The learning process is somehow challenging and time consuming. The IT Specialist South America highlighted the importance of understanding these requirements:

> *It is not enough that the subsidiaries in South America understands and meet the local needs and requirements, also the HQ in Norway need to understand the invoice flow in order to fully meet and implement the local requirements in the new business process integration (IT Specialist South America).*

The findings point out that there are a lot of different local requirements that must be meet in each location in order to fully implement the new e-invoice system. The old process was almost similar in each location, but, when implementing the new e-invoice system, the local requirements became much more tangible as the system must be customised to each location. This implies that the subsidiaries had a more autonomous way of working before, as they could easily adapt to the local requirements at each location, without having to consult the HQ for help. Now, the foreign subsidiaries have to work less autonomous as they are required to use the e-invoice system, which has to be customised with help from the HQ IT-team. However, the findings point out that the barriers linked to the local requirements are related to each other across national borders. Both Turkey and Germany faces challenges with the storing of e-invoices, even though it is not exactly the same, it is linked to the same problem. Also, both Germany and the South American subsidiaries faces challenges with taxes. Even though these challenges are completely different, it is an indication for the HQ there are countries with more complex local requirements than Norway

and Sweden, which they can be more prepared for when rolling the e-invoice project in more countries. This is also seen, as the integration of e-invoice in South America starts with Brazil and then continues with Chile and Peru, where they will be able to replicate most of the practices adopted in Brazil.

4.2.1.2 *Language*

It was gathered throughout the interviews that the Statkraft Group have undergone a process improvement in the last few years which had been felt and seen, and was thus highlighted by most of the interviewees. The Statkraft Group are now more globally interconnected and thereby aims to create an integrated platform for the different accounting systems within the Statkraft Group. English has become more important and gradually developed into the corporate language. Recently, English was generally considered as essential in terms of collaboration and communication among employees and units. The common corporate language was also perceived as a vital means to knowledge absorbency. The vast majority of the interviewees who work under the project have quite extensive experiences in working in English and there were only a few employees that were not familiar with English as a corporate language. However, language still creates barriers for communication among people in the Statkraft Group, as emphasised by a Project Manager:

> *Language is our main barrier. Although everything is documented in English, English is not our mother tongue, which leads to misunderstanding (Project Manager 1).*

Some managers also emphasised their concerns about the future of sharing knowledge with countries where most employees are not fluent in English. This was recognised as a major problem, due to translating issues. Thus, the information may not be shared smoothly and correctly. Regarding technology and process integration, the knowledge can easily be misunderstood if the translators do not have enough solid knowledge about the processes. The Accounting Manager said about own experience in Brazil:

> *Language was one of the big barriers when I was in Brazil and introduced myself and our project to the accounting team there. At least 10 of them needed to translate into Portuguese. They couldn't even say their names or present their work tasks (Accounting Manager).*

Interviewees at the subsidiaries in Germany and Turkey, however, did not consider language as a main barrier, as quoted below. They agreed that language in some parts can make challenges for their work. For instance, they need to translate their emails or documents into Turkish or German.

However, based on our observation, we found that their English is at a proficient level. This implies that they have full ability to understand English and use it smoothly.

> *Language in somehow difficult of course. There are some templates or documents within the MNC's network that we have to translate into Turkish since our invoices are in Turkish, so we translate some items from English to Turkish (Manager Turkey).*

However, the employees at the HQ have different viewpoints. They believed that language is a main barrier for knowledge sharing since they found it difficult to find the right words or right expression to share the knowledge they possess. The difference in language can, therefore, also create barriers in constructing social network with people in other locations. If an employee is not fully fluent in English, the person will hesitate contacting foreign subsidiaries. They stated that it was much easier to communicate with those who speak the same language, and this also applied in relation to contact, as it is much easier to make contact with those who speak the same language. A Team Member mentioned the difficulty of vocabulary:

> *The language is difficult as we use different words, which make it difficult to understand everything. This has to do with the vocabulary, as you may desire to talk to someone with knowledge in your area, but it can be a challenge to communicate in another language, and thereby the knowledge is not shared (Team Member 2, our translation).*

This thus demonstrates that language can create barriers in meetings where English is the language of communication. One of the employees emphasised that due to the variation in level of English among the employees, some faced difficulties when meetings were held in English. The situation was that the employees did not like to talk English and when they had the meeting in English, not all of employees could understand. Hence, the information can be distorted and sticky to share. The Team Member 3 emphasised the language barrier within the department:

> *We face language barriers. They are reluctant to talk in English and receive an English phone call. Their English is not very good. (Team Member 3).*

The miscommunication between people in different units creates frustration for some employees at the HQ. The fact is that the differences of language can create extra work and force people to devote more time in the beginning of the project phase. This situation is highlighted by an employee who elaborated on the language difference barriers:

> *Since others are going to use the same system, we need to translate from Norwegian to English. Until now, we have been making the process descriptions in Norwegian, as their purpose is to act like a tool for us at the HQ. However, they now have to be translated into English as more foreign subsidiaries are integrating e-invoice. It takes more time for me to explain and to wait for people from the other*

locations for feedback and adjustment. Sometimes we misunderstand each other, and that is stressful (Team Member 3).

The findings linked to language highlight that language highly affect the knowledge sharing process when implementing e-invoice as a new business process. As discussed in the Methodology of this research, we chose to interview some of the Norwegian interviewees in Norwegian due to the fact that they could communicate more easily in their mother tongue. It is clear that the language skills affect the knowledge sharing process, especially when working with people located across national borders. Also, the findings imply that the HQ found this as a major barrier and the subsidiaries did not agree. This might depend on the fact that the HQ is Norwegian and therefore tend to be less willing to accept English in their daily tasks, where the subsidiaries must accept English as a organisational language as they do not speak Norwegian. The language differences are also elaborated further in later parts in these findings. Language affects and is somehow a driving factor of all barriers – technological, organisational, and individual barriers.

4.2.1.3   *Summary of contextual factors*

Based on our findings we found that the *Contextual factors* consists of both local requirements, such as local laws and regulations at subsidiary locations, and language. The local requirements are divided into different barriers linked to the local law of each subsidiary country. We found that Turkey are obligated by the law to implement the e-invoice system, and send the invoices through a governmental portal. The findings also imply that both Germany and Brazil has strict tax laws, which is a barrier for the IT-department, as they need to customise the system in order to meet the local laws of these subsidiaries, regarding storing of the e-invoices and how to issue the e-invoices.

The barrier linked to the *Contextual factors* are language barriers. Here the findings point out that the Statkraft Group have incorporated English as a corporate language, however, the findings imply that the level of English varies a lot within the MNC. As some parts of the MNC do not speak English at all, this becomes a barrier for integrating the e-invoice project in those parts of the MNC. Furthermore, we found that the level of English among the HQ employees did not always meet the requirements of being fluent in English, which also creates barriers for knowledge sharing and information flows. However, the findings point out that even though people speak the same language, misunderstanding still occurs, which again emphasises the value of clear communication within the knowledge sharing process.

This section will present our findings related to technological barriers and the knowledge sharing process. We have identified four main barriers; *Technology partner, Sharing platform, Openness to technology and Centralised IT.* These barriers will be presented and discussed separately, followed by a summary which aims to create a better understanding of the barriers.

4.2.2.1   Technology Partner

In the Statkraft Group, SAP is used as the main accounting system throughout the whole organisation, including foreign subsidiaries. When integrating the e-invoice project, the Group has appointed Pagero as a partner for handling their invoices in Europe. This means that all incoming invoices are sent to Pagero, and Statkraft receives the invoices through Pagero and not their customers. Therefore, there is a need for a smooth link between Pagero and SAP. However, the employees at the Statkraft Group found that it exists some problems when using both of these systems. They have to check Pagero's system for the incoming invoices and then they have to compare the database of invoices to what they have in SAP. Sometimes, there are invoices missing, and then they have to search for it through Pagero's portal in order to find them and get them into the system. A Team Member had a commented about the current system:

> *When Pagero makes mistakes, I have to change these mistakes when Statkraft receives these e-invoices, as they will stop in SAP. This is a technical barrier that must be corrected (Team Member 1, our translation).*

The Statkraft Group is an international company and therefore have operations in different parts of the world. This implies that there exist some problems, with regard to their main partner in the e-invoice project, Pagero. Pagero do not have operations in South America, where the Statkraft Group wishes to integrate e-invoicing the coming years. Therefore, the Statkraft Group need to find another partner in this part of the world to collaborate with. Using different partners in the project may also cause a risk of incompatibility in the integrated platform. The Statkraft Group are opening pre-phase discussions with a potential partner in Brazil and Peru, and soon in Chile. However, the partner is completely different from Pagero that the Statkraft Group uses in Europe. The only thing they have in common is the flow of XML-files. The differences are also related to the local requirements as mentioned in previous part and further confirmed by the IT Specialist South America:

> *In South America, the partner is more linked to the different tax requirements in each country. In Europe, Pagero's job is to translate the invoices into XML-files. However, in South America the method used is completely different, and linked to taxes (IT Specialist South America).*

Another barrier is that the mismatch between two systems can cause problems that leads to much more work for the employees. Using different software can cause confusion for the employees as they do not understand the reason when an error in the technology they use occurs. A Team Member stated that it was very strange that sometimes the invoices suddenly stopped due to some problems with the connections between Pagero and BisTalk, then there were some consequences:

> *It took around two months to restore this the last time it happened. Of course this resulted in a lot of extra work, I had to go back and forward all invoices manually to the recipients (Team Member 2, our translation).*

Also in Turkey, they have some problems with the invoices having to go through different portals. Their problems are more linked to the e-invoice system than their partner company, Pagero. In Turkey, all e-invoices have to go through a governmental portal. In order to send out e-invoices to their customers, they have to make sure that their customers are using the same system as they do. As today, this is not a main problem as the Turkish subsidiary is not so big, but in the future, if it expands and gets more customers, this might lead to much more manual work in order to ensure that their invoices are sent out right. The Manager in Turkey provided more details about the problem:

> *Mainly all of our customers and vendors in trading companies are obligated to use this system. Also, we are not issuing many invoices, therefore we do not experience problems with having to send the invoices through different portals. But if we had many customers, of course that would make a huge difference, since we then have to check if these customers are using the e-invoice system or not. If it is not, you should manually do this, otherwise you should do this automatically with the e-invoice system (Manager Turkey).*

As mentioned in the *Contextual factors* part, the local context has a strong impact on other factors including technology. A Team Member in Germany elaborated deeper on the problem he faced with the technology partner due to the differences in the working process across borders as below. Thus, it takes time for Germany to learn and adjust to work smoothly with another technology partner.

> *The problem we figured out is that the setup used for sending the invoices from Pagero to SAP is in the Norwegian set up, which is for example responsible for an error occurring that the credit notes stops in our system. In Norway, they manually check each credit note to find the matching invoice, but here in Germany we don't do it that way (Team Member Germany).*

Our findings point out that there are several problems linked to using a partner company to translate each invoice into the right format for the Statkraft Group. As the link between Pagero and SAP does not always run as smooth as possible, we see that the employees lack of trust in the technology. Furthermore, they have to check the Pagero portal for invoices that were supposed to go directly into their accounting system SAP, making the process more time consuming. Problems regarding sudden stop in the transferring of invoices between SAP and Pagero increases the employees lack of trust in the system and also takes focus of other important work related tasks. The findings point out that all employees working with these systems clearly faces problems related to the link between SAP and Pagero, therefore we believe it is one of the major technological barriers.

4.2.2.2   *Sharing platform*

The Statkraft Group uses a platform called SharePoint to share documents and knowledge throughout the Group. The purpose of SharePoint in the integration of the e-invoice project is that all the documentation, user guides and IT guidelines are visible and accessible through this online platform which facilitate knowledge sharing not only within the HQ but also among the different departments across national borders who work at the project. This SharePoint site was created by the IT-team and has been in use for a while. All the managers of the project have positive views about the effectiveness of using SharePoint to facilitate knowledge sharing across global departments:

> *In Statkraft we use a system called SharePoint, where we collect all information about the e-invoice project, like templates and work descriptions. These are available for all the members of the project. Everyone including both the employees at the HQ and the foreign subsidiaries have access to it and everything is written in English in order for everyone to understand (Project Manager 1)*

Although all the managers at the HQ in Norway believe that SharePoint facilitates an effective and convenient knowledge sharing process, not all employees within the Statkraft Group recognise this and uses SharePoint. They argued that they did not really understand the purpose and the advantages of using SharePoint and was satisfied with the way they currently share their knowledge. The employees often use email for communication and they rarely use SharePoint since they do not know how to use this. They think that it is hard to understand and they also find it messy and not structured to use. They do not even know that SharePoint is used for the e-invoice project. The company organised introduction sessions to SharePoint some years ago for employees in order to open their understanding and ability to take advantage and use SharePoint; however, not many

employees joined the sessions. A Team Member emphasised the lack of information about using SharePoint:

> *I haven't used SharePoint for the e-invoice project, no one knows how to use it, except how to access the vacation list (Team Member 1, our translation).*

Even the persons in the technology team did not use SharePoint as expected by the managers. One interviewee stressed that email was the most common way to share knowledge in the project:

> *We mostly use mail for communication throughout this project. However, I believe that there are some Excel sheets that are placed in SharePoint, but I'm not completely sure about these documents. I communicate with the project management in at the HQ in Norway and the different managers at the global accounting centres within the Group where we integrate e-invoice (IT Team Member 1).*

However, the employees have a desire to use SharePoint more efficiently, but as long as not everyone is using SharePoint, the system does not facilitate effective knowledge sharing throughout the Group at the e-invoice project. Also, the structure and content of SharePoint needs to be revised often, based on the suggestions of those who are using it in order to be able to store the information and make it more accessible and easier to find. A team member stated that the person believed SharePoint would be fully implemented in the near future, however, the time was yet not known.

