Master's thesis in the International
Information and Knowledge Management
Master's Programme

Intergenerational knowledge sharing

Within two case studies

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Abstract

An international research project focusing on intergenerational knowledge sharing has been conducted as a part of the mobility project between Åbo Akademi University, Finland and the University of Hildesheim, Germany. The project has been financed by Academy of Finland and DAAD, German Academic Exchange Services. This thesis is a part of the project and has been carried out as two individual case studies with different subtopics for each case study. The subtopics for these two cases are virtual communication and organizational learning.

The study is carried out with a qualitative approach to the phenomena and semi-structured interviews have been performed as the main data collection method. The results have been analyzed through a comparative empirical framework, in which the knowledge sharing is observed through four aspects: attitudes, communication, IT-systems and learning with a generational comparison between generations X and Y.

The findings of this thesis have proven that in the specific case results age is not a considerable influence factor relating to intergenerational knowledge sharing. As such, generational differences are not remarkable, and the findings are similar in both case studies. In addition, personality of the employees is considered to have an impact on knowledge sharing more than chronological age differences. Moreover, the generational differences in the use of virtual communication for knowledge sharing exist in the willingness of the members to share their opinion virtually. Generation X seems to share knowledge more actively online than generation Y. Furthermore, the employees consider intergenerational knowledge sharing to be an important source for learning together with group projects and having an open working atmosphere where knowledge sharing is encouraged. The main findings of organizational learning relate to formal and informal communities and knowledge transformation on three different levels: individual, group and organizational.

Key concepts: *Intergenerational knowledge sharing, virtual communication, organizational learning, knowledge management, generational concepts, individual learning, communities of practice, formal and informal learning, knowledge transformation and trust in virtual environment.*

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Chapter 1: Introduction

In this introductory section the research topic will be introduced with a motivation for the topic, followed by why the topic is important referring to what phenomena will be studied, and how it is relevant in information and knowledge management. Furthermore, the overall aim and the research questions will be presented. The introduction will show the structure of the thesis at the end of this chapter.

1.1 Research topic

This thesis is a part of the international co-operation project between Åbo Akademi University and the University of Hildesheim, and the focus of this thesis is **Intergenerational Knowledge Sharing**.

The overall aim is to explore the topic of knowledge sharing between different age groups in organizations, with a common methodological approach. The aim is to develop a collaborative practice in research through two concrete master's thesis projects. This thesis represents Åbo Akademi University whereas the other one, 'Exploring Intergenerational Knowledge Sharing in Organizations' by Helene, Brinken and Helena Margaretha Kock (2016), represents the University of Hildesheim. Furthermore, this thesis consists of two case studies with their respective subtopics (see figure 1). Moreover, the two subtopics relate to the focus of intergenerational knowledge sharing and provide an additional perspective to the main research.

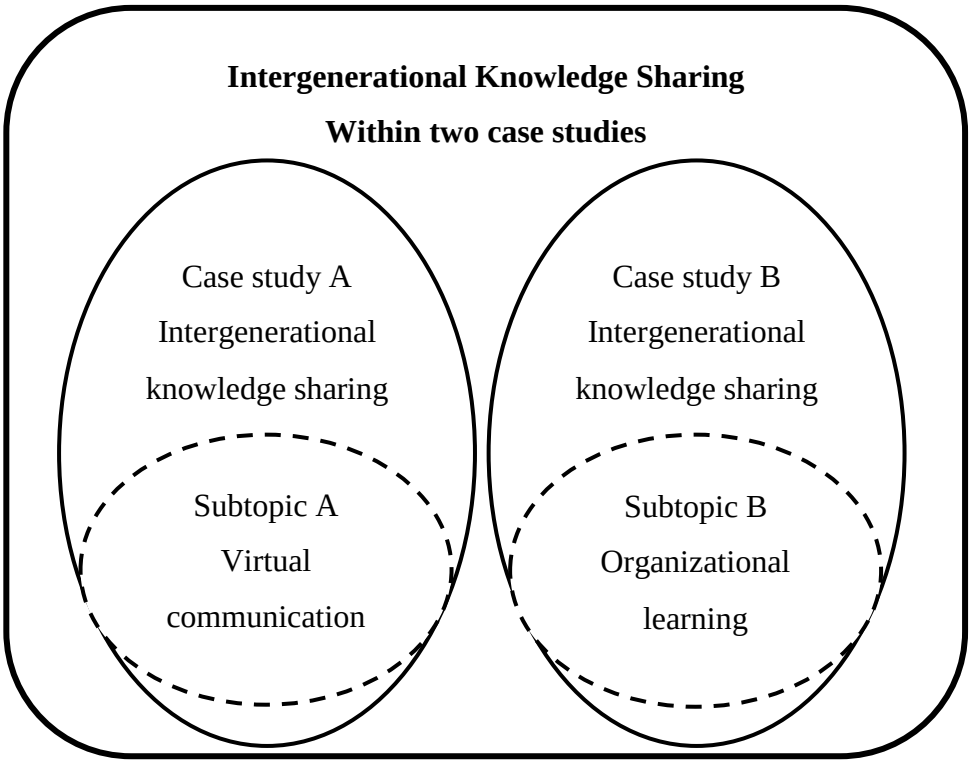


Figure 1: The two case studies with their respective subtopics.

1.2 Motivation of the topic

1.2.1 Intergenerational knowledge sharing

Nowadays, knowledge is considered as one of the most valuable assets in a company and knowledge sharing is an important systematic part of the business processes. Successful knowledge sharing occurs in a dialogue and in work situations within and outside of information systems (Earl, 2001). Along with knowledge exchange in several ways, such as sharing and transfer, the generational dimension brings an important aspect to the study. In everyday actions knowledge sharing happens regularly between different generations. These interactions between generations are crucial, while sharing and acquiring knowledge. In addition, knowledge is modified along the sharing processes (Starks, 2013). Therefore, it is important to study and understand the benefits of the knowledge sharing process within different generations.

1.2.2 Virtual communication

Nowadays, virtual communication with the use of ICT is becoming an essential part of employees' collaboration and knowledge sharing processes within an organization. Moreover, it helps to overcome time and distance and influences the interaction, involvement and social capital of employees in a positive way (Weber & Kim, 2015).

However, some generational studies, there is a difference in the attitudes and the use of information systems among younger and older generations. Reisenwitz and Iyer, (2009) found out that the younger generation is amenable to more information technology use than the older members. One of the reasons is the fact that younger people grew up in the time of the rise of new media and instant communication technologies. However, for the older people new technologies were seen as a 'know-how', which from the beginning formed their suspicious attitude towards it (Levickaitė, 2010).

This means that possible generational differences in attitudes towards communication systems might influence the effectiveness of knowledge sharing within virtual environment. Moreover, there is a challenge for a company to build trustful virtual relationships which support organizational knowledge sharing processes.

1.2.3 Organizational learning

Organizational learning and knowledge sharing go hand in hand inside the organization and its activities for knowledge management and learning (Skyrme, 2010). Furthermore, organizational learning is an important strategic focus, and the dominant generation is currently changing from generation X to generation Y. Both organizational learning and intergenerational knowledge sharing factors are impacting the way knowledge is kept and utilized for the new dominant working generation Y (Harvey, 2012).

Moreover, as the current employees from generation X are slowly retiring and generation Y is taking more responsibility for different working tasks, it is important to look at the individual level of the learning activities and the knowledge sharing to find the most important learning methods from an intergenerational knowledge sharing perspective.

1.2.4 Why is it important?

As an example, if the employees are being laid off, promoted to new positions, recruited or if there is any new trend in the industry, then the knowledge sharing is vital for the human resources of the organization to develop employees' skills in order to fill the needs in a coherent way (Heizmann, 2011).

Furthermore, as the knowledge is considered as an asset in many organizations, Peter Drucker defined the new society as a knowledge society where knowledge is a necessary and sustainable source of the competitive advantage (Drucker, 2011). Knowledge sharing has a significant impact on business organizations, as it always involves individuals and their interaction between each other. Studying intergenerational knowledge sharing is important as it can provide new knowledge about the features, barriers and issues which take place specifically when the participants in knowledge sharing are from different age groups (Villar, 2007). Moreover, as information and knowledge in any organization is individual for each environment, the contextual factor such as virtual communication has a high importance for knowledge sharing among the organization's learning capacity and goals.

Nowadays, digital technologies are used to support inter-organizational collaboration and knowledge sharing. However, tacit knowledge is embedded in people and does not exist apart from them, as it is represented in stories, skills and ideas that might be produced in conversation and networking activities (Ardichvili, et al., 2003). The company should create the virtual circumstances by using supportive communication technology systems for allowing and motivating people to talk about their experience online, to build communities, to learn from each other by exchanging their knowledge through virtual communication.

Furthermore, organizational learning is an important topic from the intergenerational knowledge sharing perspective, as the working generations change and the intergenerational knowledge needs to be transferred in the organization from the leaving generation to the new generation (Harvey, 2012).The organizational learning will be covered from the different learning points of view to enhance and support the main study topic of intergenerational knowledge sharing. Organizational learning will, however, mostly focus on the individual learning activities in the organization and try to find the most effective individual learning methods in this research. Moreover, intergenerational knowledge sharing happens mostly on the individual level in the organizations.

1.3 Research questions

1.3.1 Intergenerational knowledge sharing

For this project, there were two case studies with intergenerational knowledge sharing as the main research focus and each of the case studies had an additional subtopic. These individual subtopics have their own research question, in addition to the primary focus of the whole thesis research. Therefore, the intergenerational knowledge sharing research question is explored in both case studies and the subtopics are only explored in one of the case studies. Therefore, the overall research question is:

How does knowledge sharing take place from an intergenerational perspective in the case studies?

1.3.2 Virtual communication

The increased importance of information and communication technologies has raised the question about the use of systems as a tool for supporting live conversations and knowledge sharing (Stenmark, 2005). Due to the fact that collaboration within an organization nowadays usually consists of traditional face-to-face and virtual communication, the analysis of employees' contribution to online interaction and the possible generational differences in the use of information systems is highly relevant. The purpose of the subtopic is to find out about the employees' attitudes towards virtual communication for knowledge sharing. In order to consider the generational differences about this topic, the analysis will be made based on the comparison of younger and older employees' viewpoints. The research question for subtopic A is:

What are the differences in the use of virtual communication for knowledge sharing in the case company?

1.3.3 Organizational learning

The purpose of the organizational learning aspect is to find out how different employees from different age groups are learning the best and how their individual learning is being supported by the organization. Knowledge gained from learning is a vital resource for the sustainability and competitiveness of the business. (AJMAL, 2009, p. 24). Furthermore, as knowledge sharing among different age groups is an important aspect of organizational learning, it is vital for the organizations to pass the older generation's knowledge on to the new working generations and maintain the knowledge within the organization. As Farrell and Hurt (2014, p. 47) explained, *"different generations have different preferences for training"*. Due to this, it will be important to understand how individuals from different age groups learn the best and how their learning is being supported by the organization. The research question for subtopic B is:

How do employees from different age groups feel they are learning the best and how is individual learning supported in the case organization?

1.4 Structure of the thesis

In this part, we will go through both how the thesis is structured and what are the individual workloads, and how they have been divided between the authors. The work has been divided into chapters including both individual areas and some common chapters. More information related to the individual parts of the work can be seen in Figure 2*: 'How the work has been divided'*. In this figure, the chapters have been divided by the subtopics to sub-headings such as 'Chapter 2: 2.1, 2.2', which means that in chapter 2: the sections 2.1, 2.2 are written by the responsible author, as mentioned in the structure. In other words, the work has been divided into mutual parts and individual sections for some chapters. The aim has been to divide the chapters and sections evenly and equally between the authors.

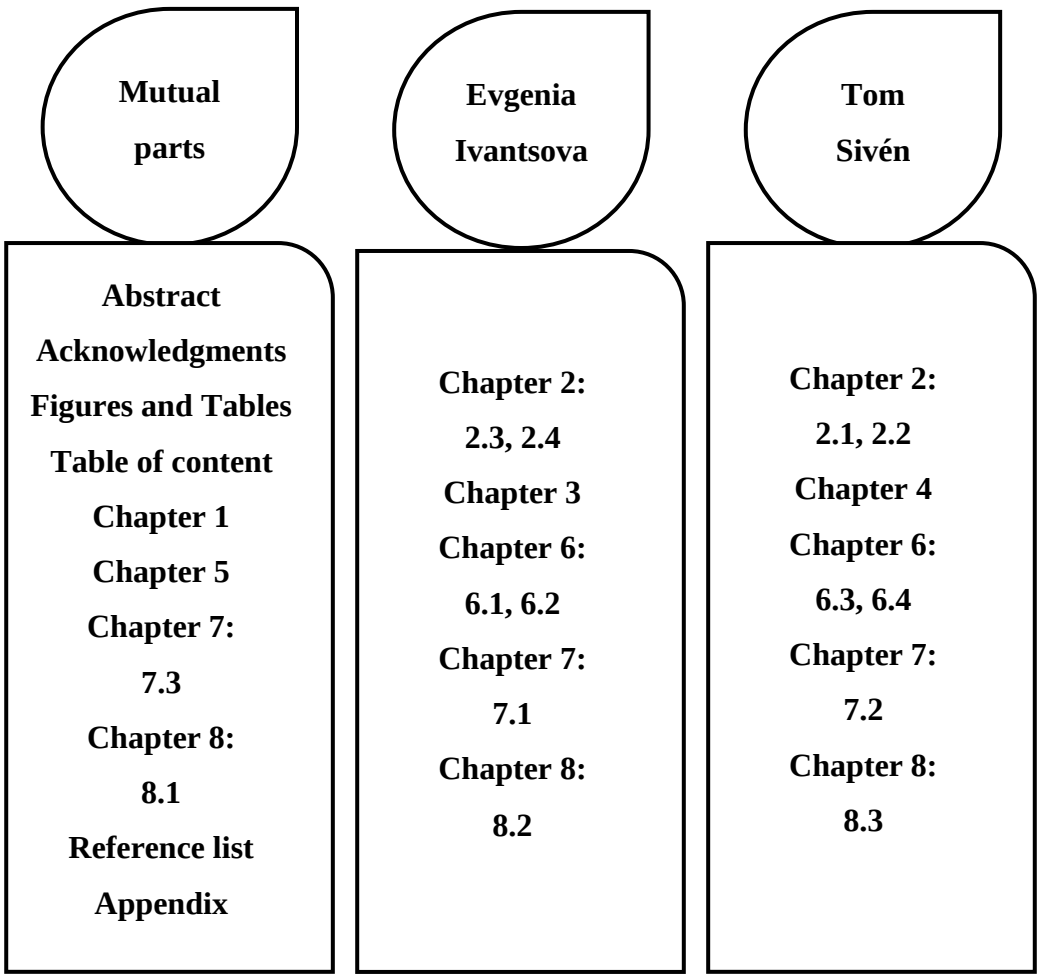


Figure 2: How the work has been divided.