> *Now we have figured out that if we work in the same document it is very useful to have the document in SharePoint, then we can find it in the same place and share with each other. I believe that in the future, we will have a SharePoint site for all the accounting departments across national borders. We will soon become global and work together (Team Member 3).*

None of team members or managers in Turkey and Germany mentioned about using SharePoint. They often use direct communication such as video conference or e-mails. However, it may cause complexity in the knowledge sharing process, as employees struggles to find the right person to contact in order to increase their knowledge stock. It is much easier to access the guidelines or standard documents available in SharePoint. According to the Manager Germany, the subsidiary contact directly to the project managers:

> *We use e-mails, not SharePoint. We communicate with Project Manager 1 and 2 and IT Team Member 1 (Manager Germany).*

Alongside the Turkish and German subsidiary, SharePoint is not used in South America, as stated by the IT Specialist South America below. However, the employees from the HQ are traveling to the subsidiaries in South America, in order to ensure a more secure launching of the e-invoice system in this location

The communication with South America is mainly via email, we do not use SharePoint (IT Specialist South America).

It is clear that the project managers and the employees have different meanings of how knowledge is shared within the integration of e-invoice. The managers highlight that SharePoint is used for sharing knowledge, here they put all information regarding the e-invoice project. However, the employees do not recognise the use of SharePoint, they share their knowledge via e-mail. This indicates that there is a poor link between the project management and the employees, which results in that valuable knowledge might be lost due to the lack of knowledge about where to find the right information. Furthermore, this also indicates that much more time is used to share knowledge via e-mail than searching for the knowledge at SharePoint. For example one employee in Turkey might ask one employee in Norway how they solve a problem. Thereby, the Norwegian employee has to spend valuable time to try to explain by e-mail how to solve this problem. Instead the Turkish employee could check SharePoint where the project management has made sure that templates and task descriptions are provided.

4.2.2.3 *Openness to technology*

Most of the interviewees at the Statkraft HQ in Norway agreed that among the Nordic countries, people as well as organisations are more open and embracing to new technology than in other countries. They mentioned that both Sweden and Norway was very early to integrate electronical banking and mobile banking as new business processes in the organisation. Keeping the trend of fast digitalisation in the Nordic countries, the implementation of new systems and new technologies in these countries is much faster and easier than implementing the same business processes in other locations. Other countries, which are also influences by complex legislation frameworks, do not accept new technology as easy as the HQ does. They prefer to keep their current methods and have higher uncertainty avoidance toward integrating new business processes. As a consequence, implementation of new technology in different locations are sometimes challenging. The Accounting Manager emphasised the difficulties as follows:

> *In other countries, there is an uncertainty in implementing new business process related to local legislation, for example tax legislations. The legislation always has very serious consequences for accounting, therefore they prefer to do it the regular way instead of implementing new business processes (Accounting Manager).*

The managers at the HQ emphasised that it is difficult to share knowledge across national borders due to the fact that the people working at the subsidiaries have higher uncertainty avoidance and therefore are not so open to new technology:

There are a lot of obstacles in Germany because of their resistance to change (Accounting Manager).

However, in South America, the situation is different. They experienced that willingness of the Brazilian government to change was huge, and therefore, the HQ in Norway were not able to keep up with the changes. Hence, the IT team constantly faces barriers linked to technology as highlighted by the IT Specialist South America:

The technology becomes a barrier, when it need to constantly adapt to new local requirements. The authorities' willingness to change is huge and they frequently change the tax and fee system, which results in a need to upgrade our technology systems at the same pace, which is impossible for us (IT Specialist South America).

Some manager also assumed that the willingness to use technology also depended on the knowledge level of new technology. Since people not always understand how a system works, they might be afraid of starting to use it, especially in the integration phase of the project. This was seen when integrating the e-invoice system into both Turkey and Germany as stated by two managers in two countries:

In Germany, there are a lot of obstacles because they don't understand the technology with the accounts payable team and they don't understand exactly how it would work (Accounting Manager).

I think in Turkey the problem is that there is a new system, therefore there are of course some obstacles with a new system (Manager Turkey).

In Germany, the interviewees emphasised that because of the differences in technology development and local requirements, it was difficult for them to find vendors or customers who have integrated the e-invoices system. Hence the integration process of e-invoice was delayed and therefore the knowledge sharing between Germany and the other units is stagnating at this stage in the process.

For example, it is very hard to find German vendors that can send e-invoices to us (Manager Germany)

Moreover, they also emphasised that everything is new for them and they need to learn, as quoted by the Manager Germany below. The learning process, however, takes time and it also depends on the other factors such as technological support and dual communication. Nonetheless, the German subsidiary emphasised the lack of knowledge about the new business process as one of their main barriers.

We face barriers such as lack of knowledge of the new process (Manager Germany).

The findings indicate that there are differences in openness to new technology depending on location. It is clear that the HQ in Norway is far ahead the subsidiaries. However, this depend on different factors. The reason for why the HQ in Norway decided to implement e-invoices is due to a requirement from the authorities. Also, we found that in Norway they have been using PDF invoices for some years, which make the transition to e-invoices smaller than for Germany and Turkey who goes directly from paper invoices to a total digital solution. In addition, Turkey is obligated by their national authorities to use e-invoicing and send it through a governmental portal, which make them more willing to adopt the new e-invoice system. However, Germany is not obligated by their national authorities. Also, they highlight that there are very few customers that are able to send e-invoices, and therefore they do not see the need for this system, which make them more reluctant to change.

4.2.2.4   *IT centralised*

The IT department, which are responsible for all IT activities within the Statkraft Group is centralised at the HQ in Norway. Some managers believed that the employees do not need any knowledge about IT. If any IT problems occurs, the employees are required to report this to the project managers, and they will resolve this together with the IT department. Furthermore, no further notification is made to inform the employees about whether the problems are solved or not. These communication problems occur both at the HQ and in foreign subsidiaries. The managers also emphasised that this is not something that the employees have to learn:

> *The IT department is centralised and serves all the companies within the Statkraft Group. There is not so much learning for other foreign subsidiaries (Project Manager 2).*

However, the viewpoints from the subsidiaries are different. As mentioned several times in the previous parts, both Turkey and Germany have local legislations that differ from the Norwegian legislation. This opens a need for adjustments or changes in the IT system to be able to meet those local requirements. Since all the IT employees are located in Norway, they lack local understanding to make the system suitable for each country's local requirements. Statkraft's partner, Pagero, has assigned a Norwegian IT consultant for the Turkish part of the project. However, Turkey have some legal requirements that the Norwegian IT-consultant from Pagero is unfamiliar with. Pagero also has some local employees in Turkey, however they are not assigned to the Turkish part of the e-invoice project, hence the problem is that human resources that are available lack of knowledge about the local requirements. This problem is highlighted by Manager Turkey:

> *What we face as the major technical problem, is linked to the partner Pagero. Our main problem is that the IT-consultant assigned to the Turkish part of the project does not have any experience or knowledge about the legal requirements of the Turkish e-invoice system (Manager Turkey).*

This is thus confirmed by the German interviewees as the following quote. They experience the lack of local IT consultants, who have knowledge and experience about the local requirements. The problem is mainly due to tax, which is a major part that needs to be fixed in the final phase of this project. The requirements from the tax authority in Germany, referring to the storing of information, are different from the requirements from the Norwegian tax authorities. This lack of local knowledge creates complexity and barriers to fully implement the e-invoice project.

> *We have the same problem as Turkey faced. We do not have a local Pagero consultant who has experience about the local requirements here in Germany. There have to be some work done from both Pagero and the IT department in Norway, because of these local requirements from the German authorities (Team Member Germany).*

In fact, one of the project managers mentioned the importance of adjusting the technological systems to be compatible to the local requirements in the foreign subsidiaries. However, the person did not mention anything about allocate employees to the subsidiaries locations:

> *The technological part is working fine but we still need to change some technological pars to implement the local requirements. E-mail is the central part of sharing knowledge. Since the start of launching the project, we do not go there to teach them, we just communicate everything online (Project Manager 1).*

The lack of knowledge among the employees within the project also occurs at the HQ. The employees lack of knowledge about the technology, hence they cannot understand where the problem is and how to report it to the IT department, as highlighted by Team Member 2:

> *The problem might be that people who struggles with a problem don't know what the problem really is. Then the challenge is to find the right words to describe the problem (Team Member 2, our translation)*

All the interviewees believe that the IT-support is good, and the fact that it is centralised at the HQ in Norway is not highlighted as a barrier. However, the problems are linked to the IT-support's understanding of the local requirements in the subsidiaries. The people at the HQ in Norway believe that they get the support they need, which might depend on the centralised location of IT. On the other hand, Germany and Turkey both highlight that there are local requirements that must be fulfilled, which requires adaption and customisation of the IT systems. Since the IT-support is centralised in Norway, the subsidiaries experiences lack of knowledge about their local requirements from the authorities in each country. This make the subsidiaries more reluctant to

the new business process, as they need to know that the local requirements are fulfilled before totally integrating the business processes.

4.2.2.5   *Summary of technological barriers*

The previous part has outlined four main barriers to knowledge sharing within new business process integration, when implementing a totally digital system for handling invoices, an e-invoice system. The four main barriers are: *Technology partner, Sharing platform, Openness to technology and Centralised IT*. The findings point out that the barrier *Technology partner* are linked to lack of trust in the technology, as the link between SAP and Pagero is bad and the employees thereby need to spend time searching for both invoices and problems, as they don't always know that the system is failing. The barriers linked to *Sharing platform* are mainly communication barriers, as the project managers believe that SharePoint is used for sharing knowledge within the MNC's network about the e-invoice project, however the employees do not use SharePoint for knowledge sharing, which make the knowledge sharing process more time consuming and less effective. The third barrier *Openness to technology* is depending on the level of existing technology in each market, the level of technology used by the customers and the local requirements. The last barrier *Centralised IT* points out that there is a lack of knowledge regarding the local requirements at subsidiary level, which affects the integration process of the new business process as the employees at the subsidiaries are unaware of whether the new system meets the local requirements or not, as the system developers lack knowledge about the requirements from the different authorities.

4.2.3   *Organisational barriers*

In the following section the findings of the organisational goals and structure will be presented. The findings are categorised into barriers linked to three main aspects; *Shared goals, Subsidiary communication* and *Decision making*. These aspects will be presented and discussed separately, followed by a summary, which aims to create a better understanding about these barriers.

4.2.3.1   *Shared goals*

All interviewees emphasised the importance of a common understanding of the Statkraft Groups purpose and goal of the project. All of them believed that a common goal facilitates successful launching of the project and that it thereby will roll out in more countries faster than expected. Shared goals are also a motivational factor for knowledge sharing within the organisation. When all people work toward a common goal, success is formed by everyone. Moreover, it is necessary to present and announce the results in order to motivate people. By presenting the results, the

employees are able to see how far the project has reached and see that they are achieving their goals. A team member stressed the importance of a common goal:

> *I believe that the motivation to share knowledge is that we all work toward a common goal; therefore, we are depending on each other to succeed. If only one person completes their task, it is impossible to achieve the goals (Team member 2, our translation).*

The HQ have established KPIs, in order to ensure that all employees working at the accounting centres within the Statkraft Group understand the project and work toward the same goals. The number of successful incoming and outgoing e-invoices are the major evidence that proves the current success for this new business process integration. Based on this information, the HQ believe that this can create more motivation for other subsidiaries to move forward in the same direction.

> *We establish KPIs among the accounting centres so that we can work toward the same goals. We plan for our global accounting report, that we will share the information and to put some incentives for people moving toward the same direction (Accounting Manager).*

However, people at the HQ are also afraid that the subsidiaries are not able to understand the purpose and goals of the project, hence the integration of this new business process may take longer time and the knowledge sharing process might be slower than expected. This often happens when the HQ starts rolling out new business processes into a new country. Project Manager 1 stated that the HQ know what the implementation would give people efficiency in the daily work, however, the person was not certain about the other subsidiaries' opinions:

> *I am not sure whether all of the countries where we are rolling it out are aware of its effect or not. Sometimes they do not see the whole effect or they do not need it actually, because of the local requirements (Project Manager 1).*

Furthermore, the differences in standards also affect the creation of shared goals. When a subsidiary does not share the same goal as the HQ, the situation of resistance to change and adopt new business processes may occur. The Accounting Manager mentioned a problem which occurred related to German subsidiary:

> *For instance, the subsidiary in Germany has been stamping all incoming invoices, scanning and putting them into a folder. Therefore, if they receive invoices electronically, that means they don't need to stamp and then they feel like they are losing control or they are losing something (Accounting Manager).*

The lack of shared goals is further confirmed after we conducted interviews with the German subsidiary as follows. When we stated the question about shared goals, we observed that both of the interviewees, had a long break before answering the question. The interviewees hesitated to

respond, and had a negative attitude toward the goals set up by the HQ. This implies that it is difficult to implement the new business process, as the employees in Germany do not understand and share the final goals of the implementation of e-invoice.

> *It will only change our work, it will not give us benefits. Also, the e-invoice is dependent on whether the vendors are able to send us e-invoices, it is not so common here in Germany (Team Member Germany).*

The findings point out that a shared goal is a motivational factor for new process integration, as it motivates people to work together in order to achieve the same goals. However, shared goals become a barrier to knowledge sharing within new business process integration when the HQ and subsidiaries do not share the same goals. This implies that in order to successfully integrate a new business process, like e-invoicing, it is very important for the HQ to make sure that all the subsidiaries are able to understand and adopt the same goals. However, this also implies that the knowledge sharing between the German subsidiary and the HQ in Norway is lacking.

4.2.3.2 *Subsidiary communication*

In Statkraft, this e-invoicing project is running under a hierarchy structure. The HQ in Norway decides everything and there is only communication between the HQ and each subsidiary. This way of communication may help with the knowledge transferring process. However, some employees believe that the learning may be more effective if the knowledge could be shared directly among subsidiaries, as stated below. Hence, one subsidiaries can learn from the other, without having to wait for a solution from the project management at the HQ.

> *I think the subsidiaries should be able to connect to each other since there are always some local problems that should be shared and other that could facilitate from the information occurring somewhere else in the organisation. (Team Member 2, our translation).*

Moreover, the communication between the HQ and a subsidiary is observed as a command. The information flow from a subsidiary to the HQ is moderately inactive. The subsidiary shares the knowledge they are required and asked to share, they do not share the information they are not actively asked to share. A Project Manager shared opinion on this aspect:

> *The information is only shared with HQ but the reason is that we ask this question, so they have to share it (Project Manager 1).*

These communication problems are confirmed by the interviewees at the German subsidiary as follows. They highlight that there is only one-way communication from the HQ to the subsidiary.

This creates a barrier to knowledge sharing, as when a problem occurs, the subsidiary cannot raise their voice about their understanding before the decisions are made.

> *Sometimes the communication is lacking, and therefore things are shared after they have been decided at HQ, which leaves no other choice for the subsidiary than to accept these decisions. We can talk about major changes that needs to be made to match the local requirements, but there are no other way than to accept the decisions. However, sometimes the decisions are made that fare that it is no way back, even if we say that it does not match our expectations. (Team Member Germany)*

However, more problems are occurring when the employees at the foreign subsidiaries keep their problems inside their business and do not report them to the HQ. This results in that the rest of the Statkraft Group, and especially the HQ lack of knowledge about problems occurring in subsidiaries and thereby might have to find solutions to the same problem in every single subsidiary. A Team Member highlighted a main problem:

> *The system is made for us, for the Norwegian. The program SAP is then of course in Norwegian. I talked with someone in the UK and found out that even if they switched the language into English, there were still a lots of error messages in Norwegian so they had to use google a lot in order to translate. It could be helpful if they tell that back to the HQ. I don't think people here are aware of that (Team Member 3).*

On the other hand, the employees in Turkey stated that they experience the communication between them and the HQ as very effective. They also emphasised that they do not have a demand to share knowledge about problems with other subsidiaries:

> *We share our information and the HQ is very helpful. We do not see any barrier of knowledge sharing or the necessity for sharing knowledge with someone else than the project management at the HQ (Manager Turkey).*

However, in South America, the e-invoice process differs a lot from the European one, therefore do the Statkraft Group not see any possibility to use knowledge created in South America at any other location, and therefore do not see the value in communication among the employees between the South American subsidiaries and the European HQ or subsidiaries. The IT Specialist South America emphasised the difficulty:

> *There are definitely not any replication possibilities of how we use the system in Brazil that can be applied outside South America (IT Specialist South America).*

On the other hand, the IT Specialist South America, emphasised that there is a high replication factor among the South American subsidiaries in Brazil, Chile and Peru.

The findings linked to the barriers of subsidiary communication shows some different aspects. The HQ is aware of the lack in communication, and highlight that they have to ask in order to get the subsidiaries to share their knowledge. However, the subsidiaries do not always report their barriers if not asked to. This make the knowledge sharing process slower and thereby the problems are not solved, which implies that more than one subsidiary might have the same problem and that the HQ is unaware of this. Also, the findings show that the HQ wishes to get a better knowledge flow within the MNC's network, however, the Turkish subsidiary do not see the need for this. This might depend on the fact that Turkey do not know who else to communicate with, except the project management and therefore, do not know about the possibilities to share knowledge with someone who have more knowledge about their tasks, like other employees at the HQ. Also, due to major differences between South America and Europe, the processes will be different, with a low replication factor, which implies less knowledge sharing among these units. However, the knowledge sharing is existing between the South American subsidiaries as the replication factor is high.

4.2.3.3 *Decision making*

Several team members working with the e-invoice project recognised the hierarchy as an obstacle for effective knowledge sharing among the units in the Statkraft Group. Since the information does not go directly to the person who owns the knowledge, the process of solving a problem is time consuming as it must go through one of the project managers as a middle man.

> *One of the subsidiaries had problems with some invoices, and reported this to the Project Manager. The Project Manager together with the subsidiary tried for a long time to solve this problem. After a while the Project Manager turned to us for help. We solved this very fast, since this is one of our main tasks every day. If the subsidiary had contacted us directly, this would have been solved very fast, without the need for the project manager to get involved (Team Member 3)*

However, the Project Manager 2 also identified this drawback and mentioned that they were trying to restructure the project toward a less hieratical structure in order to facilitate the knowledge sharing across border. The Project Manager 2 emphasised that all employees and units could discuss small details and resolve them directly. Nevertheless, the definition of small details has not been clearly given in the team.

> *I would hope people cooperate with each other regarding small details. But if larger problems or changes appears, they need communicate to me (Project Manager 2)*

In order to facilitate the knowledge sharing process when implementing the e-invoice system, one of the project managers emphasised that they will try to include the main local managers from the

different subsidiaries across the world where the e-invoice system is integrated or will be integrated in the future.

> *We are establishing a Steering Committee, which aims to include main local managers from different sites to discuss and decide solutions together (Project Manager 1)*

However, the restructure of the hierarchy is not fully implemented yet. The German subsidiary highlighted that the project structure is still highly hieratical. The subsidiary also emphasised that the decision-making process is highly dependent on the finance of the project. One of the German interviewees implied that if the subsidiary is financial responsible for the project, it thereby should be more autonomous in the decision-making process.

> *The HQ decide everything and we have no options rather than listen to them. Also, other projects are normal paid by the HQ, but not the e-invoice project. Actually, as long as they pay for it I would say that they are in another position of making decisions than we are here in the subsidiary (Team Member Germany).*

There are also different perspectives between the project managers and the team members in how to finalise a solution. The project managers believe that there is no need for a team member to know whether the solution is fixed or not since they think that it will show automatically in the system. However, one team member states that it would be better if they could get feedback when a problem has been solved.

> *I reported to the Project Manager that there existed a problem. But sometimes I don't receive an answer whether it is fixed or not (Team Member 2, our translation).*

Regardless to the project, the extent of hierarchy differs among different units within the Statkraft Group. In a less hierarchical organisational structure as in Norway, the information flows easily and quickly. The other countries formed a higher hierarchy structure which implies that the knowledge have to spread through many layers.

> *In Norway, we experienced that there are several people that can make decisions, not always the manager. In other countries, they should go to the manager, it is more centralised (Project Manager 1).*

Also, this was observed during the interview with the German subsidiary. We asked for two separate interviews with one manager and one employee, however, the manager wanted to attend the interview with the employee. This implies that the hierarchal structure in Germany is very strong, as the manager would not let the employee be interviewed alone.

The findings of the barriers linked to decision making shows that there are several aspects to consider. Firstly, the hierarchy of the e-invoice project. The hierarchy of the project is a barrier for

knowledge sharing as everything has to go through the project managers. Secondly, the communication between the project management and the employees is sometimes lacking as the employees do not receive feedback when a problem is solved. Thirdly, the relationship between the HQ and the subsidiaries is a barrier, as the subsidiaries feel that they are not included in the decision making and have to adopt practices that do not fit their local requirements. The final factor that is a barrier for knowledge sharing linked to decision making is the different organisational hierarchal structures in different countries. It is clear that in some countries, there are strict rules on who to share your knowledge with and what to share.

4.2.3.4 *Summary of organisational goals and structure*

The previous part has outlined five main barriers to knowledge sharing within new business process integration, when implementing a totally digital system for handling invoices, an e-invoice system. The three main barriers linked to organisational goals and structure is: *Shared goals, Subsidiary communication* and *Decision making*. The findings of the barrier linked to *Shared goals* points out the importance of having a shared goal to work toward, not only at the HQ but also within the MNC's network, in order to motivate the employees when integrating a new business process. However, the findings show that having a shared goal is not always easy, as all parts in the project need to understand and share the goals, and some the German subsidiary clearly do not share the same goals as the HQ. *Subsidiary communication* presents the findings liked to how and what the subsidiaries communicate to both the HQ and the other foreign subsidiaries. Here it is clear that the communication between the HQ and subsidiaries are existing, but only if the HQ pressure the subsidiary to share their knowledge. However, the Turkish subsidiary do not experience any problems linked to these barriers, which might depend on the fact that they might lack of knowledge about who they could communicate with except the project management. The final barrier linked to the organisational goals and structure is *Decision making*, where the findings highlight four different aspects of hierarchy that influence the knowledge sharing process when implementing e-invoice as a new business process.

4.2.4 *Individual barriers*

4.2.4.1 *Social networks*

In the Statkraft Group, each individual is responsible for different tasks; therefore, the employees need to know every aspect of their tasks. Hence, it is crucial to share the knowledge that people need to know, not what people want to share. One of the project managers emphasised the importance of sharing knowledge to the right people:

It is important to share the knowledge with the correct person. If a person needs to do a task, then the person needs to know every aspect of how to do it in the best way. So, it is very important to share with the correct person (Project Manager 2).

However, it is difficult to know and understand what other employees are responsible for and which fields they have expertise within. An employee mentioned that when a problem occurred, it took time to find out who could share the essential knowledge to solve the problems. This drawback occurred even within a department at the HQ. The situation was worse when sharing knowledge across national borders. Another employee stated that the lack of personal relationship with the employees in the subsidiaries make it difficult to know who to contact:

The problem might be that people who struggles with a problem don't know who to contact or ask for help. Then the challenge is to ask the right person the right question. (Team Member 2, our translation).

Most of the team members at the HQ confirmed that social contact is crucial for them in order to share information. The knowledge sharing became more convenient and they felt easier to share with employees they already knew. The employee in Germany shared the same idea as the colleague at the HQ that with a good existing network, the person was more willing to both give and ask for needed information. The person elaborated deeper on how personal relationship has a strong impact on the flow of knowledge sharing as follows:

If you have a good relationship with your colleagues, you can just write a short informal e-mail or notices such as "Just give me five minutes! I will check it, and get back to you". With the people whom I have limited contact with, I need to think about what I should write and how to write in the e-mail in order to reduce the risk of miscommunication. It is easier to communicate with those who you know, even though they are situated at the HQ in Norway (Team Member Germany).

The broader the network is, the easier the knowledge can be shared or absorbed. A broad network can provide a person with many layers of relations and references, which help the person to approach the needed knowledge. It is natural to consult people that an employee already knows, but it is also depending on for how long the person has been working in the company. The Team Member 2 stated that the relationship depended on the time a person had worked within the organisation and how they organised their network, which again affected the knowledge sharing to a great extent:

If you have a wide network, it may be easier to search through your network. But this is probably something that is built up with experiences and based on how long you've been working here (Team Member 2, our translation).