1.5 Study limitations

In this section, we will go through the most important limitations regarding this research. However, there are several smaller limitations that the authors are aware of but which are not included here, as they do not support the main aim of this research. Moreover, these left-out limitations do not influence the final findings or discussion of this thesis.

1.5.1 Intergenerational knowledge sharing

Knowledge sharing aspects

In this research, knowledge is a singular subject. Therefore, knowledge types will be discussed and presented briefly in chapter 2, as it is important to be aware of the differences of explicit and tacit knowledge types, although they do not have a concrete effect on the research itself. In addition, the practice and object-based views on knowledge perspective has been left out of the knowledge types discussion, although they are presented briefly in chapter 2. Furthermore, additional knowledge types, such as implicit, codified, embedded etc., have not been taken into this research as major types of knowledge.

In addition, knowledge exchange and transfer have been left-out of this research, as the focus is on knowledge sharing. There is complexity with these three contexts, however, the research will follow the literature reflecting on knowledge sharing. Moreover, there are several concepts that relate to knowledge and knowledge sharing that have not been introduced in this thesis, as they would not have brought seemingly more value to the thesis itself.

Generational aspects

Grouping employees into generational cohorts in the case studies was done based on the chronological age of the participants. The members of the research were correspondent to a certain generation according to their birth date without taking into consideration other factors like personality, cultural differences, historical or social events. These factors could possibly influence the humans' attachment to a particular generation. Moreover, the research was limited to considering only chronological type of age without considering other types related to age diversity, such as career or experience age or mental age.

1.5.2 Virtual communication

The virtual communication phenomenon in this thesis was considered from very particular perspectives according to its applications to case company A. This means that only aspects of virtual communication that are taking place in the case organization were described in the theoretical chapter. The reason for analyzing the results in the first place is a novelty for the virtual communication concept and non-existent for established theoretical frameworks that might be applied to the data collection.

1.5.3 Organizational learning

In this case study, the limitations have been defined by the time and multiplicity of the study focuses within the area of organizational learning. Intergenerational knowledge sharing is carrying the main weight of the study focus even in case study B. Organizational learning is mainly focused through the connection with knowledge and knowledge sharing with additional focus on formal-informal aspects and the units of learning as the main framework (individual, group and organizational). Moreover, organizational learning as the subtopic for case study B has been observed only from the context of the case company itself.

Chapter 2: Intergenerational knowledge sharing

In this chapter, a background to 'intergenerational knowledge sharing' will be presented, and the various concepts used in this research will be defined. This chapter will introduce both what defines knowledge sharing and four aspects relating to knowledge sharing, such as attitudes, communication, it-systems and learning. In addition, the definitions for intergenerational studies and the different age generations with their differences will be provided with the already existing theories concerning intergenerational knowledge sharing.

2.1 Knowledge sharing literature review

2.1.1 What is knowledge?

Knowledge can be considered from many perspectives, starting from Grey (1996): "*Knowledge is the full utilization of information and data, coupled with the potential of people's skills, competencies, ideas, intuitions, commitments and motivations"*. Grey (1996) spoke from the information and knowledge management dimension, while Bell's (1999) definition for knowledge is *"...the judgement of the significance of events and items, which comes from a particular context and/ or theory (e.g. the construction of a thematic index by a reader of a book)."* These two definitions point out that knowledge is elusive and difficult to put into words. In addition, Davenport & Prusak (1998) state that *"knowledge is a fluid mix of framed experience..."*, which implies that there should be generational differences in the amount of knowledge possessed by a person. Furthermore, as the amount of personal and shared experiences increases along with the chronological age of the person, the amount of individual knowledge is expected to increase simultaneously.

Furthermore, knowledge can be divided and observed from different perspectives, such as individual and collectively held knowledge that an organization tries to manage. In order to support the previous statement, Brown & Duguid, (1998, p.91) explained how knowledge is usually seen as an individual property, while a great amount of the knowledge is created and held in a collective manner: *"... As such work and such communities are a common feature of organizations, organizational knowledge is inevitably heavily social in character"* (Brown & Duguid, 1998, p. 91). Moreover, knowledge can be divided into different types, forms and levels. While knowledge can be simultaneously observed through several perspectives, it is difficult to contextualize without going through different viewpoints. Therefore, different knowledge types will be explained from the individual and organizational levels, as well as from two knowledge types 'tacit' and 'explicit', which are presented later in this chapter.

2.1.1.1 Individual knowledge

As individual knowledge is related to a person, it is therefore influenced by the individual behavior. There are different factors influencing the individual working behavior, such as those defined by Ferdousliza (2015): "*Ability and Skills, Perception, Attitudes, Personality and Hereditary and Diversity Factors*." Furthermore, Tsoukas and Vladimirou (2001, p. 983) explain knowledge as "*...the individual capability to draw distinctions, within a domain of action, based on an appreciation of context or theory, or both.*"

Moreover, individual knowledge is significantly person dependent, and it is connected to multiple behavior related factors, such as, chronological age and the expected behavior of a certain generation. In other words, individual knowledge from the viewpoint of Tsoukas and Vladimirou (2001, p.983) includes the abilities of the individual to judge different situations and draw distinctions within a context or theory, or both, which creates the individual knowledge.

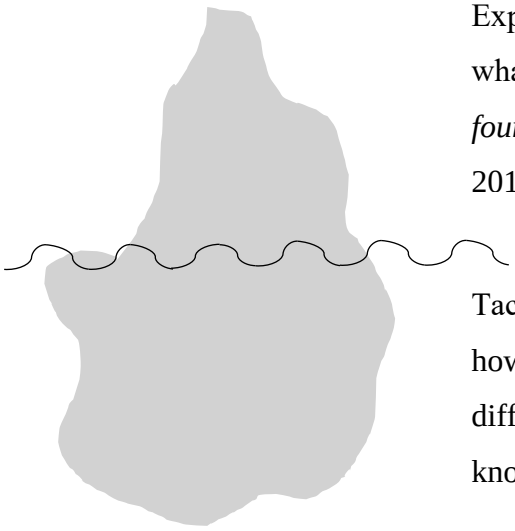
2.1.1.2 Organizational knowledge

Organizational knowledge can be either considered as a general concept or put into a specific context, as in viewing a specific organization and its knowledge from an individual point of view. However, the general context of organizational knowledge could be described in Davenport & Prusak's (1998) words: *"It originates and is applied in the minds of knowers".* Furthermore, organizational knowledge often refers to 'codified knowledge' (see figure 3, p.20) and to the working methods and processes.

This is supported by Hedberg, (1981, p. 6, cited in Evans & Easterby-Smith, 2008, p. 3)*: "Individuals come and go but organizations preserve knowledge, behaviors, mental maps norms, and values over time"*. Therefore, organizational knowledge is preserved and created by collective knowledge communities, as explained by Brown & Duguid, (1998, p. 91), as the groups that are working tightly together in various situations and create organizational knowledge, such as the 'communities of practice'.

2.1.2 Knowledge types

Knowledge has been divided in the literature into one of the two types: explicit and tacit (Frost, 2013) (see figure 3). Explicit knowledge can be put into words, while tacit knowledge is difficult to express, formalize and share. According to Tsoukas (1996, p. 14), *"…'order and disorder are created simultaneously', so too tacit and explicit knowledge are mutually constituted – they should not be viewed as separate types of knowledge."*



Explicit: Sometimes referred to as the 'Know what' knowledge is the "*Codified knowledge found in documents, databases, etc.*" (Frost, 2013)

Tacit: Sometimes referred to as the 'Know how' knowledge. Usually tacit is something difficult to explain, visualize or store as knowledge.

Figure 3: The 'Iceberg' metaphor explaining the explicit and tacit knowledge differences (Dalkir, 2010, p. 3132)

In addition, limitations have been made in how knowledge is defined. However, to be aware of other knowledge theories, according to Hislop (2013), knowledge can be divided into two perspectives, *'those who consider knowledge as an object and as a practice'* (Hislop, 2013). The theoreticians of the practical-based perspective, on the other hand, say that *"practice connects knowing"* (Gherardi, 2000, p. 218), and that knowledge does not exist without human activity. According to Schultze and Stabell (2004), constructivist discourse knowledge is considered as mind, and it does not separate knowledge from action and view it as a dynamic affordance that makes coordinated actions possible (Cook & Brown, 2005, p. 54).

2.1.2.1 Knowledge transformation (SECI Model)

According to Gabriel Szulanski's (1996, p. 29) "*conduit model*", knowledge can be transferred from sender to receiver. Tacit and explicit knowledge are separate, but can be converted from one to another through the SECI model by Nonaka and Takeuchi (1995, p.284) (see figure 4). This model has been criticized by several authors (Doyel, 1985; Glisby and Holden, 2003; Adler, 1995; Stacey, 2001; Tsoukas, 2003, as cited in Arshad, 2008) for several reasons, such as how the relationship has been introduced between tacit and explicit knowledge. However, the point of view in the SECI model is more towards the practice based knowledge, as it is transformable from tacit ('know how') into explicit ('know that'). Following with short explanations related to each SECI model pattern as to Nonaka (1994, p. 19) himself:

1. Socialization, a" *...process of creating tacit knowledge through shared experience"*
2. Combination, *"reconfiguring of existing information through the sorting, adding, recategorizing, and recontextualizing of explicit knowledge."*
3. Externalization, *"tacit knowledge into explicit knowledge", such as research analysis.*
4. Internalization, "*explicit knowledge into tacit knowledge*", similarly to the traditional 'learning'.

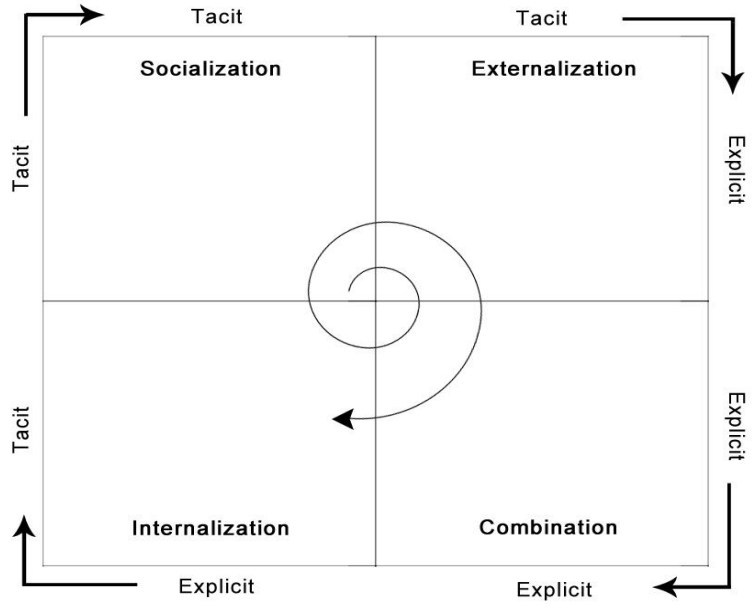


Figure 4: SECI model by Nonaka and Takeuchi (1995, p. 284)

2.1.3 Knowledge sharing

To begin with, there are several definitions for knowledge sharing available in the literature. In this thesis, a few of these definitions are chosen to support and create a common understanding of knowledge sharing in general. First, knowledge sharing could be described as Schwartz (2006, cited by Paulin & Suneson, 2012, p. 83) defined it," *An exchange of knowledge between two individuals: one who communicates knowledge and one who assimilates it*". The knowledge sharing definitions highlight the importance of human capital and the social interactions between the individuals. Furthermore, some authors criticize knowledge sharing in the way that knowledge could never be truly shared. The criticism is based on the reasoning of how knowledge exists in a certain context, which individuals interpret and judge based on their previous experiences and background.

Another definition of knowledge sharing is explained quite clearly as De Vries et al., (2006, cited in Hoof, et al., 2012, p. 149) describes: *"Knowledge sharing is the process where individuals mutually exchange their (tacit and explicit) knowledge and jointly create new knowledge…"* This leads to knowledge creation, and how it is basically hand in hand together with knowledge sharing. Knowledge creation is the process of generating new or modified knowledge of any type by one of the knowledge sharing participants. According to the SECI model of Nonaka and Takeuchi (1995, p. 284), knowledge creation is the combination, conversion and transformation between tacit and explicit knowledge. Furthermore, the participants of that knowledge creation situation are interacting, learning and practicing.

In addition, knowledge management includes the knowledge creation theories, in which knowledge is transformed from tacit to explicit knowledge and vice versa (Nonaka and Takeuchi, 1995). Knowledge creation is taking place during different knowledge sharing situations, such as through virtual communication systems or in a group learning situation.

Furthermore, knowledge creation can be seen as a part of knowledge sharing, a by-product or the end-result depending on the original purpose of the knowledge sharing situation. As stated by Nonaka, et al., (2006) *"Organizational knowledge creation is the process of making available and amplifying knowledge created by individuals as well as crystallizing and connecting it to an organization's knowledge system. In other words, what individuals come to know in their (work-)life benefits their colleagues and, eventually, the larger organization".* Furthermore, this proposes that as the individuals create personal knowledge and share it amongst the colleagues, it will become organizational knowledge.

Therefore, depending on the point of view, the organizational knowledge creation can be the result of the organizational perspective, while from the individual perspective it is only a by-product of their knowledge sharing situation. Moreover, Cook and Brown (1999), try to separate knowledge and knowing by proposing that 'knowledge creation' is the interplay subject between them. However, as knowledge creation relates to knowledge sharing, it is an important aspect of the intergenerational knowledge sharing. Knowledge creation will be explored further in this thesis through the SECI model in chapters: 3, 4 and 7.

Finally, to facilitate and enhance knowledge sharing and creation in different communities, it is important to have a communication climate that stimulates knowledge sharing amongst the participants. Blankenship and Ruona (2009) in their work review types of social structures in companies and explore the knowledge-sharing processes within these groups. In their research, they consider work groups, project teams, strategic communities, learning communities, communities of practice and networks. This research topic will be explored more from the communities of practice point of view later in the chapter 4 'Organizational Learning'.

2.2 Knowledge sharing and four important aspects

In this thesis, the knowledge sharing phenomenon is also considered by its relations with four aspects, such as attitudes of employees towards knowledge sharing, communication, IT-systems and learning. The reason for linking knowledge sharing with these concepts is the possible influence of these factors on intergenerational knowledge sharing processes within an organization.

2.2.1 Attitude towards knowledge sharing

According to Ladd and Ward's (2002), there is a clear relation between successfulness of a knowledge sharing strategy and the employees' attitudes towards knowledge sharing in a company. Attitude has been defined by Eagly and Chaiken (1993, p.1 cited in Schwarz & Bohner, 2001, p.2) in the following way: *"a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor"*. In other words, 'likes' and 'dislikes' contain the essence of what an attitude is about. For example, 'likes' and 'dislikes' have an influence on knowledge sharing actions taken by individuals' as they communicate.

Furthermore, Hooff, et al., (2012, p. 149) contributes to the discussion by explaining how *"... the attitudes that individuals have towards the collective, as well as to the subject of that collective's practices, is likely to be an important determinant of their knowledge sharing behavior"*. For example, individuals engage in a knowledge sharing activity only when they expect to gain something in exchange, such as power, time and other benefits (Bello & Oyekunle, 2014). In addition, De Vries et al., (2006) formulate the essence of the attitudes as the individual behavioral beliefs, which are connected to some level of positive or negative feelings that an individual has in store for knowledge sharing within the company and its employees. For example, this connects with Hooff's, et al., (2012) idea about attitudes towards knowledge sharing by highlighting the behavioral beliefs, and the individualistic attitudes towards the collective interaction and practices within the company.

Finally, as explained by De Vries et al., (2006), the 'likes' and 'dislikes' that the person who is planning to share knowledge in a specific situation has towards the different members influence the knowledge sharing processes. Moreover, as the 'likes' and 'dislikes', or more simply 'attitudes', change towards the members of the organization or the situation, in which the knowledge sharing is possibly taking place, the attitudes influence the knowledge sharing activity internally and externally. Furthermore, the results of knowledge sharing may vary towards either positive or negative depending on the attitude of the person who is sharing knowledge.

2.2.2 Communication

There are three main components for effective knowledge sharing, as according to Starks (2013), engagement, communicative exchanges and learning. Furthermore, communication plays an important role in knowledge sharing and as stated by Hooff & Ridder (2004), the communication atmosphere is a vital part of the knowledge sharing processes, motivation and attitude. Therefore, as an example: "…*constructive communication climate positively influences knowledge donation, knowledge collecting, willingness and effective commitment"* (Hooff & Ridder, 2004, p. 126).

There is no doubt that communication is a broad topic to discuss; as stated by Littlejohn & Foss (2011, p. 7), *"communication is so broad that it cannot be reduced or confined to any single paradigm"*. However, by acknowledging the complexity of meanings connected to the concept of communication and knowledge sharing, there are multiple ways to communicate and share knowledge, whether it is on the individual or on the organizational level. Few examples of the various communication styles could be such as face to face and virtual communication. Moreover, to support the importance of communication in knowledge sharing on an organizational level, Mäki, et al. (2004, p.2) expect that:*" The most critical interactions in knowledge intensive work are expected to be the communication and knowledge sharing patterns between the members of the organization."* Therefore, as the importance of communication and knowledge sharing has been stated from the organizational level, it will be beneficial to have a look at the face to face and virtual communication definitions and connections with knowledge sharing.

First, to define the face to face communication and to create a connection to the knowledge sharing on the organizational level, Salis & Williams (2008) have explained the relationship in the following way: *"Face to face communication arises when individuals physically close to each other engage in a mutual exchange of verbal information. Like other communication mechanisms, it allows the exchange of employees' knowledge throughout the organisation"* (Salis & Williams, 2008, p. 2).

Following with how the virtual communities and communication are seen as, *"... a new approach for people communicate with each other and obtain information or knowledge."* (Jinyang, 2015, p. 171). Therefore, virtual communication helps the communities to broaden the traditional scope of communities, as well as enhancing the efficiency of communication within the community through online interactions. Moreover, virtual communication has been defined by Koh & Kim (2004) in a sense that employees with the same goals and objectivities are participating in online knowledge sharing virtual communities. Therefore, virtual communication and knowledge sharing are linked together through the expansion of the information technology and the prevalence of internet, as the possibilities for communication in general have expanded towards the virtual worlds and become more and more diverse (Jinyang, 2015, p. 171).

2.2.3 IT-systems

Knowledge sharing and IT-systems (or ICT as Information and Communication Technology) are related together, as the systems have been developed more towards knowledge sharing and attuned to help organizations with the knowledge sharing activities. Neches, et al., (1991) give an example of how the systems have been imagined to help out knowledge sharing in the future: *"a vision of the future in which the idea of knowledge sharing is commonplace. If this vision is realized, building a new system will rarely involve constructing a new knowledge base from scratch. Instead, the process of building a knowledge-based system will start by assembling reusable components"* (Neches, et al., 1991).

Furthermore, as stated by Hendriks (1999, p. 94) *"ICT may help locate the various elements relevant to the process of knowledge sharing.*" In addition, while ICT is considered as a supportive tool for knowledge sharing it can support beyond the user interfaces, as the potential supportive role of ICT has steadily increased. However, as according to Hendriks (1999, p. 93) many of the supportive functions and abilities of the ICT may be grouped up and delivered through the mutual interface of the intranet in the companies.

Moreover, Choi et al., (2010) explained how companies are investing heavily in implementation of new exclusive information technology, which is especially designed and created for supporting the knowledge sharing within the company and among the employees. In addition, this has recently increased the importance of IT-systems in the knowledge management and knowledge sharing activities in the organizations. IT-systems and knowledge sharing has been addressed through virtual communities of practices (VCoP) in more recent publications, such as Ardichvili (2008): *"Virtual (online) communities of practice (VCoPs; when community members share and cocreate knowledge in online discussions and other forms of knowledge exchange) are increasingly viewed as important vehicles of collective learning in the workplace."* (Ardichvili, 2008). Virtual communities will be explored in chapter 3 'Virtual Communication' and communities of practice in chapter 4 'Organizational Learning'.

2.2.4 Learning

There is a strong connection of learning with knowledge sharing that is established through various perspectives. There will be a quick overview below; however, it will be considered in detail with the focus on organizational learning in chapter 4 'Organizational Learning'.

Learning is an elusive context and therefore it is difficult to define with a satisfactory explanation. As mentioned by Houwer, et al. (2013, p. 1),*"It is notoriously difficult to define concepts in a satisfactory manner, especially concepts that are as broad and abstract as the concept of learning"*. Learning can be defined as *"the acquisition of knowledge or skills through study, experience, or being taught"* (Oxford dictionaries, 2016), and it can also be divided into three forms of learning, such as '*Formal learning', 'Non-formal learning'* and *'Informal learning'*.

Moreover, these different learning types relate to situations, in which both learning and knowledge sharing are taking place. The three types of learning are defined in the following way by the Gedefop glossary and by the Communication of European Commission (2000-2001, cited in Pettenati & Ranieri, 2006, p. 346)

- **Formal learning** *"learning that occurs within an organized and structured context (formal education, in-company training) and is intentional from the learner's perspective. Normally it leads to a formal recognition (diploma, certificate)."* (Pettenati & Ranieri, 2006, p. 346) Another example of formal learning could be this thesis, as it will lead to formal publication and is a requirement for the final degree certificate.
- **Non-formal learning** *"learning embedded in planned activities that are not explicitly designated as learning, but which contain an important learning element. Non-formal learning is intentional from the learner's point of view."* (Pettenati & Ranieri, 2006, p. 346)
- **Informal learning** is usually taking place in the everyday situations and activities, whether it is leisure or work related. Informal learning is technically the opposite to formal learning and does not usually award the learner with any recognition such as diplomas or certificates*." It is often referred to as experiential learning and can to a certain degree be understood as accidental learning. It is not structured in terms of learning objectives, learning time and/or learning support."* (Pettenati & Ranieri, 2006, p. 346)

To conclude, learning is either a formal or informal activity related to new experience and knowledge creation, in which an individual or organization changes the knowledge base of that specific subject of learning. Moreover, learning is usually a social activity or interaction, in which knowledge is being shared from one generation to another or inside one specific generation. Furthermore, there are generational differences in learning, as stated by Cherri Ho C.Y (2010, p. 60) *"The two generations learn differently and they adopt different learning methodologies and strategies."*

2.3 The concepts of generations

2.3.1 What is a generation?

From the etymological perspective, the word 'generation' comes from Latin and relates to the word 'generationem' which means *"bring forth, beget, produce"*, or the word 'genus' with the meaning of *"race, kind, species"* (Etymoline.com, 2016, accessed on 29.08.2016). According to Gadsden and Hall (1996, cited Brătianu & Orzea, 2012), the term generation refers to a person's position in the family within the family structure. Sociologists define generation as *"a homogenous group of individuals, a group of statistic aggregates or a demographic entity"* (Falardeau, 1990, Kuyken, 2012, p.367).

Karl Mannheim (1923) wrote the essay 'The problem of generations' where he referred to 'generation' as *"a group that shares both a particular span of birth years and a set of worldviews grounded in defining social or historical events that have occurred during the generation's formative development years"* (Mannheim, 1923, cited in Pilcher, 1993, p. 482). According to Mannheim, *"generations would not exist if it were not social interaction between human beings – were there no definable social structure, no history based on a particular sort of continuity"* (cited in Benson & Brown, 2011, p.1844). He also highlighted that individuals within a particular generation share common unique core values, attitudes and beliefs which might lead to the production of a common generational consciousness (Pilcher, 1993). William Strauss and Neil Howe in their book 'Generation' (1991) shared a similar opinion by pointing out that a generation is a group of people who are shaped by a span of time and space in history that lends them a collective persona (McCrindle, 2009). McMullin, Comeau and Jovic (2007, cited in Benson and Brown, 2011, p. 1844) suggested that a generation *"represents a unique type of social location based on the dynamic interplay between being born in a particular year and the socio-cultural events that occur throughout the life course of birth cohort, particularly while the cohort comes of age"*. This means that the term generation is considered more as a social aspect than a biological dimension due to the influence of historical, technological and psychological environment changes on the regimentation of the generations (Levickaitė, 2010).

2.3.2 Why are generational differences important?

Most researchers claim that generational differences take place in the modern organizations due to generations' similar formative experiences that lead to the creation of a generational identity. *"They share common history and collective knowledge that define and shape who they are. The work expectations and the influences of a generation are often a by-product of that generation's unique upbringing and life experiences"* (Guthrie, 2009, p. 7). The findings of Murphy's study (2004, cited in Cogin, 2012) highlighted the existence of significant instrumental and terminal value differences across generational groups. Moreover, research has shown that generational grouping is a significant way to understand the existence of heterogeneity within the workforce due to generational differences in terms of work values. Donald Hillman (2014) in his work distinguished three main themes related to generational work-value differences: communication, education, training and leadership. According to Jean M. Twenge's review about the studies of generational work value differences (2010), the researchers examined at least one variable falling into one of five particular categories such as work ethic, work centrality and leisure, altruistic values, extrinsic versus intrinsic values, affiliation or social values, job satisfaction and invention to leave. Nowadays, three or two generations are working side by side in the organizations. The differences in their attitudes, values and beliefs lead to the differences in their working behavior (Cogin, 2012). In addition, this fact emphasizes the importance of generational research in the characteristics of their relationships within the generations and the intergenerational activities.

2.3.3 Generational cohorts nowadays

The labels and dates that are commonly used in the literature to describe generations nowadays, include traditionalists (those born between 1925 and 1945), baby boomers (those born between 1946 and 1954), generation X (1965-1978), and generation Y which is also called 'Millennials' (1978-1994) (DeLong, 2004, Foot 1996, Zemke et al., 2000, cited in Cogin, 2012).

Moreover, it is said that after generation Y there is a new generation Z coming. However, the representatives of this generation are still studying or just entering the job market (Eleftheriou-Smith, 2002). Figure 5 below demonstrates the existing generations and their date boundaries. In academic research, there are slight variations in the dates which categorize each generation with a few years range in either direction (Knippel, et al., 2012). For example, Starks (2013) considers generation X with the birth years from 1965 to 1980 and generation Y from 1981 to 2000. However, for the purposes of this research, generation X will be defined as those born 1965-1978 and generation Y as those born during the years 1978-1994.

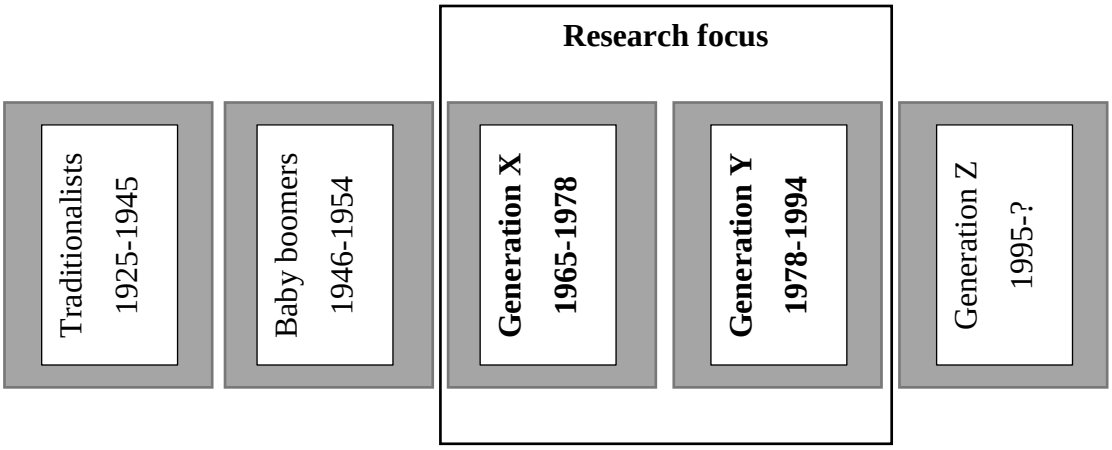


Figure 5: Generational cohorts today

Moreover, there are differences in the naming of generations' in the literature. Some researchers refer to traditionalists as 'veterans', the 'silent generation' or 'the greatest generation' (Kuyken, 2012). In addition, generation X is called 'generation golf' and generation Y is called 'millennials', 'generation why' or 'network generation' (Kuyken, 2012). The term 'Generation X' was introduced for the first time by Douglas Coupland in 1992 in his book Generation X: Tales for an Accelerated Culture (Kuyken, 2012). The representatives of this generation grew up in the period from the late 1960s to the late 1970s when participation and esteem development were emphasized, and individualism dominated collectivism (Benson and Brown, 2011). Lancaster and Stilman (2002, cited in Roodin & Mendelson, 2013) distinguished the historical moments that could have had an influence on this generation which were the invention of personal computers, MTV channel, the increased number of divorces and the loss of 'world' safety.

The researchers who explored the characteristics of this generation in detail suggested that generation X prefer individualism over team work (Kuyken, 2012), they like control and look for work and life balance when work is mostly considered as an instrument to earn money (Cogin, 2012). They view work from an action-oriented perspective and do not have long-term loyalty to the company. In addition, they are reluctant to take on leadership roles (Kuyken, 2012). Generation X like independency at work by assuming that everybody is equal, and resist following rules and regulations strictly (Cogen, 2012).