However, there is a team member who believed that personal relations did not affect the knowledge sharing process, as stated below. Nonetheless, we observed that this employee only shared knowledge within the accounting department at the HQ. Consequently, the person already has personal contact with all colleagues.

> *I do not experience that personal relations affect my decision on who the knowledge is shared with. I feel that I can talk with whomever of those who have knowledge about my tasks (Team Member 1, our translation)*

Recently, Statkraft is launching a Process Improvement Program, which is a cost cutting strategy. Most of the interviewees mentioned that because of this program, they had not had many chances to come and meet foreign colleagues in the project. They use conference calls or just e-mail as a basic tool to contact each other. This may cause the disruption in making a strong network. The Manager in Germany emphasised that face-to-face meetings will help to create network and trust, which is the best way to facilitate knowledge sharing:

> *I would say that meeting my colleagues in person would definitely facilitate our relationships and our knowledge sharing (Manager Germany).*

In contrast to the social network between the HQ and the European subsidiaries, it is necessary to traveling to South America in order to facilitate the knowledge sharing between the HQ and those subsidiaries. The IT Specialist for South America described how the person make social contact with partners in South America.

> *We also travel to the subsidiaries in South America, in order to meet with potential partners and to implement the new e-invoice system. In addition, there are some SAP super-users, who work at the accounting department in the HQ, travelling to South America to teach them the system (IT Specialist South America).*

The findings linked to *Social networks* clearly point out that most employees feel that a social network with the employees within the MNC's network would facilitate the knowledge sharing when implementing e-invoice. However, due to cutting costs there is not many chances for creating a network by face-to-face meetings. This is solved by using tools like Skypes, however it is emphasised that a face-to-face relationship would make the knowledge sharing process easier.

4.2.4.2 *Personality*

In certain cases, individual characteristics affects the way people behave at work. The information is easier to share from employees who have outgoing personal traits. In contrast, employees who are more reserved are reluctant to talk, it is therefore more difficult to acquire information from

them. A manager at the Statkraft Group discussed how personality impacts the information flows within the organisation:

I think personality sometimes creates problems. Some people are more extrovert; they like to talk about things and share with others. Some people are more introvert and like to sit by themselves (Accounting Manager).

The influence of personality in knowledge sharing is also confirmed by a team member:

I believe the personality affects the extent of how people share (Team Member 2, our translation).

Moreover, most of people agreed that there is a link between the extent of knowledge sharing to the willingness to share from people who hold the knowledge. A team member stressed that it is a personal decision:

That is more individual to decide what to share and who to share. Some people keep things for themselves, some people are willing to share (Team Member 3).

However, one of the project managers stated that people are not allowed to bring personal aspects in work environment and it is necessary to share knowledge no matter how much people are willing to do:

We are in a work situation; you can't have this personal thing to involve in. I mean the personal aspect is not the problem. I can't see this problem here. We focus on sharing only (Project Manager 2).

The findings point out that personality affects the extent to which knowledge is shared within new business process integration. Both managers and team members emphasised that both their own personality and others affect the knowledge sharing process, both with colleagues at the same location and across national borders. However, one of the project managers did not recognise this as a barrier. This might be due to the fact that every organisation wants to overcome individual barriers, however all employees have different personalities and mixing them will always affect the knowledge sharing even though it does not facilitate the organisation.

4.2.4.3 *Interpersonal communication*

Although language is recognised as a main barrier in communication across national borders, all managers indicated that problems occurred even when they used the same language in communication with each other, as stated by the Accounting Manager:

I see many communication problems. It is easy to misunderstand; it is easy to misinterpret. We face many challenges in this aspect (Accounting Manager).

The managers emphasised that misunderstanding was a barrier regardless of the language. Misunderstanding occurs when a person say something that can be interpreted and understood in a different way.

> *Understanding is of course always difficult. We think the receiver understand what we said but perhaps they didn't understand exactly what we meant. It is not only because of language since I also misunderstand in Norwegian. I thought they understood what I said but then I recognised that they thought something totally different. Hence, communication is difficult (Project Manager 2).*

As we already mentioned in previous section, Statkraft has recently launched a cost-cutting program, so e-mail and video conference are the most common ways for employees to communicate. Some interviewees mentioned that although interpersonal communication nowadays had become easier along with the development of technology, there were still several limitations. The most challenge in communication that own interpretation and unwilling to have a free communication may cause confusion and delay in work.

> *E-mail can create misunderstanding. Meeting physically would be better than skype and video conference, but it is costly and time consuming. When we use the video conference, we see the body language as well. Using technology to communicate it good but we need to feel free to have open communication and do not based on our own opinions. (Project Manager 1)*

The misunderstanding is also visible across departments in the company. The employees have knowledge in their own area. However, this makes it difficult to contact other departments, as several technical words are often easy to misunderstand.

> *It's a challenge with communication across departments. People who have contacts with other departments should acquire basic understanding about the other department to ease the communication. (Team Member 2, our translation)*

The situation was highlighted as a major challenge in communication from the German subsidiary. The interviewees in Germany stressed that the communication with different departments across national borders is much more complicated. Misunderstanding may slow down the knowledge sharing process. Expectation mismatch is somehow an obstacle for both HQ and subsidiaries.

> *As we are still in the testing phase of the e-invoice project, I contact IT Team Member 1 who is responsible for the technical solutions, but sometimes it is hard to keep projects on track since we have to write some e-mails back and forth, and the communication is mainly via e-mail except some meetings we have. Sometimes we misunderstand each other's expectations (Team Member Germany).*

As Statkraft is in the process of integrating their e-invoice system, the people at the HQ are now able to see all invoices from the foreign subsidiaries. However, due to the differences in local requirements, the invoices varies from country to country. In some cases, the employees at the HQ

were not informed and aware about these differences, they thus changed the invoices in the way they usually do it. The case indicates that the communication at employee's level need to be improved to avoid similar mistakes and facilitate knowledge sharing.

> *When we saw a German e-invoice in our system, we found that the invoice was wrong. Hence, we changed it, and sent an e-mail to those working in Germany to inform them of this invoice. After a while, one of the project managers came and asked why we changed the invoice, and told us not to do anything with the German invoices, since they were testing/starting to use this system and they would fix it themselves. If we had known this and had better communication with Germany, we would have known that this was not a mistake by the system, and it would be less time for both sides (Team Member 3).*

Currently, the Statkraft's team has to confront a problem that feedback is not frequently used in the project. In most cases, they do not have any reflection after all activities has been done. The reasons for the lack of feedback was due to strict time frames. This may disturbs the learning process within the organisation.

> *People do not have time to reflect on all activities (Manager 1).*

> *Also we need feedback from people who receive the information if there is missing anything. We are not very good at that. (Project Manager 1).*

The findings point out that Interpersonal communication is a barrier for implement new business processes. Both employees and managers emphasised language is a main barrier for knowledge sharing, however, the Interpersonal communication is a problem regardless what language is used. The HQ point out that they face communication problems even though all the employees and managers are fluent in Norwegian. Also, as the earlier findings point out, language has a huge impact on the inter-communication process. Furthermore, the lack of feedback causes a barrier between the project management and the employees as they do not get feedback on what is working and what is not, and therefore, the integration process becomes slower than expected.

4.2.4.4   *Summary of personal and communication barriers*

The findings linked to personal and communicational barriers are divided into three main aspects: *Social networks, Personality* and *Interpersonal communication.* The findings of *Social networks* point out that the lack of social network creates a barrier for knowledge sharing when implementing the e-invoice system within the MNC's network. In addition, *Personality* also influences the degree of knowledge sharing, as some people tend to be more open and willing to share their knowledge, while some are more introvert and thereby do not participate in the knowledge sharing process as much as extrovert individuals. Lastly the findings of *Interpersonal communication* point out that the degree of

interpersonal communication affects the speed of integration and knowledge sharing within implementation of e-invoice.

4.3   Summary of empirical findings

The empirical findings have been presented in accordance to the conceptual framework of this research. The findings started by presenting the *Contextual factors* of each location, Norway, Germany, Turkey and South America. Following we presented how the contextual factors influenced the other barriers: *Technological barriers, Organisational barriers* and *Individual barriers.* Each barrier was divided into different sub barriers and elaborated further. The empirical findings, developed a more detailed model of the conceptual framework developed in the literature review., which is presented in Figure 6 below.
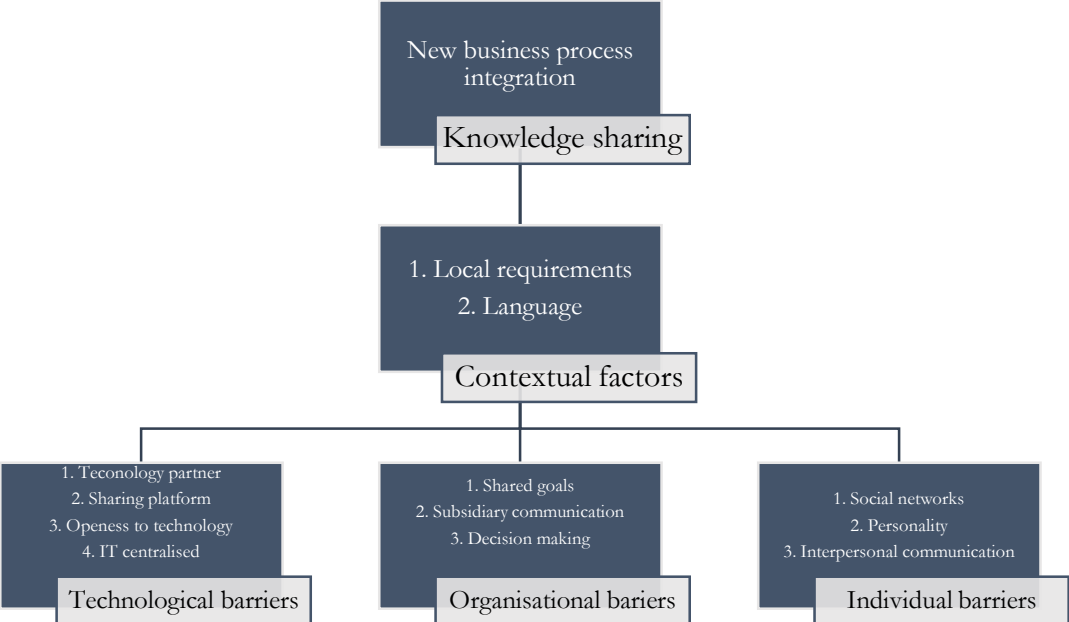
Figure 6: Grouping of the barriers for knowledge sharing (Authors' own creation)

As seen in Figure 6, each barrier now consists of up to four sub barriers. This categorisation has been made in order to structure the empirical findings and highlight the most important barriers within each category. Furthermore, the different categories of barriers are differing from each other. The findings point out that the *Contextual factors*, containing local requirements and language affect the other categories, and are therefore on a higher hieratical level than the three other categories of barriers. Also, we would like to point out that the findings linked to *Technical barriers* are narrower than the other barriers, due to the close link of how technology is used within the specific project of integrating e-invoice in this case study. The findings linked to *Organisational*

barriers relates to HQ-subsidiary relationship, the management of knowledge sharing and information flow. The last barrier, *Individual barriers,* point out the importance of communication, personality and group dynamics linked to knowledge sharing across national borders.

5 ANALYSIS

This chapter will tie together the literature provided in the literature review and the empirical findings from the case study of the Statkraft Group. Together this analysis will present how the new findings relate to the earlier literature of barriers linked to knowledge sharing within business process integration. This will be presented in accordance to the revisited conceptual framework based the conceptual framework developed in the literature review.

5.1 Contextual factors

Carlile and Rebentisch (2003) argued that knowledge as a competitive advantage linked to the extent of which knowledge could be reused or replicated. Knowledge can only be seen as a competitive advantage if it can be replicated to the extent that it will increase the competitive advantage or decrease the costs of transformation, retrieval and transfer. The receiver of the knowledge therefore need to be able to take the shared knowledge and spread it within the MNC's network in order to increase the competitive advantage of the firm. However, a complete replication is impossible due to different local regulations and laws at the subsidiaries location and the different employees involved in the process. The findings imply that when rolling out the e-invoice project in different locations, a replication of the Norwegian system is integrated, however the Statkraft Group have to create new knowledge within each subsidiary in order to meet the local governments regulations and laws. However, the findings point out that the barriers linked to the local requirements are related to each other across national borders. Both Turkey and Germany face challenges with storing of e-invoices, even though it is not exactly the same, it is linked to the same problem. Moreover, both German and the South American subsidiaries face challenges with taxes. Even though these challenges are completely different, it is an indication for the HQ that there are countries with more complex local requirements than Norway and Sweden, which they can be more prepared for when launching the e-invoice project in new countries in the future. This is also seen, as the integration of e-invoice in South America starts with Brazil and then continues with Chile and Peru, where they will be able to replicate most of the practices adopted in Brazil.