The term generation Y was first mentioned in 1993 by 'Advertising Age' as the last generation to be born entirely in the twentieth century (Reisenwitz & Rajesh, 2009). This generation is also named by some authors as the 'millennium generation', 'generation next' (Durkin, 2008), the 'net generation' (Tyler, 2008), 'generation why' (Reed, 2007, cited in Reisenwitz & Rajesh, 2009), and the 'internet generation' (Kuyken, 2012). The members of this generation have grown up in an environment with the new economy marked by entrepreneurship and startups (Kuyken, 2012). They are quite young, some of them are still in their study phase, and some have started working with 3-5 years working experience as maximum. Generation Y is the most educated generation at work and it is seen by them as an opportunity for personal fulfillment and development (Kuyken, 2012).

Furthermore, they socialize in a digital world by being *"continually wired, plugged in, and connected to digitally streaming information, entertainment, and contacts"* (Eisner, 2005, p.4). Martin and Tulgan (2004, cited Eisner, 2005) highlighted that generation Y are volunteer-minded and demanding. At the workplace, they dislike tardiness and want to receive immediate feedback about their performance (Eisner, 2005). Millennials set high standards and get satisfaction through their achievements. They promote creativity and use multiple methods to perform a particular task (Murphy et al. 2010, cited in Cogen, 2012).

2.4 Overview of the existing intergenerational knowledge sharing theories

The theories presented below are divided into three parts. The first part gives the academic overview about intergenerational knowledge sharing and its importance for the organizations. The second part provides the researches' viewpoints about the basis of intergenerational knowledge sharing and the factors that influence this process within an organization. Finally, the third part contains the theories that are based on the critical perspective of considering generations only as age-cohorts.

From the organizational perspective, Villar (2007) defined the term 'intergenerational' as the involvement of representatives of two or more generations in activities which require interaction, cooperation and mutual influence among them in order to achieve common goals. Intergenerational knowledge sharing is the organizational process based on communication; it implies knowledge sharing and learning between people from different age groups which can be correspondent to a particular generation. According to Starks (2013), an intergenerational perspective of knowledge sharing can help to enhance long-term workforce planning capabilities, and *"it leads to more job function efficiency and organizational longevity by maintaining the bricolage of strategic implicit knowledge" (p.236).* Piktialis and Greens (2008, cited in Starks, 2013) emphasized the importance of an intergenerational knowledge transfer strategy, by saying that, it can effectively complement advances in the knowledge management system. Intergenerational workforce is seen as an opportunity to create age-integrated teams in order to develop creativity and innovation (Roodin & Mendelson, 2013). The authors highlighted that *"learning experiences with intergenerational teams is the way to help both younger and older workers to develop positive approaches to age diversity at work"* (p.218).

Virta & Widén (2011) explored the processes connected to information and knowledge sharing within twelve expert-duty employees in senior-junior pairs where the seniors were experts who were going to retire soon. The results of this study showed that *"knowledge sharing between generations should be planned and managed from the needs and conceptions of its participants by finding out whether they define their work mainly development or maintenance"* (Virta and Widen, 2011, p. 6). This fact further

supports Ladd and Ward's (2002) assumption about the successfulness of knowledge sharing strategy being dependent on the employees' attitude towards it.

Many intergenerational knowledge sharing studies apply a socio-cognitive perspective towards it, which means that both social and cognitive aspects are relevant to consider when analyzing this phenomenon. As an example, there are three main components for effective knowledge transfer which are engagement, communicative exchanges and learning (Starks, 2013).

One of the most important facilitators in fostering intergenerational exchange is mutual understanding and trust. Moreover, to *"create the intersocial mechanisms, trust, and respect needed to engage in the knowledge transfer process"* (Starks, 2013, p. 235). Moreover, Joshi, Dencker, Franz, & Martocchio (2010, cited in Starks, 2013) pointed out that the important factors for successful intergenerational exchange are empathy, mutual care, altruism and beneficence, which are recognized and understood by all the generations within the company.

Moreover, *"the willingness to offer experiential knowledge stems from mutual respect and perceptual legitimacy of organisational policies, procedures and competences"* (Starks, 2013, p. 236). Special circumstances, such as sufficient time and proximity between the expert and novice workers also influence knowledge sharing processes within a company. Moreover, each organization has special contextual factors that should be considered in order to understand the aspects of knowledge sharing and possible existing barriers to the concepts (Virta and Widen, 2011).

According to Cecilia Bjursell (2015), intergenerational learning and knowledge sharing is considered as a reciprocal process within generations rather than a traditional top-down one when older generations teach younger people. The empirical results of her work showed that *"working with knowledge-sharing strategies that include new generations and facilitate knowledge transfer is needed in contemporary working life"* (Bjursell, 2015, p. 298).

Even though older employees are usually more experienced in particular fields, younger workers and have knowledge and skills that might be a resource for an organization. For instance, the empirical findings of Bjursell's research demonstrate that two generations of the project contributed with different strengths and brought different kinds of knowledge. Most of the project's participants from both generations emphasized the importance of the intergenerational relationships. For younger respondents, it was the opportunity to obtain new perspectives, exchange experiences, expand their networks and learn to contact older people. For the older generation it was *"a way to expand their understanding of the world"*, and *"to learn about the things that could benefit their business"* (Bjursell, 2015, p. 294).

Some of the researchers used the critical assumption of the generational age-cohorts in order to develop or extend the theory about intergenerational knowledge sharing and learning. According to Starks, (2013, p. 235), *"generational studies are not meant to typecast all age-related members of a cohort"*. This means that historical, cultural and societal contexts influenced attitudes, values and beliefs of people from different generations, which transplant into the workplace behavior. Moreover, individual experiences and events play an important role in the formation of peoples' characteristics. Intergenerational knowledge sharing may reflect not only generational differences and can be explained by the level of professional experience of employees (Kuyken, 2012).

Brătianu and Orzea (2012) highlighted that sharing tacit knowledge does not correspond with age, as it relates to people's experience and what they know. Gadsen and Hall (1996, cited in Brătianu and Orzea, 2012) distinguish three other meanings for the generation concept which are development age, discrete time span and zeitgeist: "*Developmental age combines rank-descent and cohort perspectives and defines generation in relationship to task similarity among individuals, e.g., people who were housewives around the same time*" (Brătianu and Orzea, 2012, p. 604).

Discrete time span is the time frame of about thirty years during which a cohort is expected to grow and assume control. Zeitgeist is a group of people with the same cultural values, for example the generation of hippies. In their work Brătianu and Orzea (2012) introduced the concept of "knowledge generation", which is not related to age but to knowledge content or level of a group of people in the organizational context. The authors use the example of IT generation or entrepreneurial generation, as according to the paper, *"each generation can be characterized by a certain level and quality of knowledge, it results that knowledge transfer will take place from the knowledge generation having a higher level of knowledge towards the generation with a lower level of knowledge"* (Brătianu and Orzea, 2012, p. 606).

The role of individual experience and events in the generational identity is the basis for the Kuyken's (2012) research about intergenerational knowledge transfer. The author pointed out that every individual has the attached knowledge (Nonaka and Takeuchi, 1995), and management activities towards knowledge sharing should match individual qualifications of employees, according to the already existing differences in the environments. Kuyken (2012) linked the concept of community to the generational aspect at the workplace in order to define the mechanism of knowledge sharing between different age groups in organizations.

In other words, the author introduced *"the understanding of generations and knowledge transfer between the generations as a process that takes place within 'knowledge communities' that interact with each other"* (Kuyken, 2012, p.). For instance, communities of engineers that are part of Generation X, and work in high-tech companies have a different identity in comparison with a group of nurses from the same generation.

Chapter 3: Virtual communication

This chapter will present the virtual communication research subject, which has been studied in case A. The chapter will define the subject's theoretical concepts and combine it with the main common research focus.

3.1 Virtual communication

3.1.1 What is virtual communication?

To begin with, in this particular research we use the term 'virtual communication', however, it is important to highlight that in some academic papers the same phenomenon is named 'electronic communication', 'computer-mediated communication' or 'interactive communication'. Virtual communication is defined by Gonçalves, et al., (2014, p.3) as *"interfaces and environments where exists a computer simulated world between the interlocutors".* Rogers & Allbritton (1995) gave an example from the book about virtual communication where authors simplified the definition of virtual communication by saying that it is *"machine-assisted interpersonal communication"*. Virtual communication provides the opportunities to connect individuals and to support communication-based tasks (Haythornthwaite, 2005, Weber & Kim, 2015).

3.1.2 Collaborative technologies for virtual communication

For implementing virtual communication into the daily business routine, companies use collaborative technology, which enables complex work processes and allows workers to efficiently share knowledge through virtual interactions (Jarvenpaa, 2000, Weber & Kim, 2015). Collaborative technology is defined as *"technology that allows for individuals to interact both synchronously and asynchronously with groups in an organization, and generally includes platforms for digital information-sharing, information retrieval, information storage, and access across positional, physical, and temporal boundaries*" (Weber & Kim, 2015, p. 389).

Furthermore, collaborative technology is used to foster community building across boundaries and to support knowledge sharing in organizations. Virtual communication facilitates social interaction and strengthens relationships between employees (Weber & Kim, 2015). Moreover, according to Haythornthwaite (2005, cited in Weber & Kim, 2015, p.387), *"a new communication medium can provide opportunities for previously unconnected individuals to communicate and to support communication-based tasks".*

Most of the information technologies that are used for communication can be divided into channels and platforms. Channels provide an opportunity to create and distribute digital information directly to a concrete person or a group of people, such as e-mail or instant messaging (McAfee, 2006). The degree of commonality depends on the number of individuals involved, for example, in a group chat or e-mail conversation. The second category is platforms such as intranets, corporate Web sites, corporate social network sites or information portals. The content is widely visible and the commonality is high (McAfee, 2006).

3.1.3 Virtual environment and the forms of virtual communication

Virtual environment is defined as "*a computer-mediated world, consisting of software representations of real agents, objects, and processes, and a human-computer interface for displaying and interacting with these models*" (Bartfield et al., cited in Gonçalves, et al., 2014, p. 4). The researchers distinguish two main ways of communication virtually by using Direct Communication Architecture (DCA) and Virtual Communication Architecture (VCA) (Gonçalves, et al., 2014).

In particular, DCA provides a virtual face-to-face communication through videoconferencing software. It allows users to see and hear each other by using a computer screen. VCA uses the virtual reality-based representation through the messaging service, however, users do not see or hear each other. Gonçalves, et al., (2014) organized the experiment in order to find out the affective aspects of communicating by using VCA. The results showed that VCA does not affect communication from an emotional perspective and it *is "expected to be the 'natural' environment to cope with the new generation of organizational environments and teams, characterized by intense reconfiguration dynamics"* (p. 9).

The advances in ICT enable the appearance of virtual teams as a new form of a network organization. According to Paul and Ray (2009, cited in Melon, et al., 2016, p. 63), nowadays global virtual teams are *"the critical mechanisms for integrating information, making decision, and implementing plans around the world".* Usually virtual teams have very limited possibilities to know each other in person, and there are challenges for a company to configure the ways for the teams' efficient work. Shwanda et al. (2011, cited in Melon, et al., 2016) highlighted that *"team cohesiveness is a vital social dynamic that is difficult to achieve in virtual teams."* Opportunities for early communication in person of virtual team members foster team cohesiveness, and it leads to the decrease of communication barriers by effecting trust in the virtual environment (Powell et al., 2004, cited in Melon, et al., 2016).

Besides the existence of virtual teams, development in global communication networks facilitates the formation of virtual communities. According to Howard Rheingold (2002, cited in Mezgár, 2009, p. 394), a virtual community is *"a community of people sharing common interests, ideas, and feelings over the Internet or other collaborative network".* Virtual community is one of the knowledge community types based on the computer-mediated communication (Koh & Kim, 2004). Balasubramanian and Mahajan (2001, cited in Koh and Kim, 2004, p. 158) distinguished five main characteristics of virtual communities: *"an aggregation of people, rational members, interaction in cyberspace without physical collocation, social exchange processes and shared objective or interest between members".* Some virtual communities exist strictly in cyberspace, and some of them are also supported by personal interaction of their members (Koh & Kim, 2004). The level of virtuality of the teams or communities depends on the size of the organization and geographical dispersion (Weber & Kim, 2015).

3.2 Knowledge sharing in virtual environment

3.2.1 The use of Intranet

Nowadays, intranet is one of the most popular technologies for supporting knowledge sharing processes and interaction across departmental, functional and geographical boundaries (Damsgaard & Scheepers, 2001) The authors stated that the intranet provides new employees with the opportunities to learn about the company without running the risk of facing ignorance while asking about specific issues. Moreover, employees experience a sense of virtual community by developing effective bonds. Damsgaard and Scheepers (2001) distinguished intranet application modes for supporting various knowledge creation processes. They combined Nonaka's well-known 2-by-2 matrix of knowledge creation (Nonaka & Takeuchi, 1995) with intranet use modes (See figure 6). For each knowledge creating activity the researchers described the corresponding intranet use mode that is conductive to knowledge creation.

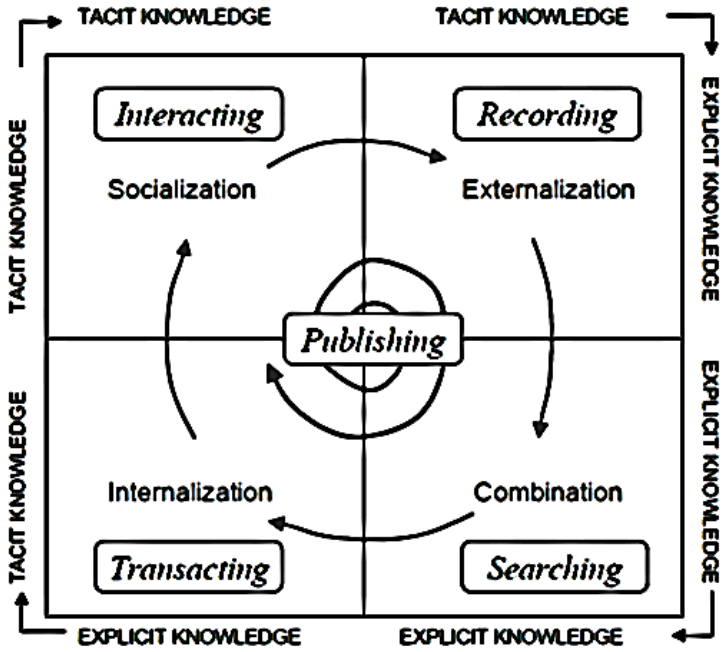


Figure 6: Primary intranet use modes for facilitating knowledge creation (*Damsgaard and Scheepers, 2001)*

According to Damsgaard and Scheepers (2001), socialization is considered as interaction. Intranet can connect individuals with each other in different forms such as person-to-person, one-to-many or many-to-many. Externalization is seen as the primary mode of intranet use to record information from different parts of an organization. Intranet can become the virtual 'organizational memory' (Huber, 1991, cited in

Damsgaard and Scheepers, 2001). The authors used the primary mode of intranet use in the combination of knowledge as searching and the internalization of knowledge through transaction with intranet-based knowledge repositories (Damsgaard & Scheepers, 2001). As a conclusion, the researchers highlighted the importance of purposefully combining intranet publication with the interaction, transaction, searching and recording modes in order to foster knowledge sharing processes between employees in an organization.

3.2.2 Trust in virtual environment

Trust is defined as the *"willingness of a party to be vulnerable to the actions of another party, based on the expectation that the other party will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party"* (Sarker et al., 2011, p. 275). Trust might lie in the relationships between two or more people, or in the relationships between two or more collectives. Trust is also defined as *"the common belief among group members that a particular member will behave in accordance with the commitments, will be honest in the negotiations preceding those commitments, and will refrain from taking undue advantage of another"* (Sarker et al., 2011, p. 276).

In the context of knowledge sharing, trust is considered to be the basis as it can strengthen organizational network and shape organizational knowledge management processes. Trust usually develops through interaction in face-to-face encounters, and it is built on common goal, commitment, collaboration, individual expertise and correct information (Widén-Wulff, 2007). Abrams et al., (2003) in their research about 'Nurturing interpersonal trust in knowledge-sharing networks' suggested that there are two dimensions of trust that promote knowledge creation and sharing. These are benevolence and competence. Benevolence means that people care about each other and take an interest in each other's well-being and goals. Competence means that people have relevant expertise and can be depended upon to know what everybody is talking about (Abrams, et al., 2003). According to the results of the research, people are likely to rely on the benevolence of a colleague, as it allows to query a colleague in depth without fear of damage to self-esteem or reputation. These two dimensions of trust are considered as important relationship characteristics that enable knowledge sharing between two people (Abrams, et al., 2003).

Hsu & Chang, (2014) stated that many researchers highlighted that interpersonal trust leads to higher levels of knowledge sharing. Moreover, interpersonal trust plays an important role in knowledge management processes of a company with knowledge management systems and other IT-based tools (Huber, 2001; Staples & Webster, 2008, cited in Hsu and Chang, 2014). This means that interpersonal trust can also be considered as a prerequisite for knowledge sharing in the virtual environment. Hall & Widén-Wulff (2008, p. 73) pointed out that *"the exchange of information in online environments is highly dependent on social relationships"*, and the degree to which information may be exchanged virtually depends on the extent to which participants are socially integrated. Weber's and Kim's research about virtuality, technology use and engagement within organizations (2015) revealed that managers of a company should manage the development of collaborative technology by concentrating on some specific characteristics of employees. For example, the colleagues working across time zones rely more on technology, but individuals in a multitude of functions decrease technology use.

The trustworthiness of the relationships among employees depends on several factors. For example, the frequency of communication affects the level of trust in a company. Moreover, a person's role and place in an organization influences the ways how trust emerges between people. However, in a case when there is a lack of factors like time and roles, then attitude on an individual level might be a critical factor for trust building (Widén-Wulff, 2007). Moreover, a high level of trust could be reached by the wish for mutual successes and close working relationships among the workers. In addition, collaboration affects trust. If people are dependent on each other's knowledge, then trust is built because of the high quality of colleagues' knowledge (Hsu & Chang, 2014). Trust is difficult to measure. However, according to Schmid (2002, cited in Widén-Wulff, 2007), commitment can be considered as a measure of trust: *"The intensity of moral commitment to a cause or of caring for the welfare of others illustrates the level of trust"* in an organization (Schmid, 2002, cited in Widén-Wulff, 2007, p.132).

Chapter 4: Organizational learning

This chapter will present the organizational learning subtopic, which has been studied in case study B. The chapter will go through the theoretical aspects of learning, and combine it with knowledge and knowledge sharing. Additionally, formal and informal communities of practices will be discussed at the end of the chapter in the context of intergenerational knowledge sharing and learning organizations.

4.1 What is organizational learning?

Organizational learning could be described as follows: *"The essence of organisational learning is the organization's ability to use the amazing mental capacity of all its members to create the kind of processes that will improve its own"* (Nancy Dixon 1994 cited in Skyrme, 2010). However, organizational learning has been defined in other ways by several sources, such as by the 'business dictionary' (2016): *"Organization-wide continuous process that enhances its collective ability to accept, make sense of, and respond to internal and external change".* Furthermore, there are critiques concerning the words being used in the previous definition from Fiol and Lyles, (1985, p. 805), as they state that" *Change, learning, and adaptation have all been used to refer to the process by which organizations adjust to their environment. The problem is that these terms have not been used consistently with the same meanings."* (Fiol & Lyles, 1985) Due to the difficulties in defining organizational learning with a common consensus and meaning regarding the used words, the definition of organizational learning will be on a very basic level here: *"Organizational learning means the process of improving actions through better knowledge and understanding"* (Fiol & Lyles, 1985).

However, there are multiple approaches to organizational learning and in this chapter, two general viewpoints are presented. The first viewpoint is related to how the organization is perceived as a unified group of individuals and in which the learning is observed from a cognitive perspective. The second perspective observes learning through a community based viewpoint, in which the organization's employees create and share knowledge through social interactions and groups called the communities of practice. Therefore, the organizational learning definition depends on the perceived perspective of how the learning is taking place in the organization. In this subtopic's case study, organizational learning could be defined as a change in the knowledge base of an organization that occurs as a function of experience (e.g., Fiol & Lyles, 1985 as cited in Argote & Miron-Spektor, 2009, p. 4).

4.1.1 Knowledge and learning

In addition, knowledge can exist and evolve by itself inside the organization and it can include both tacit and explicit knowledge types at the same time: *"The knowledge could be embedded in a variety of repositories, including individuals, routines and transactive memory systems"* (Argote & Miron-Spektor, 2009, p. 4).

Furthermore, understanding the elusive and difficult-to-define nature of knowledge and learning, due to their relationship as concepts, they are deeply connected. For example: *"Knowledge is the outcome of learning"* (Argote, 2013, p. 48). In addition, coming back to how this influences organizational learning, there are researchers who have argued, that employees with different setup and amount of experiences can enhance organizational learning through transformation of their knowledge bases. Thus, if knowledge transformation is the result of learning, then "*Learning begins with experience"* (Argote & Miron-Spektor, 2009, p. 9). The relationship between experience, learning and knowledge has been illustrated in figure 7: 'Experience plus learning activity equals 'new' knowledge' to summarize the theory.

Moreover, learning is a part of social interactions and knowledge sharing and it is influenced by the individual experiences. Learning can gather individuals together and create communities of practices in which the learning is performed through social interactions and practices. To support the learning activities of an individual, *"The social construction of identity shapes each person's view and interpretation of the world. Learning and the creation of new knowledge can then take place within the context dependent forum of the community, and can be shared through social practice."* (Frost, 2013)

Figure 7: Experience plus learning activity equals 'new' knowledge

4.1.2 Knowledge management and organizational learning

The importance of an effective knowledge management strategy in the organization is perceived as a valuable and long-sighted plan for the organizational learning development. As explained by Dalkir (2011, p. 3131), *"Knowledge management solutions have proven to be most successful in the capture, storage, and subsequent dissemination of knowledge that has been rendered explicit—particularly lessons learned and best practices"*.

In addition, knowledge sharing is one of the main cornerstones in organizational learning, as it relates to the human interactions and social processes of an organization. As also Hong and Kuo (1999) (Cited in Suveatwatanakul, 2013, p. 719) suggested, *"... learning through sharing becomes the operational core of knowledge management."* Moreover, supporting this statement Hislop (2013, p. 56) defined knowledge management as: *"... an umbrella term which refers to any deliberate efforts to manage the knowledge of an organization's workforce".* Furthermore, Hislop (2013, p. 56) explains how the knowledge in the company's workforce can be managed with various styles and methods, both directly and indirectly, through social interactions and collective network structures that are included in the organizational structure and culture.

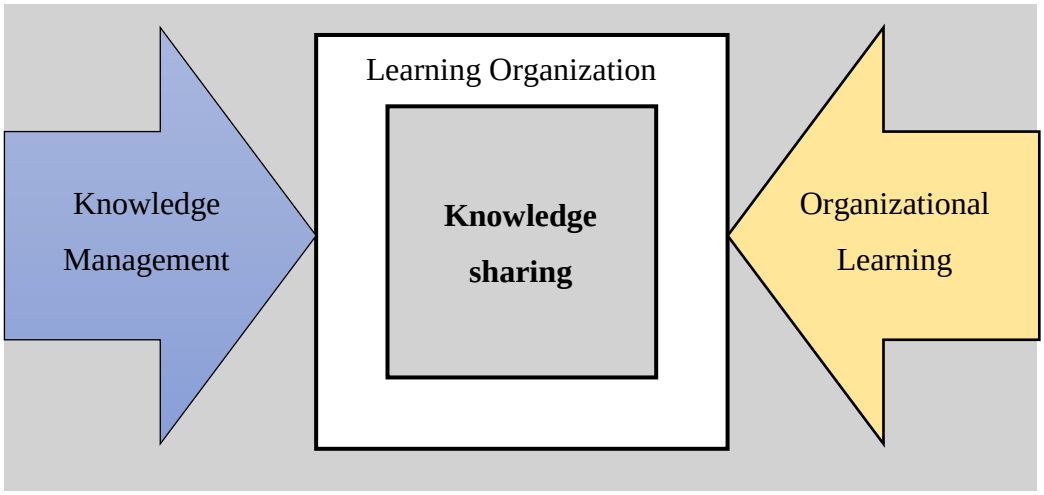


Figure 8: Knowledge sharing taking place inside a learning organization, which is influenced by knowledge management and organizational learning

Finally, as organizational learning and knowledge management are closely bound management subjects, it is important to lift the ‘learning organizations’ topic, which strengthens the relationship between knowledge management and organizational learning, as seen in Figure 8: ‘Knowledge sharing taking place inside a learning organization, which is influenced by knowledge management and organizational learning’. This figure is a simplistic view of how knowledge sharing is influenced by knowledge management and organizational learning and the main goal is to clarify how knowledge sharing is taking place inside these contexts. Figure 8 is based on figure 9: ’Learning and Knowledge Management’ (Skyrme, 2010) and the knowledge sharing literature review.

4.2 Learning organizations

Learning organizations and organizational learning are connected topics. The definition for learning organization usually includes an open culture for both learning and knowledge sharing, some type of knowledge management and organizational learning strategy, knowledge intensive work and the employees to do it. For example, Skyrme (2010) defines learning organization as the *“…place the culture, systems, mechanisms and processes, that are used to continually enhance the capabilities of those who work with or for it, and collectively enhance the organization's knowledge so that it can achieve sustainable outcomes - for themselves and the communities in which they participate”.*

Moreover, Garvin (1993, cited in Ajmal, 2009) defines a learning organization as an organization skilled at creating, acquiring and transferring knowledge and modifying its behavior to reflect new knowledge and insights. In addition, another definition for learning organization could be, as mentioned in Skyrme (2010), how it manages to facilitate and enhance the continuous learning activities and the development of itself.

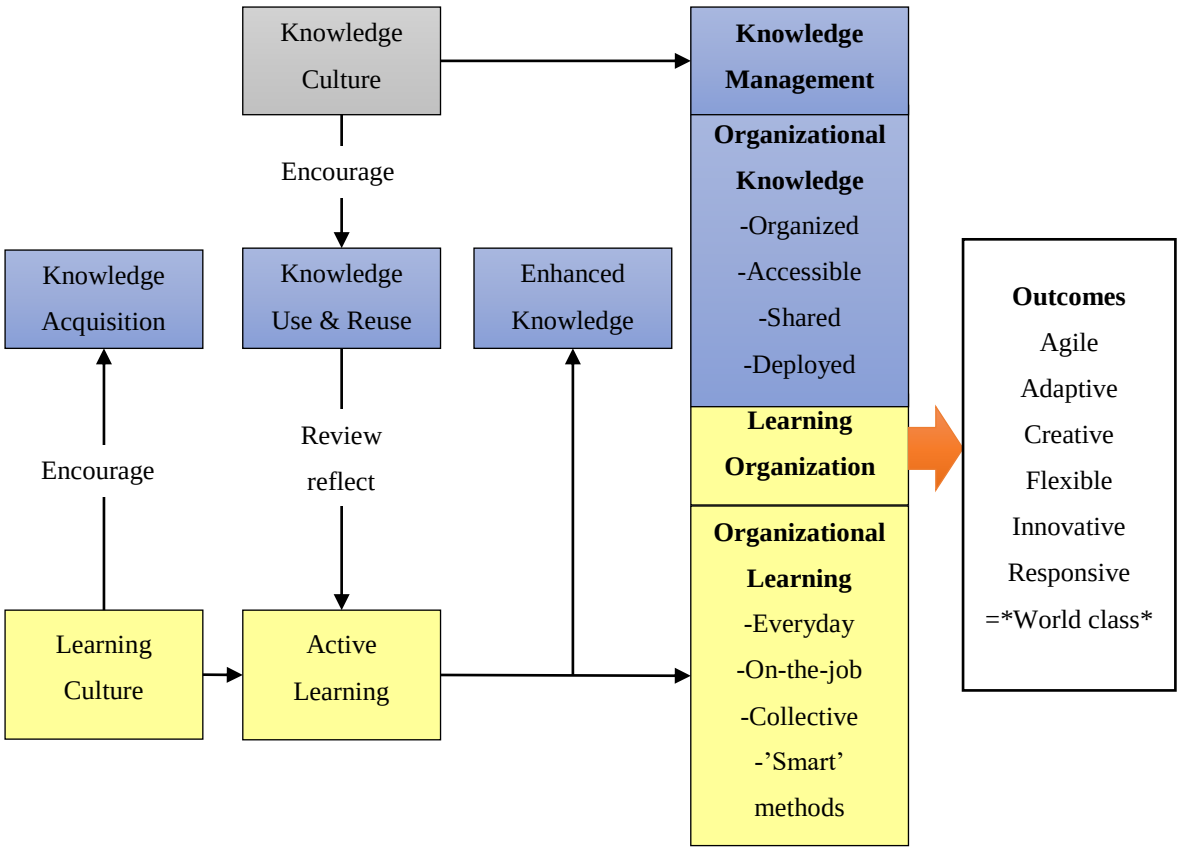


Figure 9: 'Learning and Knowledge Management' (Skyrme, 2010).

However, this definition suggests that a learning organization is connected also with the change management, which is left out from the focus of this subtopic. Finally, looking at figure 9 includes the outcomes of being a learning organization. Figure 9 shows how the organizational learning and knowledge management are tightly connected, as learning includes knowledge acquisition, use & reuse and enhancing the previous knowledge. These knowledge actions are part of both the knowledge culture, which encourages the learning activities from organizational learning, as well as the knowledge management, which includes the organizational knowledge and knowledge sharing.