The findings point out that there are a lot of different local requirements that has to be meet in each location in order to fully implement the new e-invoice system. This indicates that when implementing the e-invoice as a global strategy, the HQ faces challenges of multiple embeddedness. The subsidiary has their local embeddedness to follow, which is seen by the local requirements and laws from the government. At the same time, they are embedded within the MNC's network, which makes them integrate the system even though they do not see the need for it. The old process was

almost similar in each location, but, when implementing the new e-invoice system, the local requirements became much more tangible as the system must be customised to each location. This implies that the subsidiaries had a more autonomous way of working before, as they could easily adapt to the local requirements at each location, without having to consult the HQ for help. Now, the foreign subsidiaries have to work less autonomous as they are required to use the e-invoice system, which has to be customised with help from the HQ's IT-team. This finding point out that the subsidiaries are forced to be stronger embedded within the MNC's network and home embeddedness of the HQ and less embedded in their local context. This is explained by Meyer et al. (2011) who emphasised that the knowledge sharing process was influenced by both home and host context of MNCs. Tan and Meyer (2010) argued that firms were shaped by their home country embeddedness, where they built their original resource endowments which was an original resource that drives the international growth of the MNC. In addition to firms home context embeddedness, MNCs are also embedded in the local context of their subsidiary's host country (Meyer et al., 2011).

The empirical findings show that the Statkraft Group have adopted English as a common corporate language. The interviewees pointed out language as the main barrier to knowledge sharing when implementing e-invoice as a new business process. It is clear that the language skills affect the knowledge sharing process, especially when working with people located across national borders. Also, the findings imply that the HQ found this as a major barrier and the subsidiaries did not agree. This might depend on the fact that the HQ are Norwegian and therefore tend to be less willing to accept English in their daily tasks, where the subsidiaries must accept English as an organisational language as they do not speak Norwegian. The importance and impact of language barriers within MNCs are confirmed by Tenzer and Pudelko (2016). Also, a trend of adopting English as a corporate language within a number of non-English speaking MNCs has been observed by Harzing and Feely (2008).

5.2   Technological barriers

Our findings point out the difficulties linked to the fact that there is no common standard for e-invoices globally. This is highlighted as the greatest technological barrier for Statkraft throughout the implementation of e-invoices, as they constantly need to customise the system for each country they launch the project in. Riege (2005) emphasised a potential barrier as to develop or maintain the right IT infrastructure, linked to the capability of the technology and the integration of both existing and new IT-systems. This barrier occurs when existing hardware and software components suited for one purpose need to be used in combination with another new system or a different

system in another location. To find a system that works well in all functional areas within a global organisation is almost impossible. Another finding that is also related to combination of both existing and new IT-systems as highlighted by Riege (2005), is the problems linked to using a partner company to convert each invoice into the right format for the Statkraft Group. As the link between the partner company and the accounting system does not always run as smoothly as possible, we see that the employees lack of trust in the technology. Furthermore, they have to check the partner company's portal for invoices that were supposed to go directly into the accounting system, making the process more time consuming. Problems regarding sudden stop in the transferring of invoices between the accounting system and partner company increases the employees' lack of trust in the system. The findings point out that all employees working with these systems clearly faces problems related to the link between the accounting system and the partner company, therefore we believe it is one of the major technological barriers.

The findings point out that the project managers and the employees have different meanings of how knowledge is shared within the integration of e-invoice. The managers highlighted that common sharing platform were used for sharing knowledge, where they put all information regarding the e-invoice project. However, the employees do not recognise the use of the sharing platform, as they share their knowledge via e-mail instead. This indicates that there is a poor link between the project managers and the employees, which results in that valuable knowledge might be lost due to the lack of knowledge about where to find the right information. According to Riege (2005), technology have the ability to act as a facilitator for knowledge sharing across national borders. Thereby, it can encourage and support both knowledge creation and sharing by making these processes more effective. However, to implement the most suitable technology can be challenging (Riege, 2005), as shown within this project. Furthermore, the empirical findings also indicate that much more time is used to share knowledge via e-mail than searching for the knowledge through the sharing platform. For example, one employee in Turkey might ask one employee in Norway how they solve a problem. Thereby, the Norwegian employee has to spend valuable time to try to explain by e-mail how to solve this problem. Instead, the Turkish employee can check the sharing platform where the project management has made sure that templates and task descriptions are provided. Hendriks (1999) suggested that the use of new IT-systems might enhance employees' motivation for knowledge sharing, as it tended to remove temporal, physical and social distance barriers, by improving the process of knowledge sharing. However, even though technology is rarely the only solution and driver for knowledge sharing, the integration of the right technology is highly important (Riege, 2005).

The empirical findings indicate that there are differences in openness to new technology depending on location. It is clear that the HQ in Norway is far ahead the subsidiaries. However, this depend on different factors. The reason for why the HQ in Norway decided to implement e-invoices is due to a requirement from the authorities. Also, we found that in Norway they have been using PDF invoices for some years, which make the transition to e-invoices smaller than for Germany and Turkey who goes directly from paper invoices to a total digital solution. In addition, Turkey is obligated by their national authorities to use e-invoicing and send it through a governmental portal, which make them more willing to adopt the new e-invoice system, as they are obligated by the law. However, Germany is not obligated by their national authorities. Also, they highlighted that there were very few customers that were able to send e-invoices, and therefore they did not see the need for this system, which made them more reluctant to change. Riege (2005) emphasised that there were barriers linked to the use of new technology. These barriers correlate with factors such as the unwillingness to use technology, due to a mismatch with the needed requirements, and unrealistic expectations of IT-systems. Therefore, a barrier occurs when there is a mismatch between the employees' needs and requirements and the new IT-system. Both existing and new technologies are often capable of supporting an effective knowledge sharing process, however, if there is a mismatch between the employees needs and requirements, and the technology, the technology itself can become a barrier.

All the interviewees believe that the IT-support is good, and the fact that it is centralised at the HQ in Norway is not highlighted as a barrier. However, the problems are linked to the IT-support's understanding of the local requirements in the subsidiaries. The people at the HQ in Norway believe that they get the support they need, which might depend on the centralised location of IT. On the other hand, Germany and Turkey both highlighted that there were local requirements that must be fulfilled, which required adaption and customisation of the IT systems in order to be fulfilled. Since the IT-support is centralised in Norway, the subsidiaries experiences lack of knowledge about their local requirements from the authorities in each country. This make the subsidiaries more reluctant to the new business process, as they need to know that the local requirements are fulfilled before totally integrating the business processes. Riege (2005) emphasised the lack of knowledge about IT-systems as a potential barrier for the process of knowledge sharing within new business process integration. However, O'dell and Grayson (1998) explained that the reason for this unwillingness toward new technology was the fear of employee requirements not being met, which is clearly a barrier at the Statkraft Group, as they do not have a local IT consultants who can ensure that the local requirements are being met.

5.3   Organisational barriers

The findings of this study indicate that organisational factors play strong roles for knowledge sharing within the MNC. Furthermore, those organisational factors become more significant in the Statkraft Group over the past few years. There are various previous studies concerning these aspects, one of the most notable is Riege (2005). It also becomes clear that trust and relationship among units of the MNC are the basis of knowledge sharing, as also noted in several earlier literature such as Kankanhalli et al. (2005).

As demonstrated through the findings, shared goals are the first motivation for implementing new business processes. By constructing common goals, the organisation has an ability to motivate people to work together in order to achieve the company's mission and vision. However, in the Statkraft Group, the common goals seem to be recognised mostly by the employees in the HQ. Germany, in contrast, is still sceptical about the outcomes of the project. Since the German employees do not have the same perspectives toward the goals, the implementation of the new business processes is sometimes slow and ineffective. This implies that in order to successfully deploy a new project, such as the new e-invoicing system, it is very important for the HQ to ensure that all units understand and share the same goals. The importance of shared goals is also emphasised in Chow and Chan (2008), who pointed out that the shared goals directly influenced the attitude and personal rules as well as indirectly influenced the intention to share knowledge. Regarding the reasons for why the subsidiary do not share the same goals as the HQ expected, our findings from the interviews with the subsidiaries point out that they do not see the outcomes or benefits of the project. This can be considered as lack of trust, which is one of the most important dimensions influencing knowledge sharing within the MNC. The negative impacts of lack of trust were also examined by Kankanhalli et al. (2005). The German subsidiary argued that in Germany, the government did not require the subsidiary to implement the e-invoice system and therefore it is inconvenient for them, as they have a lot of strict local requirements to follow.

Our findings point out that the disagreement on share goals and the lack of trust lead to another problem in communication between the subsidiaries and the HQ. This noticeably constructs the barriers for knowledge sharing within the organisation. Since lack of trust exists, the HQ is aware that the knowledge does not flow voluntary, but need to be asked for by a command. The HQ needs to ask the subsidiaries to share information and problems. However, the subsidiaries do not always share their difficulties if they are not asked to do this. In consequence, the knowledge sharing process has been slower and people within the organisation experience the same problems

twice. Monteiro et al. (2008) stated that knowledge sharing could create reciprocity, which means that units, who share knowledge with others, will receive more knowledge, compared to units who hoard knowledge. Although the HQ desires to achieve a better knowledge flow within the organisation, a subsidiary occasionally thinks that it is not necessary to have communication with the other subsidiaries, according to the answer of the interviewee in Turkey. As illustrated in the findings, one of the reasons for this is that the Turkish employee does not know who to communicate to and share the information except the project manager. This is in line with a study of Szulanski (1996) that lack of social networks can make obstacles in knowledge sharing within the MNC. This aspect is related further to interpersonal communication and will be analysed deeper in the next part of this paper. Due to lack of social network, the Turkish employee, in consequence, will not know the possibilities to share the necessary information with a person who is expertise in a particular field. Lack of social network and communication may be caused by some contextual factors such as linguistic and geographic barriers (Monteiro et al., 2008), which is similar as presented in our findings. We also find that another reason for lack of communication is also related to the company structure, whether they are hierarchy or flat, which is presented as follows.

In the findings, we illustrated several aspects related to decision making to understand what the organisational structure of the project is. Most of the interviewees claimed that the hierarchy of the project was one of the main barriers for knowledge sharing. This factor affects every other categorises such as IT practices system, the communication between the subsidiaries and the HQ, and the social network as well as the interpersonal communication. Most of the interviewees stated that all information had to go through the project managers in the e-invoice project. Hence, there is only one channel to communicate between the subsidiary and the HQ and subsidiary-subsidiary communication barely exists. Our findings are in line with the study of Tagliaventi and Mattarelli (2006) which states that functionally segmented structure could be one reason to hinder the knowledge sharing across units within an MNC. We also found that it is crucial for the MNC to link all the subsidiaries to its global network, in order to facilitate knowledge sharing and communication among departments and units. This can be approached by establishing coordination mechanisms and improve the communication channel, which is also emphasised in Gupta & Govindarajan (2000). The findings also imply that the decentralised organisational structure encourage the employees to communicate and create their own social networks, which facilitate knowledge sharing. In the earlier study, Wang and Noe (2010) emphasised that the hierarchical structure was an obstacle for knowledge sharing, which can be seen from our finding also. The German subsidiary pointed out that they are not included in the decision making process and therefore the implementations do not fit with its local requirements.

5.4   Individual barriers

Based on the answers from both managers and employees within the Statkraft Group, both directly indicated or underlying in their answers, the findings point out that social networks play an important role in the knowledge sharing within the MNC when integrating e-invoice as a new business process. Although all the project managers emphasised that the flows of knowledge should be transferred or shared freely without personal willingness, most of employees who participated in our interviews confirmed that personal relationship was always a factor which influenced the openness and speed of knowledge sharing. This situation is in line with the research of Szulanski (1996), in which arduous relationship is one of three barriers in knowledge sharing. Knowledge sharing occurs among people, consequently, a decent relationship is required between the senders and the receivers. Szulanski (1996) also emphasised the difficulty in sharing knowledge, because of its tacit characteristic. The employees in the e-invoice project also confirmed this struggle, as they need to share the knowledge in the fields they have expertise in, with others who do not possess this knowledge. During this study, we also found that employees tend to hold back information or knowledge if they are not asked to share it. Hence, the sharing process is sometimes executed by a command. The findings about how social networks affect the knowledge sharing within a project in an MNC also implies that with an open environment and highly-encouraged social contact creation context, knowledge can be shared or absorbed more smoothly. This is confirmed by Szulanski (1996), who emphasised that the distant and lack of intimacy in the network might create a barrier to knowledge sharing. As illustrated through the findings, the most effective way to create social network is to establish relationships by face-to-face meetings. In one research of Hansen et al. (2005), they emphasised the importance of the direct way people cooperate and communicate such as mentoring, coaching and physical contact. However, due to the cutting costs program at the Statkraft Group, together with the development of technology, the opportunities for the employees to create a network by face-to-face meetings are limited. Instead, social media such as Skype conference gradually plays a more important role in sharing knowledge within the MNC. The advantages of those web-based tools and practice in helping to facilitate participation and collaboration among individuals were confirmed further in Storey et al. (2010). However, people always reaffirm that physical contact always is the fastest and most efficient method to expand the social network. Social media technologies are convenient, but still have their limitations.