4.2.1 Formal and Informal Communities

According to Jadoul (2013), communities may be formal 'Communities of Practice' (or COPs) or informal, often referred to as 'Communities of Interest' (or COIs). Formal and informal communities exist in several organizations, either physically or virtually, and they influence the knowledge sharing activities of the organizations. For example, as Dalkir (2010) explained, *"'communities of practice' (CoPs) are often key elements in ensuring that valuable knowledge flows or moves around appropriately."*

These communities of practice additionally influence the organizational learning, which makes the communities of practice interesting from the intergenerational knowledge sharing and organizational learning perspectives. Furthermore, Ardichvili, et al., (2002) open up the context of Communities of practice, as they are not part of the formal organizational structures, like the departments or project teams. Rather, CoPs are *"... entities, which exists in the minds of their members, and are glued together by the connections the members have with each other..."* (Ardichvili, et al., 2002). In the following, some examples of formal and informal communities and communication will be presented.

Formal communities of practice are related with formal communication and are usually organized by the organization. An example of a formal community could be the sales teams, which are organizing formal meetings within the team on a weekly basis for sharing the knowledge and news. Usually, the formal communication relates to more explicit knowledge rather than tacit knowledge (Jadoul, 2013). These formal communities of practice are technically like learning groups *"... where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to learn together"* (Peter Senge, 1990, cited in Skyrme, 2010).

Informal communities relate similarly to the informal communication, as the formal communities related to formal communication. However, as the informal communities relate to communities of interest (COIs), *"Informal communities host individuals that share a common interest or passion – which may be either work-related or non-work-related. COI members typically belong to different parts of the organization, may know little about each other, and have no other common interests outside of this area…."* (Jadoul, 2013). An example of informal community could be members of the organization, who used to work closely together, but advanced further in the organization at different speed and career paths. These employees share their 'interests', such as staying in touch with each other, although not working any longer closely together.

Therefore, formal and Informal communities are a massive concept in organizational learning and knowledge sharing. *"Both COPs and COIs are instrumental to activating and fueling Nonaka's spiral. Formal communities are mainly contributing to adoption and application of explicit knowledge, while informal communities socialize and externalize tacit knowledge"* (Jadoul, 2013). Similarly, as the 'SECI model' previously explored the knowledge transformation, figure 10: 'Modified SECI model' combines the knowledge transformation from a learning perspective including the informal and formal communities. This model introduces the formal and informal communities with a very clear-cut explanation for the four knowledge transformation processes of the 'SECI model'.

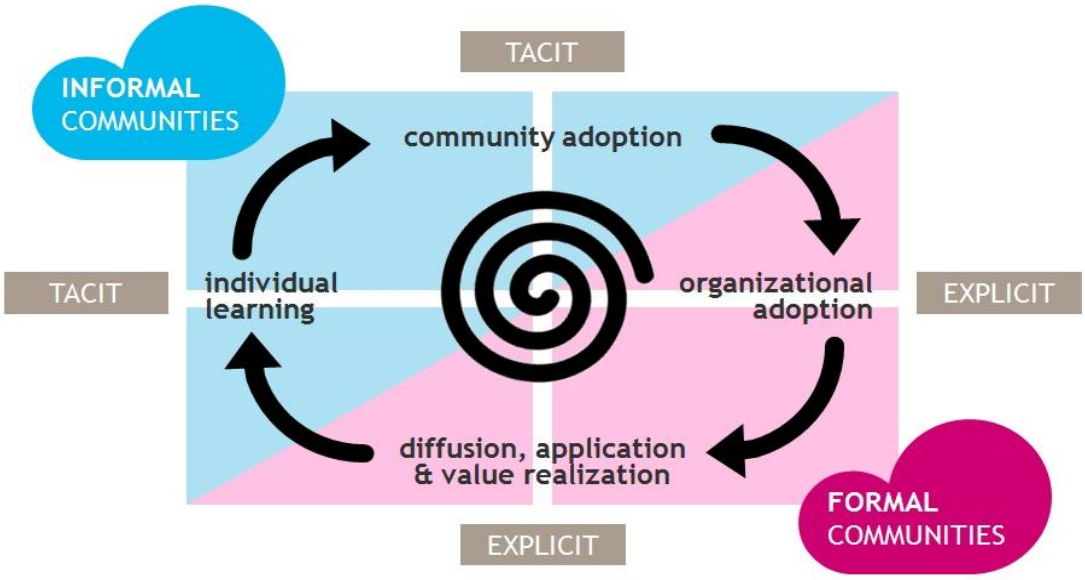


Figure 10: 'Modified SECI model' with formal and informal communities (Jadoul, 2013).

Chapter 5: Methods

In this chapter, qualitative methods will be introduced, which are used both in case studies A and B. In addition, this chapter will explain how the study is conducted, how the objects for study are chosen and how the data collection and analysis parts are conducted. This will give a transparent understanding of the methods used in this research project, while providing support to the findings.

5.1 Overall research strategy

5.1.1 Qualitative research

The qualitative approach was chosen according to the research questions, which are the following:

Intergenerational knowledge sharing	***How does knowledge sharing take place from intergenerational perspective in the case studies?***
Subtopic A	***What are the differences in the use of virtual communication for knowledge sharing in the case company?***
Subtopic B	***How do employees from different age groups feel they are learning the best and how is individual learning supported in the case organization?***

Qualitative methods for the research give the opportunity to study these questions, by interpreting the answers from practical perspective through effective identification of intangible factors, such as; values, beliefs, opinions, emotions and relationships of individuals, experiences, variations and group norms. Moreover, qualitative research provides the complex textual description of human experiences about the research topics and helps to understand the reality of the given situation.

5.1.2 Case study as the research method

Case study was chosen as the research method to provide a deep understanding of the behavioral conditions through the empirical perspective. By gathering qualitative data, case study helps to explain the process and outcome of a certain phenomenon and examine it within a specific context (Tellis, 1997, cited in Zainal, 2007). Case study research design method concentrates on a single entity with the researchers' aims to uncover the interaction of significant factors of the concrete case, and it focuses on

holistic description and explanation (Sharan, 2009). Knowledge learned from a case study is more concrete, as it links with a researcher's own experience to its vividness, concretion and sensitivity (Stake, 1981, Sharan B., 2009). Also, it helps to explore or describe the data in real-life environment by explaining the complexities of the phenomena (Zainal, 2007).

5.1.3 Interview as a data collection method

Semi-structured interviews were used as a qualitative data gathering method. DeMarrais (2004, p. 55, cited in Sharan B., 2009), defines an interview as: "*a process in which a researcher and participant engage in conversation focused on questions related to a research study*". This qualitative research method allows obtaining a special kind of information by entering the other persons' perspective (Patton, 2002, p. 340-341, cited in Sharan B., 2009).

Furthermore, semi-structured type of interview was chosen for the present research, as the interview guide contains the structured questions, which are used in a quite flexible way depending on interviewees' points of view during the interview (Sharan, 2009). Qualitative interviewing gives the opportunity to access individuals' attitudes and values, which are not possible to observe by using for instance, a formal questionnaire (Byrne, 2004, Silverman, 2011). Rapley and Weatherburn (2004, cited in Silverman, 2011) highlighted that interviews do not tell directly about peoples' experiences, but produces a representation of their views and opinions. For the further analysis, the interviewees are coded with the capital letters and referred to a particular generation, as according to their chronological age.

Interview guide for the research

The conducted interviews followed the same interview guide in both case studies. The interview guide was firstly made in co-operation with the international colleagues from the University of Hildesheim in Germany. Furthermore, the interview questions were later edited to fit the needs of these two case studies. The interview guide can be found in the appendix, at the end of the thesis. Information regarding the transcripts and their availability has been provided in the interview guide section of the appendix.

However, there were some limitations regarding the research, including the interviewee and company selection, due to the resource limitations. The interviewees were selected to be as diverse in the generational aspect as possible. However, some limitations apply as there were not equally many representatives from both generations.

5.1.4 Qualitative data analysis

The main goal of the analysis is to find answers to the research questions, by identifying segments of the data that are responsive. The segments are named according to the research questions, and based on the theories presented in earlier chapters. Categories and findings are the units of data that relate to a particular segment. Categories can be defined as abstractions derived from the data, *"They could be interpretable in the absence of any additional information other than a broad understanding of the context in which the inquiry is carried out"* (Sharan, 2009, p.177). The construction of categories is an inductive process, as the names of the segments have been created according to the data. However, the names of the segments are based on the previous research theories, as according to Sharan (2009), categories should be responsive to the purpose of the research; exhaustive, mutually exclusive, sensitive and conceptually congruent. Due to the fact that the main purpose of the research is to analyze the exact phenomena from intergenerational perspective. Furthermore, the comparative data analysis method is being used for analyzing the answers, from the points of view of the employees, corresponding to different generational groups within the case companies.

5.1.5 Empirical framework

In this part the practical point of view in the analysis will be explained. The analysis has been done as according to figure 11, dividing the data about knowledge sharing into the segments of data, which are related to knowledge sharing as an activity. In addition, these data segments respond to the research questions of the studies. The segments will provide this research a clear four step analysis process, in which the segments will be gone through with the generational comparison perspective. As the focus of the research is intergenerational knowledge sharing phenomenon in these case studies, the analysis will be done by using comparative data analysis method.

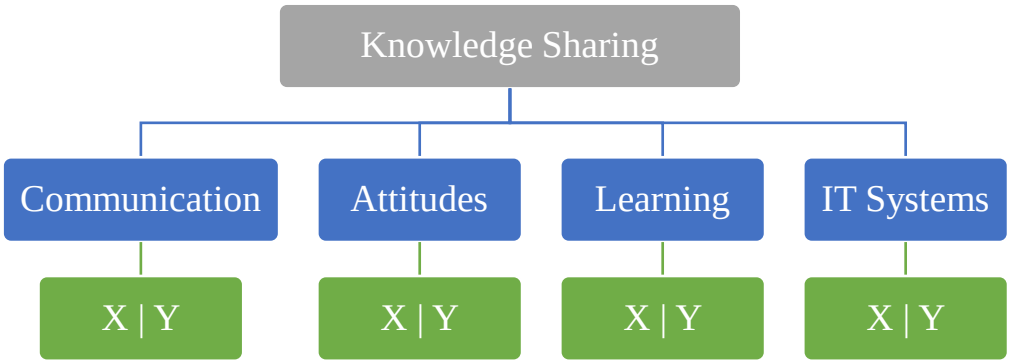


Figure 11: Empirical framework for analyzing knowledge sharing by a comparative generational perspective

Moreover, each interview question will have a generational comparison between the answers of the interviewees. The topic will be divided into knowledge sharing categories, which have been identified as a part of the data collected in the research. The categories are type of abstractions derived from the pre-analyzed data. The categories are; 'attitudes towards knowledge sharing' from an intergenerational comparative perspective, 'communication as in both through IT-systems and face to face', 'learning' through intergenerational comparison from knowledge sharing and finally the 'IT-systems', which are being utilized by the employees when sharing their knowledge amongst all the different generations inside the case companies.

In addition, intergenerational knowledge sharing is the process, which is based on communication both virtually and physically (face to face), between people from different age groups, which can create learning and new attitudes towards the discussion subject. This communication takes place usually between generations, such as X and Y generations. Reasons behind choosing this practical approach for analyzing the research data is supported by the focus of intergenerational knowledge sharing, as well as, by the subtopic focuses on organizational learning and communication in a virtual environment. IT-systems, communication and attitudes are strongly related to the virtual communication focus topic in the case A, while attitudes, communication and learning have a strong impact in the case B.

5.2 Case study A and B research strategies

5.2.1 Selection and motivation of the case companies

Case study A

There are several reasons why the company A was chosen for this research. Firstly, this company is established and located in Finland. Moreover, we were aware about the company's openness towards participation in the research study. In addition, the company's employees use numerous technology-related tools in their internal collaboration, which is essential for exploring the topic about virtual communication. Furthermore, this company fits to the research because their corporate language is English. However, it was understood that generational aspect might be a challenge, as the company is relatively young itself. But the fact that there are representatives of two generations was reasonable enough for choosing this company A as a case study object.

Case study B

Selection of the company B for case study B was relatively smooth but time consuming. Few companies were chosen as the possible participants to this project due to their area of business, diversity in the workforce and their ability to participate in the thesis project in a meaningful way. However, one of these selected companies proved their interest over others in participating and collaborating with this thesis project, and therefore, was chosen as the company for case study B. In addition, the company was considered suitable for the research, as there are multiple generations working inside the company and the field is heavily dependent on knowledge as a resource. In addition, there were requirements, such as geographical needs to have the company located in Finland. The selected company for case B provided a great possibility for this thesis to take place, through collaboration and support with the selection of interviewees.

5.2.2 Methods for subtopics

Subtopic A

Interview as a data collection method is used for the virtual communication research in subtopic A. Data analysis method is based on the idea of the grounded theory research method, but there is an important difference in the method used in this research and the original grounded theory. The original grounded theory method is used for constructing the theory through an analysis of the gathered data (Smith, 2007). According to Charmaz and Bryant (2011, p. 292, Silverman, 2011), *"grounded theory is the method of qualitative inquiry in which researchers develop inductive theoretical analysis from their collected data."* The grounded theory helps to develop analytic codes and categories for the data, and to build middle-range theories in order to understand and explain behavior and processes. Also, it delays the literature review until forming the analysis, which allows managing the study without being overwhelmed by the unrelated data (Smith, 2007). However, in this particular research, literature review was made simultaneously with the data analysis in order to build the correct theory, which would support the results of the research.

Subtopic B

The data collection method used in subtopic B was semi-structured interviews. The data collection was analyzed based on both the primary analysis method from the intergenerational knowledge sharing parts, and with the inductive approach, in which the research questions are used to group the data after which the similarities and differences are being observed (Haregu, 2012). By choosing the inductive approach, the content analysis became the most suitable method for analyzing the data collected. Content analysis provides a good platform for categorization of the verbal and behavioral data for the purposes of classification, summarization and tabulation (Haregu, 2012). Furthermore, Busch, et al., (1994-2012) describe content analysis as a research tool that is used to determine the presence of certain concepts and words within the data collection. There are different types of content analysis, but for subtopic B the conceptual analysis was chosen, as it can provide the occurrence of concepts within the data collection, and gives a thematic view to the collected data. Moreover, combining the primary and secondary analysis methods in subtopic B allows flexible analyzing method with a good level of comparison and thematic overview.

5.2.3 Empirical framework for case studies

Subtopic A

In order to find the answer to the research question, all the gathered data about the virtual communication were divided into three main segments, which support the main purpose of the subtopic research. Firstly, the analysis of how both generations see the benefits of virtual communication will be analyzed. Secondly, the ways how generation X and generation Y share online will be studied. Finally, how, according to the viewpoints of younger and older generation, trust is built within virtual environment. The figure 12, below represents the empirical framework used for analysis of the subtopic A.