Considering the individual barriers linked to knowledge sharing within new business process integration, the information received from all the interviewees is coherent, and show that they agreed that personality to some extent influenced the way of knowledge sharing. Both managers

and team members emphasised that personality played an important role on how people created social networks or communicate with other colleagues, either at the same location or across national borders. Personality seems to be a transparent layer which can facilitate or hinder the knowledge permeating. If the person is an extrovert type, the layer is thin and it is easier for them to transfer or receive knowledge. The contrary situation occurs to introvert people, with personality as a thick layer. Personality is a part of instinct motivation as discussed in Osterloh and Frey (2000). In another research of Matzler et al. (2008), characteristics of the persons such as agreeableness, conscientiousness, and openness strongly impact knowledge sharing. Nonetheless, one of the managers in the Statkraft Group denied to confirm that personality is a barrier. The manager stated a desire that the knowledge could move freely within the organisation. However, our findings point out that in some situations, knowledge sharing only occurs when asked for, and not in a free flow. The implication for the manager it that the MNC should consider personality and personality-like traits as a strategy in tasks appointments and management for facilitating the knowledge sharing within the organisation.

As illustrated through the findings, interpersonal communication is one of key challenges in the knowledge sharing process. It is in line with the conclusion of Emmitt and Gorse (2009), who emphasised that communication had a vital role in the process of knowledge sharing among different units. Earlier analysis points out that the language has a huge impact on the communicating process. It is necessary for the employees within the MNC to have a certain level of English language proficiency. However, language is just a tool but not the full condition to make a good level of communication. Misunderstanding and misinterpreting happened even when the employees speak their mother tongue such as Norwegian. There are many reasons for this misleading in communication, most of them are discussed earlier in previous parts. Factors such as language, organisational goals, structure, IT tools, personality, and personal relationship, all together can affect the level of communication. The mixing effect were implied in most of interviewees' answers. Relating to previous literature, Szulanski (1996) emphasised how social networks impact an open talk and Matzler et al. (2008) linked the personality to the extent of sharing information that affected the degree of sharing knowledge. IT support tools such as e-mail can somehow leverage the information flows, however, there are still disadvantages if people don't read the message in the email carefully that leads to misunderstanding. The situation often occurs in a fast-paced and multi-cultural environment. Furthermore, lack of feedback in the project creates an obstacle on keeping the process on track. Feedback is considered as a way of open communication. No mutual feedback results in a hold back of the organisational learning within the MNC.

6 CONCLUSION

This chapter will present the answers to the research question and summarise conclusions based on the empirical findings and analysis. Firstly, the answer to the research question and our contribution will be provided following by, managerial implications of the study and lastly, recommendations for future research will be given.

6.1 Findings and theoretical contributions

In this paper, the barriers of knowledge sharing within new business process integration has been investigated in an MNC setting. It has viewed the barriers through a multifaceted lens and outlined how these barriers has influenced each other.

Previous studies in IB have found many barriers which has influenced knowledge sharing within the MNC's context and many emphasised how culture, technology, organisation and individuals could affect the sharing process. Along with the constant development of technology and digitalisation, there are not only opportunities but also barriers for the MNC in knowledge sharing within their network. Nonetheless, the influential role of a barrier on the other barrier has not been widely discussed. The present study goes through a comprehensive literature review and empirical findings from a qualitative case study conducted at the Statkraft Group that concentrates on barriers to knowledge sharing when implementing new business processes. Furthermore, by focusing on introducing e-invoice as a global strategy, the thesis contributes both to the research field and practical implication of monitoring knowledge sharing. E-invoicing is a new business process in the global business environment. For years, MNCs has been using paper invoices to keep track of their money. However, as the world digitalises, business also need to follow this path, in order to become more competitive. E-invoicing is a part of the digitalisation strategy of MNCs, and therefore an important aspect to research within the digitalisation of business. Also, e-invoice is new to the business environment, and different countries has different legislation regarding e-invoice. Therefore, we believe that this study will contribute to map some of the barriers linked to the integration of e-invoice as a global solution for MNCs. Further, we believe that by choosing the accounting department as a resource unit, we open the research in a field that have not been broadly researched before. Both management research and international business research tend to focus on top-level organisational resources and top-management in MNCs, however this research put focus on a more operational level within the MNC, and how also this part of the MNC is important in order to transform the way of doing business to a more digital competitive strategy of the MNC.

The first research question that was constructed in order to examine the barriers for the knowledge sharing process when implementing new business processes in an MNCs: *What are the main barriers for intra-knowledge sharing within new business process integration?* Four main categories for barriers to knowledge sharing have been found in this study, which verifies results from previous research, as well as contributes to the categorisation of barriers within knowledge management and international business.

In this study we have found four main barriers for knowledge sharing within new business process integration. These are: *Contextual factors, Technological barriers, Organisational barriers* and *Individual barriers.* Furthermore, our findings and analysis show that these four main barriers to knowledge sharing is related to each other and thereby influences each other that answer the second research question.
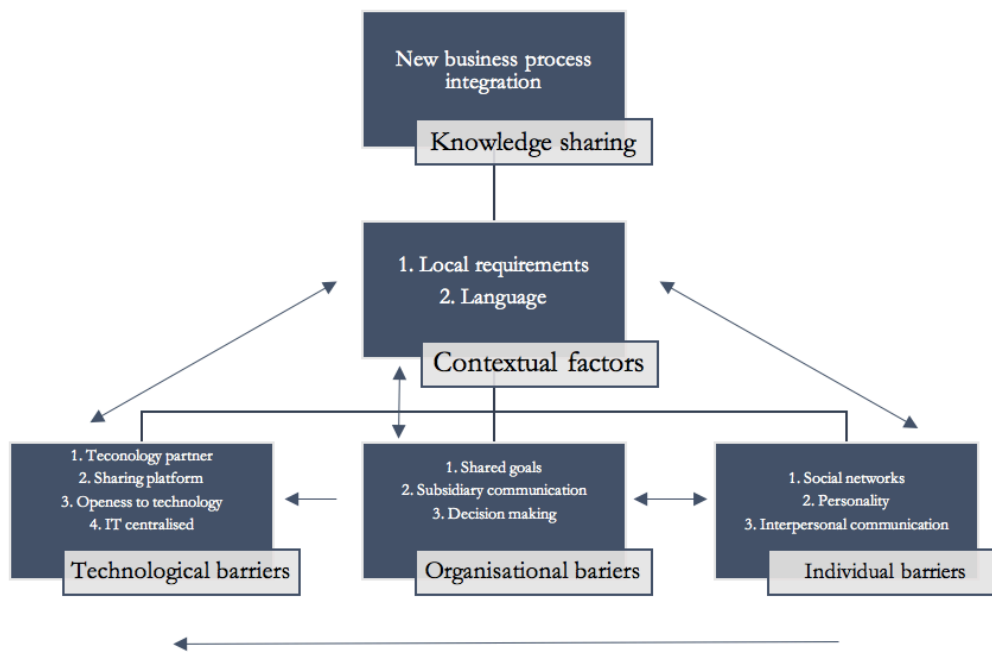

Figure 7: How the barriers influence each other (Authors' own creation)

As seen in the Figure 7 above, the different categories of barriers to knowledge sharing influences each other in different ways. Our findings point out that the contextual factors are paramount to the rest of the barriers. This is due to the different local requirements of each location. These requirements need to be followed and therefore they influence both the technological, organisational and individual barriers. The technological barriers are influenced by the contextual factors by national laws that the technology needs to be adapted to. This is also shown in the level of technology use in at the different locations and how developed technology is in each country.

Furthermore, the contextual factors influence the organisational barriers, as there are different cultures in each country, and different languages in addition to the previous mentioned local requirements. This has implications for both decision making, shared goals and communication between subsidiaries and the HQ as they do not share the same context and business environment. Also, the individual barriers are influenced by the contextual factors, especially regarding to communication and social network. As the employees are located across national borders in different parts of the world, it is challenging to establish social networks, which again facilitate communication and knowledge sharing. In addition, the language, time zones and way of doing business is different due to the contextual factors, which influence the individual barriers.

The findings also point out that the technological, organisational and individual barriers influence each other. However, the findings also emphasise that the technological barriers do not influence the organisational and individual barriers. Firstly, the organisational barriers influence the technological barriers, such as what technology to use, the way of using the technology and where the IT department is located. Secondly, the organisational barriers influence the individual barriers, as they set out shared goals, communication routes and decision making rules. However, the individual barriers also influence the organisational barriers. This can be seen through the to what extend employees creates social networks for knowledge sharing, different personalities for different roles within the organisation, and the fact that personality has a strong influence on both communication and decision making at both personal and organisational level. Also, we found that individual barriers influence the technological barriers, especially to the extent of openness to new technology, which is highly dependent on personal factors among the employees.

6.2   Managerial implication

As illustrated in many previous studies, knowledge is a competitive advantage of an MNC. This study has shown that there are various factors affecting the process of knowledge sharing. In the journey of new business process integration and simplification, knowledge sharing becomes more crucial to facilitate the development of the whole MNC's network. Based on the findings, the contextual factors such as local requirements and language play an influential role over the other barriers on knowledge sharing. As the corporation across national borders has become increasingly common solution to organising the MNC's network, managers need to be aware of the contextual factors, and combine their focus on technological, organisational and individual barriers, in order to be more effective when implementing a global project. Cross-cultural training is common in many MNCs, in order to improve the communication among the networks. We suggest that

technological training shall be incorporated into this in order to give employees a fundamental understanding and help them to catch up with the fast development of new technology. Moreover, the managers shall inspire their employees to work toward a shared goals and the employees need to have a full understanding about the company mission and vision. This needs to be done not only at the HQ but also at subsidiary level. This study further suggests that individual factors have much influences on the flow of knowledge sharing, therefore companies should reconsider how to motivate people to facilitate social networks in dispersed global teams.

6.3 Recommendation for further research

As the topic of e-invoice is still very new in most MNCs that operate in the global environment, we believe continuing research within the field of combining management research and international business studies, focusing on the barriers of implementing new business processes through digitalisation will emphasise further research. As this topic is still new, it would be interesting to do more research on different MNCs from different countries. Also, this would facilitate comparison of how different MNCs solve the barriers linked to especially the contextual factors. Furthermore, we believe that the research would facilitate from a new study in two to five years from now. This, in order to see how the implementation of new global business processes through digitalisation, transforms both the business environment and the way of doing business. Also, how the barriers pointed out in this research: *Contextual factors, Technological barriers, Organisational barriers and Individual barriers*, can be overcome. Furthermore, it is recommended to conduct quantitative research to test the relations and influences among the barriers that is a limitation in our study.

7 REFERENCES

Alavi, M., & Leidner, D. E. (2001). Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. *MIS quarterly, 25*(1), 107-136.

Algote, L., Ingram, P., Levine, J., & Moreland, R. (2000). Knowledge Transfer in Organisations: Learning from the Experience of Others. *Organisational Behavior and Human Decision Processes, 82*(1), 1-8.

Andersen, P., & Skaates, M. (2004). Ensuring Validity in Qualitative International Business Research. In R. Marschan-Piekkari & C. Welch (Eds.), *Handbook of Qualitative Research Methods for International Business* (pp. 109-125). Cheltenham, UK: Edward Elgar Publishing.

Andersson, U., Forsgren, M., & Holm, U. (2007). Balancing Subsidiary Influence in the Federative Mnc: A Business Network View. *Journal of International Business Studies, 38*(5), 802-818.

Ardichvili, A. (2008). Learning and Knowledge Sharing in Virtual Communities of Practice: Motivators, Barriers, and Enablers. *Advances in developing human resources, 10*(4), 541-554.

Ardichvili, A., Maurer, M., Li, W., Wentling, T., & Stuedemann, R. (2006). Cultural Influences on Knowledge Sharing through Online Communities of Practice. *Journal of knowledge management, 10*(1), 94-107.

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management, 17*(1), 99-120.

Barney, J. B. (1996). The Resource-Based Theory of the Firm. *Organisation Science, 7*(5), 469-469.

Bock, G. W., Zmud, R. W., Kim, Y. G., & Lee, J. N. (2005). Behavioral Intention Formation in Knowledge Sharing: Examining the Roles of Extrinsic Motivators, Social-Psychological Forces, and Organisational Climate. *MIS quarterly, 29*(1), 87-111.