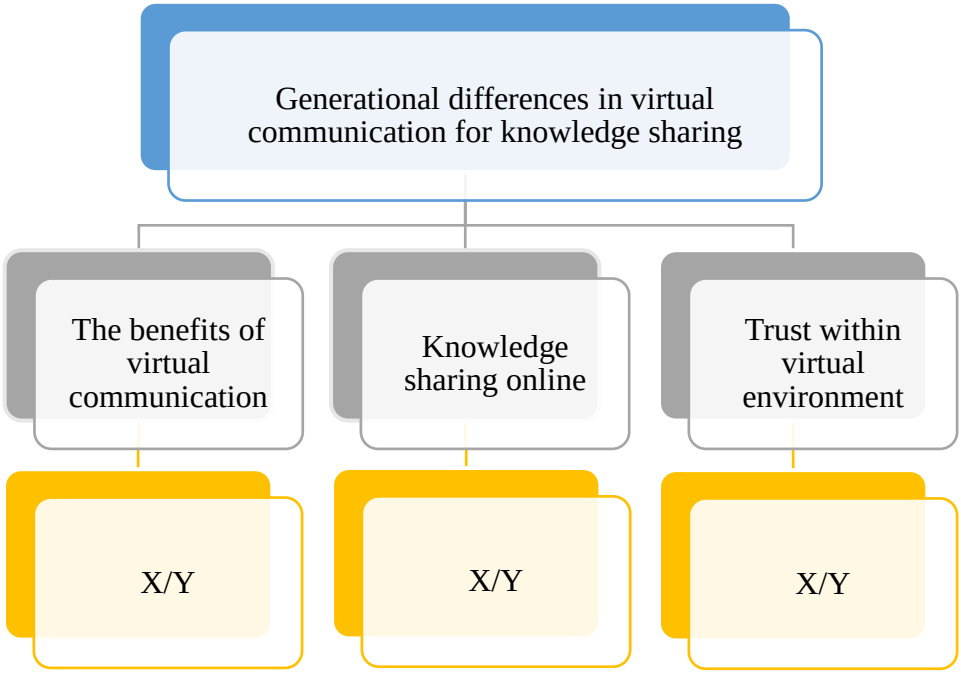


Figure 12: Empirical framework for subtopic A

Subtopic B

The empirical framework for case study B with the subtopic of organizational learning is explained in figure 13. The framework focused in inductive approach to the phenomena, and it begins the analysis from individual level and moves further to group and organizational levels of learning. The individual level is observed from similarities and differences in learning including the informal learning concept.

Furthermore, group level will focus on the formal learning vs. non-formal learning inside the organization with communities of practice perspective. Finally, organizational level will be observed from the global research focus with a twist of learning, knowledge sharing among the employees between the different generations of X and Y. The inductive method was considered the best for the subtopic B empirical framework as it will create a base for the larger concepts and analysis in the subtopic B analysis part. Furthermore, the analysis of the results will be done through conceptual analysis, in which the occurrence of concepts gives a good thematic perspective to the data collection.

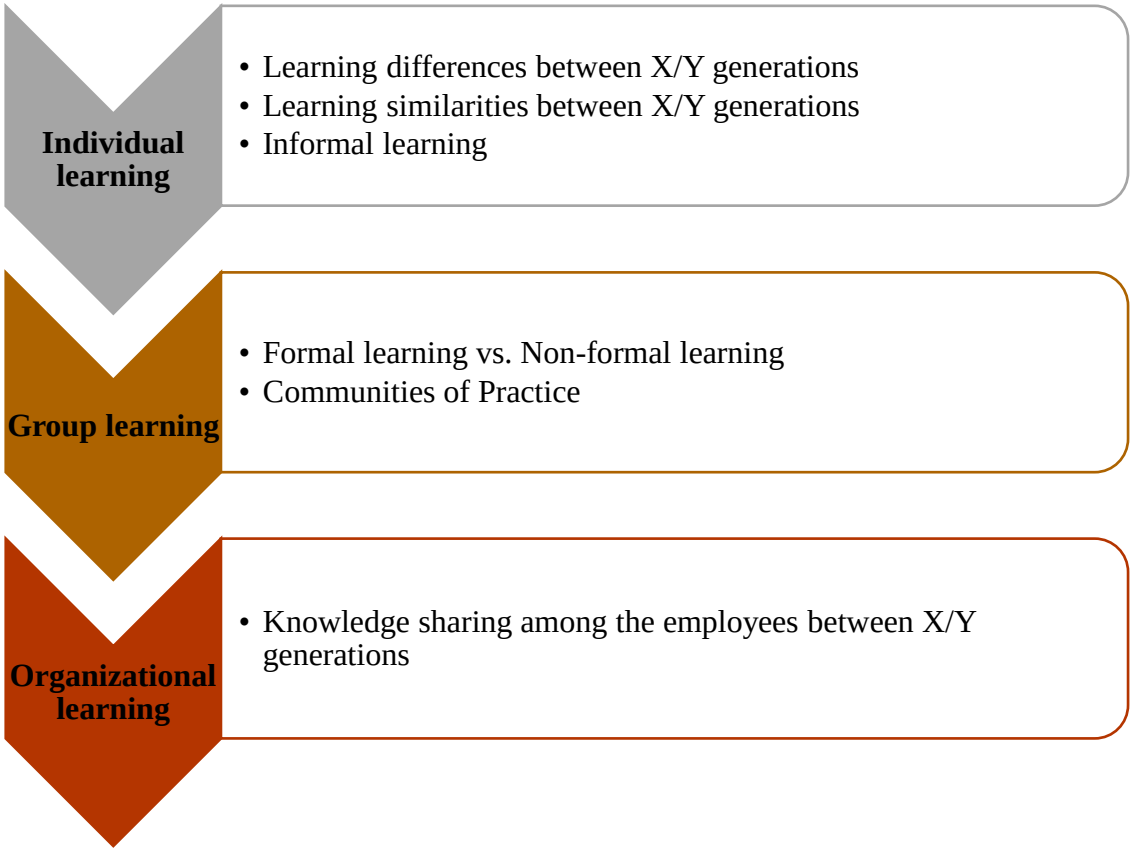


Figure 13: Empirical framework for subtopic B

5.2.4 Interview details for the case studies

Case study A

The interviews were conducted in several meeting rooms at the office of the case company A. Due to the fact that interviewees were aware in advance about the length of the interview, they were not in a hurry and had enough time to answer the questions in a proper way. There were no disturbing factors or interruptions during the interviews, which could possibly influence the gathered data.

All the interviews were audio-taped, and then the obtained voice files were transcribed into text-based format. An average interview duration was about 50 minutes. The longest took 57 minutes and 33 seconds, while the shortest lasted 45 minutes and 18 seconds. Three interviews were held on the 26th of May in 2016, two of them on the 27th of May, the next one on the 30th of May and the last one on the 2nd of June. Most of the employees in the Finnish office were representatives of generation Y and the minority was generation X. The fact that there were no Baby-boomers shows that all the company's workers are relatively young.

Person	Age	Working experience	Job position	Generation
A	25	4 months	Recruiter	**Y**
B	28	1 year	Sales manager	**Y**
C	44	1,5 months	Product manager	**X**
D	24	3 months	Office manager	**Y**
E	45	6 months	Scrum master	**X**
F	29	1,5 months	Developer	**Y**
G	32	8 years	Resourcing manager	**Y**

Table 1: The demographic information about the interviewees for case study A.

There are five members of generation Y and two employees are from generation X as seen in Table 1. Six of the participants are newcomers in the company with less than one-year experience. The exception is the resourcing manager who has been working in case company for eight years. The fact that this company was the first working place highlights the loyalty of this employee to the organization. The positions of the participants are quite diverse. In addition, one important finding to be mentioned is that participants from generation X were more relaxed during the interviews, one of them brought tea and another employee brought food, but did not eat it during the interview time. Generation Y employees were more concentrated and serious.

Case study B

The environment in the case B interviews was ideal for the data collection, as the interview situations were without disturbing noises or other influential factors. The interviews were conducted in a small negotiation room fitted for four persons with soundproof surroundings. The room was in the same building as where the interviewees were working on daily basis for the time of the data collection. The interviewees were participating in the research during their normal working day, and they had received a short briefing about the research they volunteered to participate in from their supervisor.

During the interviews, there were barely any interruptions. Therefore, the interruptions were not influencing the results of the data collection in any major way. The persons participating in the interviews were calm and prepared for taking part in this research. An average interview took 44 minutes 35 seconds; longest interview was 53 minute17 seconds and the shortest interview was 31 minutes 6 seconds. The interviews were generally conducted during the day time between 11:00 to 16:00 o'clock. In the following table 2, only the most essential demographical information is revealed, such as the generations, in which the interviewees belong to.

Person	Age	Working experience	Job position	Generation
H	47	15 Years	Sales team manager	**X**
I	24	1 Year	Telesales consultant	**Y**
J	40	1 Year 3 Months	Telesales consultant	**X**
K	25	1 Year	Telesales consultant	**Y**
L	23	1 Year 6 Months	Telesales consultant	**Y**
M	32	1 Year 4 Months	Telesales consultant	**Y**
N	26	9 Months	Telesales consultant	**Y**
O	52	32 Years	Telesales consultant	**X**
P	26	1 Year 6 Months	Telesales consultant	**Y**
Q	29	1 Year 1 Month	Telesales consultant	**Y**

Table 2: The demographic information about interviewees for case study B.

Chapter 6: Interpretation of results and analysis

This chapter will combine both research results and the analysis. This will be the base for the discussion chapter 7, where theoretical and empirical understanding of the researched phenomena are presented. Furthermore, chapter 6 will present case results and analyses individually, starting from case study A, and ending with case study B.

6.1 Case study A

The results and analysis of case study A are structured in the following manner. Firstly, we will describe how employees share their knowledge within the organization. Then intergenerational perspectives will be considered, based on the empirical framework in the contexts of communication, learning, people's attitudes and information systems. These four aspects will be analyzed from viewpoints of generation X and generation Y separately. In addition, the analysis of the results of the subtopic will be made by pointing out the possible generational differences in the use of virtual communication for knowledge sharing.

6.1.1 Knowledge sharing processes in the organization

Case company A operates in the field of Information Technology. It was established in Finland in 2001, and nowadays it has offices in two other countries. The number of the employees is about 100 in total. The company's values are transparent and presented externally on the corporate website, which facilitates building of the honest communication with the existed and potential clients. The organizational structure is flat, without strong hierarchical relationships and subordination boarders. The internal environment supports informal interaction and the openness of the communication within the company. Interviewee F (Generation Y) said that *"there are not too many supervisors here. The structure is sort of flat here. I asked a guy who is responsible for the framework. I don't know his title. I asked project manager to whom to ask and he said to ask this framework responsible guy. Guys who are working for a framework are sitting in a certain room so I can basically come to this room and ask everyone."*

There are two main strategies in knowledge sharing. The first strategy is based on codification, when employees codify their knowledge and store it on the platforms which are accessible by other workers. They share reports of their meetings, working documents concerning the product or internal business operations. Moreover, corporate intranet is used for information sharing in order to make it visible for all the colleagues. According to interviewee B (Generation Y), people in the organization share with each other numerous documents concerning business processes: "*But actually, we write down a lot of things. We have multiple spread sheets; we share documents with google*

docs about really common customers' questions. So if we have something out of the box, we added to this spread sheet in order our colleagues can follow up this thing."

The second strategy is based on personal communication face-to-face or virtually, and social processes that are taking place at the workplace. Knowledge is closely tied to employees, and therefore, it is shared through formal and informal ways of interaction.

Due to the technology field of business, all the employees see the use of technology as an important part of their job responsibilities, and as a tool for effective communication internally with the colleagues and externally with customers. Technology helps to integrate people and support the existed social ties with the opportunity to communicate virtually. All in all, technology supports codification and personalization knowledge sharing strategies of the case company. The most popular systems for communication and information sharing are demonstrated in the table 3 below.

Communication tools	Information sharing tools
Skype	Skype
Email	Email
Google plus	Google docs
Online chats	Google plus
Google hangouts	Online chats

Table 3: Systems of communication and information sharing in case company A

The chat for all the employees in Skype is the most usable tool for internal communication. They use it for both formal and informal interaction. Moreover, one-to-one conversations, group department or project based chats are also popular. However, only one respondent mentioned phone as an internal communication tool in the company.

According to the gathered data, one of the main reasons for using systems for interaction is the fact that their Finnish office is located on three different floors, and it is more convenient to use skype or email. For information sharing employees use google documents, google plus which is an internal social media platform and company's intranet. In addition, skype and e-mail are considered as information sharing tools. Moreover, the company uses video conferencing tools for communicating with clients, partners and their offices around the globe.

According to the results, the management of the company initiates learning and knowledge exchange in the forms of tooling and corporate education. For example, employees have Monday morning meetings for the whole company. On Thursdays, there are meetings for employees who hold technology-related positions. Moreover, there are weekly meetings within working teams. Also, they have the practice of creating home-based teams which are different from working teams. A home-based team is made by selecting people from different departments and gathering them together to share diverse experience. Furthermore, the management of the company organizes workshops and adaptation trainings for newcomers in order to get acquainted with the company and the internal processes. Also, the company facilitates informal interaction by organizing corporate events for gathering employees together in informal environment. One of the members of the older generation stated that *"formal techniques and formal events give people the opportunity to share what they want to share. And people tend to like to share a lot. And also there are informal ways like company encourages people to spend time together outside of the office as well. I think that's part of implicit knowledge sharing when you get to know people and also ask professionally different kind of questions. And trust of course is always the keys in knowledge sharing. When you trust someone then you can share even crazy ideas."* (Generation X – C)

The existence of the responsible for knowledge sharing people like Scrum masters or Resources manager makes the knowledge processes more effective and sufficient. They are taking care of the communication within the teams. In addition, they facilitate coaching and learning sessions for the teams of developers.

Furthermore, the resourcing manager is also responsible for the exchange of relevant knowledge between the particular employees. He described it as "*I think about sharing technical knowledge from my perspective then it might mean that I know that one person is going to work on a project that requires some technical skills that he doesn't have but I know that there is another guy who has it then my job is basically to meet them together and make sure that knowledge sharing will happen." (*Generation Y – G) The summary of how knowledge sharing is taking place in case company A is presented in the table 4 below.

Knowledge sharing in the case company A		
Personalization strategy		Codification strategy
Formal interaction	Informal interaction	Information technology systems
Meetings	Informal face-to-face chatting	Intranet
Social structures' communication	Corporate events	System for sharing, retrieving and saving the documents and reports
Learning initiatives of the management	Virtual communication	Corporate social media platform

Table 4: Knowledge sharing in the case company A

There are different contextual factors that influence knowledge sharing processes in case company A. The flat organizational structure is based on the openness among all the workers and absence of hierarchical borders. The variation of forms of social structures (project teams, working teams, home-based teams, virtual communities) increases the frequency of communication and the opportunities to communicate with different people within the company. This leads to the creation of a comfortable working environment and affects the level of trustworthiness. Trust is a very important prerequisite for knowledge exchange in case company A, as people receive knowledge and accept it as reliable and competent.