Boisot, M. H. (1995). Is Your Firm a Creative Destroyer? Competitive Learning and Knowledge Flows in the Technological Strategies of Firms. *Research Policy, 24*(4), 489-506.

Bordia, S., & Bordia, P. (2015). Employees' Willingness to Adopt a Foreign Functional Language in Multilingual Organisations: The Role of Linguistic Identity. *Journal of International Business Studies, 46*(4), 415-428.

Bourdreau, A., & Couillard, G. (1999). Systems Integration and Knowledge Management. *Information Systems Management, 16*(4), 24-32.

Brache, A. P. (2002). *How Organisations Work: Taking a Holistic Approach to Enterprise Health*: John Wiley & Sons.

Bray, D. (2007). Literature Review-Knowledge Management Research at the Organisational Level. *Social Science Research Network.*

Brown, J. S., & Duguid, P. (1991). Organisational Learning and Communities-of-Practice: Toward a Unified View of Working, Learning, and Innovation. *Organisation Science, 2*(1), 40-57.

Bryman, A., & Bell, E. (2015). *Business Research Methods* (4 ed.). Oxforrd: Oxford University Press.

Cabrera, A., & Cabrera, E. F. (2002). Knowledge-Sharing Dilemmas. *Organisation studies, 23*(5), 687-710.

Carlile, P. R., & Rebentisch, E. S. (2003). Into the Black Box: The Knowledge Transformation Cycle. *Management Science, 49*(9), 1180-1195.

Carter, J. (2011). Skype - a Cost-Effective Method for Qualitative Research. *Counselors & Educators Journal, 4(2)*(3).

Charlie, P., & Rebentisch, E. (2003). Into the Black Box: The Knowledge Tranformation Cycle. *Management Science, 49*(9), 1180-1195.

Chmielecki, M. (2017). Knowledge Sharing in Mncs *Intercultural Interactions in the Multicultural Workplace* (pp. 283-295): Springer.

Choi, B., & Lee, H. (2003). An Empirical Investigation of Km Styles and Their Effect on Corporate Performance. *Information & Management, 40*(5), 403-417.

Chou, C.-H., & Tang, T.-I. (2014). Exploring the Distinction between Knowledge Transfer and Knowledge Sharing by Bibliometric Method. *Journal of Industrial and Intelligent Information Vol, 2*(3).

Chow, W. S., & Chan, L. S. (2008). Social Network, Social Trust and Shared Goals in Organisational Knowledge Sharing. *Information & Management, 45*(7), 458-465.

Cramton, C. D. (2001). The Mutual Knowledge Problem and Its Consequences for Dispersed Collaboration. *Organisation Science, 12*(3), 346-371.

Cuervo-Cazurra, A., & Genc, M. E. (2011). Obligating, Pressuring, and Supporting Dimensions of the Environment and the Non-Market Advantages of Developing-Country Multinational Companies. *Journal of Management Studies, 48*(2), 441-455.

Cummings, J. N. (2004). Work Groups, Structural Diversity, and Knowledge Sharing in a Global Organisation. *Management Science, 50*(3), 352-364.

Davenport, T. H., Jarvenpaa, S. L., & Beers, M. C. (1996). Improving Knowledge Work Processes. *Sloan Management Review, 37*(4), 53.

Davenport, T. H., & Prusak, L. (1998). *Working Knowledge: How Organisations Manage What They Know*: Harvard Business Press.

De Long, D. W., & Fahey, L. (2000). Diagnosing Cultural Barriers to Knowledge Management. *The Academy of management executive, 14*(4), 113-127.

Demsetz, H. (1988). The Theory of the Firm Revisited. *Journal of Law, Economics, & Organisation, 4*(1), 141-161.

Dyer, J. H., & Nobeoka, K. (2000). Creating and Managing a High-Performance Knowledge-Sharing Network: The Toyota Case. *Strategic Management Journal, 21*(3), 345-367.

Emmitt, S., & Gorse, C. A. (2009). *Construction Communication*: John Wiley & Sons.

Espinosa, J. A., Cummings, J. N., Wilson, J. M., & Pearce, B. M. (2003). Team Boundary Issues across Multiple Global Firms. *Journal of management information systems, 19*(4), 157-190.

Estrin, S., Baghdasaryan, D., & Meyer, K. E. (2009). The Impact of Institutional and Human Resource Distance on International Entry Strategies. *Journal of Management Studies, 46*(7), 1171-1196.

Fernie, S., Green, S. D., Weller, S. J., & Newcombe, R. (2003). Knowledge Sharing: Context, Confusion and Controversy. *International Journal of Project Management, 21*(3), 177-187.

Foss, N. J., & Pedersen, T. (2004). Organizing Knowledge Processes in the Multinational Corporation: An Introduction. *Journal of International Business Studies, 35*(5), 340-349.

Ghauri, P. (2004). Designing and Conducting Case Studies in International Business Research. *Handbook of qualitative research methods for international business*, 109-124.

Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge Management: An Organisational Capabilities Perspective. *Journal of management information systems, 18*(1), 185-214.

Grant, R. M. (1991). The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation. *California Management Review, 33*(3), 114-135.

Grant, R. M. (1996a). Prospering in Dynamically-Competitive Environments: Organisational Capability as Knowledge Integration. *Organisation Science, 7*(4), 375-387.

Grant, R. M. (1996b). Toward a Knowledge-Based Theory of the Firm. *Strategic Management Journal, 17*, 109-122.

Grant, R. M. (2002). The Knowledge-Based View of the Firm. *The strategic management of intellectual capital and organisational knowledge*, 133-148.

Gupta, A. K., & Govindarajan, V. (2000). Knowledge Flows within Multinational Corporations. *Strategic Management Journal, 21*(4), 473-496.

Haas, M. R., & Cummings, J. N. (2014). Barriers to Knowledge Seeking within Mnc Teams: Which Differences Matter Most? *Journal of International Business Studies, 46*(1), 36-62.

Hamel, G., & Prahalad, C. K. (1991). Corporate Imagination and Expeditionary Marketing. *Harvard Business Review, 69*(4), 81-92.

Hanna, P. (2012). Using Internet Technology (Such as Skype) as a Research Medium: A Research Note. *Qualitative research, 12*(2), 239-242.

Hansen, M. T. (2002). Knowledge Networks: Explaining Effective Knowledge Sharing in Multiunit Companies. *Organisation Science, 13*(3), 232-248.

Hansen, M. T., Mors, M. L., & Løvås, B. (2005). Knowledge Sharing in Organisations: Multiple Networks, Multiple Phases. *Academy of Management journal, 48*(5), 776-793.

Harzing, A.-W., & Feely, A. J. (2008). The Language Barrier and Its Implications for Hq-Subsidiary Relationships. *Cross Cultural Management: An International Journal, 15*(1), 49-61.

Hendriks, P. (1999). Why Share Knowledge? The Influence of Ict on the Motivation for Knowledge Sharing. *Knowledge and process management, 6*(2), 91.

Hinds, P. J., & Mortensen, M. (2005). Understanding Conflict in Geographically Distributed Teams: The Moderating Effects of Shared Identity, Shared Context, and Spontaneous Communication. *Organisation Science, 16*(3), 290-307.

Hinds, P. J., Neeley, T. B., & Cramton, C. D. (2014). Language as a Lightning Rod: Power Contests, Emotion Regulation, and Subgroup Dynamics in Global Teams. *Journal of International Business Studies, 45*(5), 536-561.

Holt, A. (2010). Using the Telephone for Narrative Interviewing: A Research Note. *Qualitative research, 10*(1), 113-121.

Huber, G. P. (1991). Organisational Learning: The Contributing Processes and the Literatures. *Organisation Science, 2*(1), 88-115.

Hutzschenreuter, T., Voll, J. C., & Verbeke, A. (2011). The Impact of Added Cultural Distance and Cultural Diversity on International Expansion Patterns: A Penrosean Perspective. *Journal of Management Studies, 48*(2), 305-329.

Håkanson, L. (2005). *The Knowledge-Based View Revisited: Towards a Dynamic Synthesis.* Retrieved from

Ipe, M. (2003). Knowledge Sharing in Organisations: A Conceptual Framework. *Human resource development review, 2*(4), 337-359.

Johanson, J., & Vahlne, J.-E. (1977). The Internationalization Process of the Firm-a Model of Knowledge Development and Increasing Foreign Market Commitments. *Journal of International Business Studies, 8*(1), 23-32.

Jung, J., Choi, I., & Song, M. (2007). An Integration Architecture for Knowledge Management Systems and Business Process Management Systems. *Computers in Industry, 58*(1), 21-34.

Kanaan, R., & Gharibeh, A. a. H. (2013). The Impact of Knowledge Sharing Enablers on Knowledge Sharing Capability: An Empirical Study on Jordanian Telecommunication Firms. *European Scientific Journal, ESJ, 9*(22).

Kankanhalli, A., Tan, B. C., & Wei, K.-K. (2005). Contributing Knowledge to Electronic Knowledge Repositories: An Empirical Investigation. *MIS quarterly*, 113-143.

Kim, S., & Lee, H. (2006). The Impact of Organisational Context and Information Technology on Employee Knowledge-Sharing Capabilities. *Public Administration Review, 66*(3), 370-385.

Kim, W. C., & Mauborgne, R. A. (1993). Making Global Strategies Work. *Sloan Management Review, 34*(3), 11.

Kogut, B., & Singh, H. (1988). The Effect of National Culture on the Choice of Entry Mode. *Journal of International Business Studies, 19*(3), 411-432.

Kogut, B., & Zander, U. (1992). Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology. *Organisation Science, 3*(3), 383-397.

Kogut, B., & Zander, U. (1993). Knowledge of the Firm and the Evolutionary-Theory of the Multinational-Corporation. *Journal of International Business Studies, 24*(4), 625-645.

Kostova, T. (1999). Transnational Transfer of Strategic Organisational Practices: A Contextual Perspective. *Academy of Management Review, 24*(2), 308-324.

Lam, A. (1997). Embedded Firms, Embedded Knowledge: Problems of Collaboration and Knowledge Tranfer in Global Cooperative Ventures. *Strategic Management Journal, 18*(6), 973-996.

Lesser, E. L., & Prusak, L. (2004). *Creating Value with Knowledge: Insights from the Ibm Institute for Business Value*: Oxford University Press on Demand.

Levitt, B., & March, J. G. (1988). Organisational Learning. *Annual Review of Sociology, 14*, 319-340.

Liebeskind, J. P. (1996). Knowledge, Strategy, and the Theory of the Firm. *Strategic Management Journal, 17*(S2), 93-107.

Liebowitz, J. (1999). *Knowledge Management Handbook*: CRC press.

Liebowitz, J. (2004). A Knowledge Management Strategy for the Jason Organisation: A Case Study. *Journal of Computer Information Systems, 44*(2), 1-5.

Lodh, S., & Nandy, M. (2006). Exploring Country Risk: Mncs Mindset. *The ICFAI Journal of International Business, 3*(2), 24-35.

Matzler, K., Renzl, B., Müller, J., Herting, S., & Mooradian, T. A. (2008). Personality Traits and Knowledge Sharing. *Journal of Economic Psychology, 29*(3), 301-313.

McDermott, R., & O'Dell, C. (2001). Overcoming Cultural Barriers to Sharing Knowledge. *Journal of knowledge management, 5*(1), 76-85.

McKinlay, J., & Williamson, V. (2010). Creating an Ideal Workplace Culture: The Keys to Unlocking People Talent.

McKinnon, J. L., Harrison, G. L., Chow, C. W., & Wu, A. (2003). Organisational Culture: Association with Commitment, Job Satisfaction, Propensity to Remain, and Information Sharing in Taiwan. *International Journal of Business Studies, 11*(1), 25.

McLellan, E., MacQueen, K. M., & Neidig, J. L. (2003). Beyond the Qualitative Interview: Data Preparation and Transcription. *Field methods, 15*(1), 63-84.

Mesmer-Magnus, J. R., & DeChurch, L. A. (2009). Information Sharing and Team Performance: A Meta-Analysis: American Psychological Association.

Meyer, K. E., Mudambi, R., & Narula, R. (2011). Multinational Enterprises and Local Contexts: The Opportunities and Challenges of Multiple Embeddedness. *Journal of Management Studies, 48*(2), 235-252.

Mohan, A., & Kumar, R. (2015). Knowledge Transfer: A Basis for Competitive Advantage in Organisations. *International Journal of Transformations in Business Management, 5*(3), 1-8.

Monteiro, L. F., Arvidsson, N., & Birkinshaw, J. (2008). Knowledge Flows within Multinational Corporations: Explaining Subsidiary Isolation and Its Performance Implications. *Organisation Science, 19*(1), 90-107.

Myers, M. (2013). *Qualitative Research in Business and Management*. London: Sage Publications Ltd.

Narula, R. (2002). Innovation Systems and 'Inertia'in R&D Location: Norwegian Firms and the Role of Systemic Lock-In. *Research Policy, 31*(5), 795-816.

Nonaka, I. (1994). A Dynamic Theory of Organisational Knowledge Creation. *Organisation Science, 5*(1), 14-37.

Nonaka, I. (2008). *The Knowledge-Creating Company*: Harvard Business Review Press.

Nonaka, I., & Takeuchi, H. (1995). *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*: Oxford university press.

O'dell, C., & Grayson, C. J. (1998). If Only We Knew What We Know: Identification and Transfer of Internal Best Practices. *California Management Review, 40*(3), 154-174.

Opdenakker, R. (2006). *Advantages and Disadvantages of Four Interview Techniques in Qualitative Research.* Paper presented at the Forum Qualitative Sozialforschung/Forum: Qualitative Social Research.

Osterloh, M., & Frey, B. S. (2000). Motivation, Knowledge Transfer, and Organisational Forms. *Organisation Science, 11*(5), 538-550.

Park, C., Vertinsky, I., & Becerra, M. (2015). Transfers of Tacit Vs. Explicit Knowledge and Performance in International Joint Ventures: The Role of Age. *International Business Review, 24*(1), 89-101.

Raj, D. (2007). Knowledge and Innovation in Global Business Scenario. *Asia Pacific Business Review, 3*(1), 47-58.

Reed, R., & Defillippi, R. J. (1990). Causal Ambiguity, Barriers to Imitation, and Sustainable Competitive Advantage. *Academy of Management Review, 15*(1), 88-102.

Reiche, B. S., Harzing, A.-W., & Pudelko, M. (2015). Why and How Does Shared Language Affect Subsidiary Knowledge Inflows? A Social Identity Perspective. *Journal of International Business Studies, 46*(5), 528-551.

Riege, A. (2005). Three-Dozen Knowledge-Sharing Barriers Managers Must Consider. *Journal of knowledge management, 9*(3), 18-35.

Roberts, J. (2001). The Drive to Codify: Implications for the Knowledge-Based Economy. *Prometheus, 19*(2), 99-116.

Ruppel, C. P., & Harrington, S. J. (2001). Sharing Knowledge through Intranets: A Study of Organisational Culture and Intranet Implementation. *Ieee Transactions on Professional Communication, 44*(1), 37-52.

Scarbrough, H. (2003). Knowledge Management, Hrm and the Innovation Process. *International Journal of manpower, 24*(5), 501-516.

Schepers, P., & Van den Berg, P. T. (2007). Social Factors of Work-Environment Creativity. *Journal of business and psychology, 21*(3), 407-428.

Schryen, G., Wagner, G., & Benlian, A. (2015). Theory of Knowledge for Literature Reviews: An Epistemological Model, Taxonomy and Empirical Analysis of Is Literature.

Schwartz, D. (2005). *Encyclopedia of Knowledge Management*: IGI Global.

Schwens, C., Eiche, J., & Kabst, R. (2011). The Moderating Impact of Informal Institutional Distance and Formal Institutional Risk on Sme Entry Mode Choice. *Journal of Management Studies, 48*(2), 330-351.

Simonin, B. (1999). Ambiguity and the Process of Knowledge Tranfer in Strategic Alliances. *Strategic Management Journal, 20*, 595-623.

Spender, J. C. (1996). Making Knowledge the Basis of a Dynamic Theory of the Firm. *Strategic Management Journal, 17*(S2), 45-62.

Statkraft. (2015). *Legal Entities*. Retrieved from http://statkraft.com/contentassets/0d7ff2b5a5dd42d9806efb829ccf5a2c/statkraft-legal-structure-31-12-2015.pdf

Statkraft. (2016). *Annual Report 2015 Statkraft As*. Retrieved from Lilleaker: http://statkraft.com/globalassets/x-annual-report-2015/as-eng_20.03.16_fullstendig_low.pdf

Statkraft. (2017a). Innovation. Retrieved from http://statkraft.com/about-statkraft/innovation/

Statkraft. (2017b). Our History. Retrieved from http://statkraft.com/about-statkraft/historyweb/

Storey, M.-A., Treude, C., van Deursen, A., & Cheng, L.-T. (2010). *The Impact of Social Media on Software Engineering Practices and Tools*. Paper presented at the Proceedings of the FSE/SDP workshop on Future of software engineering research.

Sulkowski, Ł. (2009). The Problems of Epistemology of Corporate Culture. *Journal of Intercultural Management, 1*(1), 5-20.

Svetlik, I., Stavrou-Costea, E., & Lin, H.-F. (2007). Knowledge Sharing and Firm Innovation Capability: An Empirical Study. *International Journal of manpower, 28*(3/4), 315-332.

Szulanski, G. (1996). Exploring Internal Stickiness: Impediments to the Transfer of Best Practice within the Firm. *Strategic Management Journal, 17*, 27-43.

Szulanski, G., Cappetta, R., & Jensen, R. J. (2004). When and How Trustworthiness Matters: Knowledge Transfer and the Moderating Effect of Causal Ambiguity. *Organisation Science, 15*(5), 600-613.

Tagliaventi, M. R., & Mattarelli, E. (2006). The Role of Networks of Practice, Value Sharing, and Operational Proximity in Knowledge Flows between Professional Groups. *Human relations, 59*(3), 291-319.

Tan, D., & Meyer, K. E. (2010). Business Groups' Outward Fdi: A Managerial Resources Perspective. *Journal of International Management, 16*(2), 154-164.

Tangaraja, G., Rasdi, R. M., Abu Samah, B., & Ismail, M. (2016). Knowledge Sharing Is Knowledge Transfer: A Misconception in the Literature. *Journal of knowledge management, 20*(4), 653-670.

Tanriverdi, H. (2005). Information Technology Relatedness, Knowledge Management Capability, and Performance of Multibusiness Firms. *MIS quarterly, 29*(2), 311-334.

Tenzer, H., & Pudelko, M. (2016). Media Choice in Multilingual Virtual Teams. *Journal of International Business Studies, 47*(4), 427-452.

Tenzer, H., Pudelko, M., & Harzing, A.-W. (2014). The Impact of Language Barriers on Trust Formation in Multinational Teams. *Journal of International Business Studies, 45*(5), 508-535.

Tsang, E. W. (2014). Generalizing from Research Findings: The Merits of Case Studies. *International Journal of Management Reviews, 16*(4), 369-383.

Tsoukas, H. (1996). The Firm as a Distributed Knowledge System: A Constructionist Approach. *Strategic Management Journal, 17*(S2), 11-25.

Wang, S., & Noe, R. A. (2010). Knowledge Sharing: A Review and Directions for Future Research. *Human Resource Management Review, 20*(2), 115-131.

Wasko, M. M., & Faraj, S. (2000). "It Is What One Does": Why People Participate and Help Others in Electronic Communities of Practice. *The Journal of Strategic Information Systems, 9*(2), 155-173.

Willem, A., Buelens, M., & Scarbrough, H. (2006). The Role of Inter-Unit Coordination Mechanisms in Knowledge Sharing: A Case Study of a British Mnc. *Journal of Information Science, 32*(6), 539-561.

Winter, S. G., & Szulanski, G. (2001). Replication as Strategy. *Organisation Science, 12*(6), 730-743.

Yang, C., & Chen, L.-C. (2007). Can Organisational Knowledge Capabilities Affect Knowledge Sharing Behavior? *Journal of Information Science, 33*(1), 95-109.

Yin, R. K. (1984). *Case Study Research: Design and Methods.* Beverly Hills, CA: Sage.

Yin, R. K. (2014). *Case Study Research: Design and Methods.* Thousands Oaks: Sage Publications.

Zander, U., & Kogut, B. (1995). Knowledge and the Speed of the Transfer and Imitation of Organisational Capabilities - an Empirical-Test. *Organisation Science, 6*(1), 76-92.

8 APPENDIX

8.1 Appendix 1 - Interview guide Norway

Background

- What general responsibilities do you have in the organisation?
- How long have you been working at this project?

Project background

- Can you tell us about the project?
- What is the purpose and goal?
- How far is it going? Do you think for how long the project will finish?

Technology barriers

- Do you experience any technological barriers?
- How is IT technology used for knowledge sharing?
- Do you think IT will facilitate knowledge sharing between HQ-sub and vice versa?

Organisational barriers

- Do you think the relation between the HQ and the subsidiary is a barrier for knowledge sharing?
- Do you think there is any organisational culture is a barrier for k knowledge sharing?

Individual barriers

- Do you think that there is different extent to share knowledge depending personally?
- Is there any problem in communication?
- What motivates people to share information?

Contextual barriers

- Is there important information occurring in subsidiaries that are shared between subsidiary to subsidiary or subsidiary to HQ or only HQ to subsidiary?
- Are there any contextual barriers? (language, culture, local laws)?

Do you see any other barriers for knowledge sharing?

Do you have any suggestions to how knowledge sharing can be done more effectively?

8.2 Appendix 2 - Interview guide Turkey

Background

- What general responsibilities do you have in the organisation?
- How long have you been working at this project?
- How is your project going on in your country?

Technology barriers

- Do you experience any technological barriers?
- Do you experience any difficulties with the coordination of working with many software's at the same time?
- Do you perceive any reluctance to the use of new IT systems in your department?
- Since the IT-department is located in Norway, how does this affect your work? Do you lack of administrative help? Or lack of technical support and immediate maintenance?
- Do you think that people believe technology cannot do as they expect and thereby don't see the need for it?

Organisational barriers

- Do you think because of the leadership or management directions that people are not able recognize the benefit of the project?
- Do you think the relation between the HQ and the subsidiary is a barrier for knowledge sharing?
- Do you think that the organisational culture is a barrier for knowledge sharing?
- Do you experience lack of trust between HQ and subsidiary?

Individual barriers

- Do you experience a lack of social network or social community with your colleagues abroad?
- Do you think that there is different extent to share knowledge depending personal factors?
- Can you mention some communication problems?

Contextual barriers

- Is there important information occurring in subsidiaries that are shared between sub-sub or sub-HQ or only HQ-sub?
- Are there any contextual barriers? (language, culture, local laws)?

Do you see any other barriers for knowledge sharing?

Do you have any suggestions to how knowledge sharing can be done more effectively?

8.3 Appendix 3 - Interview guide Germany

Background

- What are your general responsibilities within the organisation?
- How long have you been working at the e-invoice project?
- Can you tell me how the project is going on in your country?
- What do you expect after this the e-invoicing is totally integrated?
- What problems do you face at this phase in the integration process?

Technological barriers

- Do you experience any technological barriers?
- Do you perceive any reluctance to the use of new IT systems in your department?
- Since the IT-department is located in Norway, how does this affect your work? Do you lack of administrative help? Or lack of technical support and immediate maintenance?

Organisational barriers

- Do you think because of the leadership or management directions that people are not able recognize the benefit of the project?
- Do you think the German corporate culture is different from the Norwegian corporate culture?

Individual barriers

- How do you communicate with others abroad that also work at this project?
- Do you experience a lack of social network or social community with your colleagues abroad?
- Do you think that there is different extent to share knowledge depending personal factors?
- Can you mention some communication problems?

Contextual barriers

- Is there important information occurring in your subsidiary that is shared to the other subsidiaries/HQ that can facilitate them?
- Are there any contextual barriers?

Do you see any other barriers for knowledge sharing?

Do you have any suggestions to how knowledge sharing can be done more effectively?

8.4 Appendix 4 - Interview guide South America

Background

- What are your general responsibilities?
- How long have you been working at the e-invoice project?
- Can you tell me how e-invoice are planned to be implemented in South America?
- What are your expectations for the system when fully integrated?
  o When do you think this will happen?
- What barriers have you faced this far in the process?
  o What barriers do you potentially think you will face on a later stage?

Technological barriers

- Do you experience any technological problems?
- Do you feel reluctance toward new IT systems from the employees?
  o Lack of familiarity and experience?
  o Do you think there is a lack of training for the new system
- IT is centralised at the HQ in Norway; how do this affect the integration process in South America?

Organisational barriers

- Do you experience that the South American organisation culture differs from the Norwegian?
  o How does this affect your work?
  o How do this affect the knowledge sharing?

Individual barriers

- How do you communicate with South America?
- Do you experience a lack of social network or social community with your colleagues abroad?
- Do you experience communication problems?

Contextual barriers

- Is there important information occurring in your subsidiary that is shared to the other subsidiaries/HQ that can facilitate them?
- Are there any contextual barriers? (language, culture, local laws)?

Do you see any other barriers for knowledge sharing?

Do you have any suggestions to how knowledge sharing can be done more effectively?