Moreover, frequent communication strengthens employees' feelings of being active participants in the company. This fact enables the existence of the sense of community with the shared norms, values and culture. The organizational culture promotes free-flow of information and informal communication among all the workers including interactions within the different departments.

6.1.2 Communication

Generation X

Interaction with the colleagues is considered as part of their daily work responsibilities. Generation X easily share their experience or stories related to a particular topic. The occasion does not play an important role, and knowledge sharing can take place during a meeting, online discussion or informal conversation: *"Usually in this company so far in the group situation when people don't know what route to take and I might share my story how I have handled it before or I just express my view about the topic. Usually in the meeting with my product managers' colleagues but in this company actually it does not depend on the channel. Sometimes we can talk near coffee machine, here you can freely pick up a conversation with somebody"* (Generation X – C). Personal face-to-face communication is more preferred than online interaction due to the possible risk of misunderstanding or getting the ideas in a wrong way. However, no-urgent and quick questions are usually asked online by Skype or email in order to save time.

One of the members of older generation does not notice any age difference in communicating with younger colleagues, but he sees the existence of cultural differences based on the characters of Finnish people. He claimed that "*no, I haven't noticed any age difference. I don't know if it's just my personality or anything else, but I always have stories to share. Yeah, but it's important to mention that most of the people here are still Finnish and it's a Finnish cultural thing that most people don't speak necessarily. I've been working outside Finland in different countries and different companies but I had this feeling that people are a bit more talkative"* (Generation X – C).

However, according to the scrum master, the intergenerational difference exists, and it is based on the barriers of older and younger people to ask each other for help or advice: *"It might be for the younger people is that they have certain respect to older and more experienced guys and they might be a little bit afraid to ask. More experienced guys are in some cases might think that they have so much experience so they don't have to ask, they don't notice that these younger guys might have some new and fresh ideas. But they are so stuck with their own way of working and their own technical experience so they don't understand when to ask from the younger guys. So there is a gap. I try to narrow it but it's always there."* (Generation X – E)

Generation Y

Skype and email are preferred ways to communicate in case of time saving and without disturbing another person with face-to-face conversation. However, if the right person is in the close proximity, verbal interaction is used. According to the younger generation, face-to-face discussion gives the chance to receive the answer immediately and reformulate the question, if it is necessary. Due to the fact that four out of five generation Y interviewees are newcomers in the organization, they prefer not to share their stories in the company during informal conversations or online discussions. However, they are open for communication when someone asks them directly or during the formal meetings: *"Every time somebody asks me. Plus, we have these weekly meetings where we share it with each other if it was not too common case and in our team we share it every time after a phone-call. Somebody asks you how did it go and you explain it in a few sentences what happened."* (Generation Y – B)

The decision about with whom to talk about a certain problem depends on the experience or knowledge which colleagues possess. Age might be an issue, but in terms of experience as, for instance, for interviewee G (Generation Y) an older employee is considered as more experienced in a particular topic. He pointed out that: "*if I am asking for advice, the age could be as issue but it depends again a lot. For example, experience is something that I most probably run into. In my job when if I ask for some people's opinions and I ask another supervisor because he knows things better and it's the knowledge he has. And it has nothing to do with the experience or his age. He is the depth source of information."* The older generation is seen by the younger employees as

'young spirit' individuals due to the nature of their work. There is no a huge age gap among people working in the information technology company.

However, experiences difference exists and "*more experienced they answer quicker and also they might not be going into details because they expect that you know the basics which might be true. I didn't see any age difference so far. Maybe people who are working here for a longer time they can share more and also they feel more free to do it probably."* (Generation Y – F) Furthermore, the younger generation notices cultural and individual differences among the company's employees. One of the aspects of the information technology field is the fact that age does not necessarily relate to an experience. The concrete context might play a more important role in the way that a younger person has more experience in certain activities than an older worker. In addition, interviewee G (Generation Y) stated that "*if a person has a lot of experience it doesn't necessarily mean that he has experience in topic we are particular discussing. So it might be that we have an employee that hasn't been for working for more than two years, but these two years were spent working on exact issue or some topic so of course in this topic he might me more senior than a guy who has thirty years of experience. Again it depends on individuals and on the topics we're discussing and so on."*

6.1.3 Learning

Generation X

Asking people is the first thing that the older generation do in order to find the solution to the problem. If it does not help, then they try to search for the information online on the pages of the corporate intranet or in the internet. However, if they do not know with whom to discuss a certain situation, they feel comfortable to ask the other workers about it: "*I don't know all the time with whom to talk but I just need to find the person. Usually I discuss about it with other guys who are might know with whom I should talk to."* (Generation X – E)

The older generation see the discussions with the colleagues as a learning tool, as they consider all company's employees as the competent professionals*: "But it's easy here to learn new things because all the people are so smart and they know what to share and also easily understand what for example my questions are. And the most important thing is that people are willing to share." (Generation X – C)* They also feel that in

order to learn and memorize new things they need to discuss it with the experienced colleagues. *"Sometimes I read something to get the ideas but then I need to discuss them with others to validate my opinion and also to get some other insights to what I just read.* (Generation X – E) According to interviewee E (Generation X), the age does not influence his learning processes: "*I try to memorize and be open. And also try to understand always why he is behaving that why. Try to get the ideas what are the reasons behind that behavior and this is an important information for me. At least I try to learn almost from everyone during the discussion or meeting."* (Generation X – E)

One of the important features of older generation is the willingness to share their personal findings and 'aha-moments' with the colleagues. Usually they do it by using online group chats or corporate social media platform Google plus. Interviewee X (Generation X) said "*I start with the certain part based on my 'gut feeling' and then I try to find information from people or dig into the information pool by finding scientific or numerical proof. Sometimes it could be a topic which I actually have no idea. Of course I have some idea but in order to be sure I do some investigation and analysis. And then share this analysis with some other people and it might be some determination. Not always, but usually yes*." The same is mentioned by interviewee E (Generation X): "*I might write something into our skype chat or somewhere else in order to share with the others. So it's not for me but I want others to know about it. It might be relevant information for my colleagues as well."* (Generation X – E)

Generation Y

The first action which is taken by the younger generation to solve a particular problem is searching for the information online. The next step is asking a supervisor or colleagues for help. "*I try to figure it out by myself and if I don't know than I ask someone. When I am searching for myself I use systems that we have all the information. It's easy to find information there. If it's informal I ask my colleagues who sit next to me. If it's about my task, then I ask my supervisor. And if it's more like practical than I ask a colleague who has worked here for several years."* (Generation Y – D). Interviewee F (Generation Y) pointed out: "*I google a lot and try to find the solution. And if I cannot then I try to find the person who will help and ask them. Usually they either answer or they direct me to the solution and then I google some more."*

There are different approaches of how younger employees feel that they learn at work. Firstly, it is happening by trying new tools and technologies. Secondly, they learn from the colleagues who share their experience during the meetings or working projects. Generation Y claims that they do not pay attention to the age of the person from whom they learn new things: "*I noticed that age doesn't matter. It's the individuals. And I don't mind if I learn from someone who is a lot younger than me and I don't mind if I learn from someone who is much older."* (Generation Y – G). Moreover, they tend to adopt older colleagues' advice in a way they want it to work for themselves: *"Of course I want to hear about this practices but they don't necessarily mean that I will use them. It might be a bit different when you do a technical work but I don't do technical work."* (Generation Y – G) However, learning processes depend on the position of an employee. For example, if the person holds a unique position, such as recruiter or office-manager, the learning opportunities are limited due to non-existence of more experiences colleagues in this area.

6.1.4 Attitudes towards knowledge sharing

Generation X

From the older employees' perspective, knowledge sharing happens during the formal meetings and informal interaction outside of the office. They feel that formal meetings, workshops and events facilitate knowledge sharing among all the workers. Moreover, trustworthy relationships with the colleagues enables the easiness of collaboration supported by IT tools. Generation X feel comfortable to collaborate and work in a team. Interviewee C (Generation X) noticed: "*But I like teamwork much more. I'd rather listen to everybody else and if they're all wrong then I can say 'no, you're all wrong' or something like that. I like working in teams. That's why I prefer to come to office rather than working from home.*"

One of the reasons for this open relationship might be the induction system for newcomers with the aim to help to get to know everyone, feel free to communicate and ask questions. "*It's not easy to find relevant information but because the induction was good enough and by now I know most of the people and whom to ask and also I am aware of formal places where information is shared in this company. Now it's quite obvious to me and so it's easy to find. Even different teams in our company share the*

*information which is available and open. I have a buddy from the beginning who is a senior employee here. And a buddy has a check-list of things that he or she needs to go through with a new employee. So within 3-5 days you're introduced to everybody, basically working around and saying hello." (*Generation X – C)

Generation Y

The younger members see knowledge sharing as an opportunity to share the documents, reports and information by using common supportive systems like corporate intranet or Google docs. Moreover, knowledge sharing processes are taking place during online discussions on Skype or by using other group chatting tools. Generation Y feel that there is an open atmosphere in the company. According to interviewee A (Generation Y), "*everything is quite open here. For example, we have all the reports about team meetings, weekly meetings open, so everybody can go through them and also the management team meetings. We also have different channels where if you need help you can ask. And we have this skype channel and everybody is there. And it doesn't matter what your question is, some coding tasks or about the weather, or whatever, you can ask and usually you will have an answer. So I think we have quite open-minded environment all in all."* Interviewee B (Generation Y) also highlights the existence of different information and communication technology systems in the company: "*There are lots of actions and forms of tooling. We share folder and documents. We have a database where we share everything internally: spread sheets, all kind of guidelines, from every singles meeting, from every department, everything from the meetings are posted even from board meetings. We are using Skype. In sales department we use skype, we share all the documents within google docs, within the chat we have separate chat windows which we can use for internal communication."*

Generation Y feel positive about the possibilities to communicate through systems and also find relevant information: "*There are also documentation and tutorials about the framework, but it's not for the company, it's for the users and community. Skype groups as well. There is a general skype group where there are lot of important and also not really important information. Also team chat group where you can also share knowledge" (*Generation Y – F). Moreover, meetings and conversations with the colleagues are also considered as an important activity for knowledge sharing.

Interviewee B (Generation Y) stated: *There are different kinds of meeting which are open for the whole company and we communicate quite a lot within them. We have weekly meetings where we tell all the company what's happening. When you talk about technical knowledge, then we have different kinds of events where we share technical knowledge."*

The younger generation feel comfortable to ask the colleagues if they need to find relevant information about their working tasks: "*If I need to find out some information when I go to people." (*Generation Y – F) Interviewee B (Generation Y) pointed out that "*asking people mostly. And googling because a lot of information is in the intranet and in blogs. We also have webinars which is not for us but for users of the framework. But we can watch it and find something relevant for us as well. Documentation is pretty good here." (*Generation Y – B)

The younger employees also assume that they share their knowledge by participating in various meetings and in the situations when somebody asks them for help or a piece of advice. "*Within our team meetings I think every time I share because each of us explaining what they are doing. We are kind of forced to share. But if one of us tries out a new tool, we share immediately when we find out them, because it might be useful for our work. So we try to share as much as possible." (*Generation Y – B) Interview A (Generation Y) described her role in knowledge sharing in the following way, "*I think I do share knowledge. As I am the only one who is doing recruitment here so when I am doing it than I am of course collaborate with the different teams so I think that they learn something from me if they want. And maybe then they have some new thoughts about how we can recruit new people and so stuff. I hope that they learn something from me too. (*Generation Y – A). From this we can draw the conclusion that the younger generation share their experience when some of the colleagues express the interest about it. Moreover, formal meetings are also considered as knowledge sharing facilitators.

6.1.5 Systems

Generation X

Most of the systems that are established in the company are in the active use of the older generation. They do not find any difficulties in using them but interviewee C (Generation X) assumed that some of the newest technologies he most likely will not use, as he did not use them before. As an example, he mentioned the video taping of the meetings: "*Although, I think there is nothing to do with age here. We do communicate and record the events and then to put it to video blog. This maybe the thing that I personally haven't used to do. This maybe about my age. In the 90s there were not video blogs at all."* (Generation X – C).

According to another member of generation X, the older people prefer to stick to well-known communication tool like Skype, and feel reluctant to try new systems, compared with the younger generation who is more open for the experiments and testing new tools: "*I think that there is a pattern in that older guys use more skype, they are more stuck in that. It might be that younger are more open to try new tools. And they want to experience things and want to be very active and efficient in the communications so they're trying to find the best tools for this purpose. For example, they realized that in skype there is missing something that they want to have and then they try another tool and find this missing feature"* (Generation X – E). Also, he mentioned that there is a difference in the way how the older and the younger employees test new systems: *"Older guys are much more slow to change, they want to experience many tools at once and then make a decision that 'ok, shall we change from this to that', and it takes several weeks for the process if you want to try different tools and finally they stuck with one exact tool for a year. And during that time younger guys have been trying a lot of new tools and they have changed the tools on the fly. Older guys want to see all the possibilities, try them and then change. But younger start using them immediately and then change from one to another unless they find the best one.* (Generation X – E)

Generation Y

The younger employees emphasized their preferences towards face-to-face communication on the first place, but also mentioned, that using the system is a common practice in this company. "*For communication I prefer my face and my voice. I am trying to talk face-to-face as much as possible. Then email is something that we use quite a lot. Then skype as well. On some occasions we use google hangouts. And in some cases especially then talking with other people like partners or people outside of the company we use different set of tools. It depends again with whom we talk and about what we talk. And my phone is also important tool for me."* (generation Y – G) The decision to use the system instead of personal interaction is usually based on the type of knowledge or information that needs to be transferred: "*With face to face I can discuss cases where I have background knowledge, but a customer asks me a really technical and specific question how to do something within the code then I would never be able to communicate that in verbal form. I would need that to be written down because it's too complex to remember it if you don't have knowledge how to do it."* (Generation Y – B)

The younger generation use all the established systems and the particular systems related to specific job positions. For instance, the recruiter uses systems for retrieving information about the candidates. The sales department uses particular systems for invoicing and developers have their own developing tools. Younger employees do not see any age differences in the use of systems in the company, as all the employees in the technology industry have an experience of working with IT systems: "*I think because we don't have really old employees and the age difference here is like from 24 to 45 so we don't have like really old people. But maybe it could be that we have some people who didn't' work with this kind of channels before. And of course the fact that we're IT company so it's normal thing to use this kind of different systems all the time. (Generation Y – A)"* Interviewee B (Generation Y) highlighted, *"it always depends. I think it links with the previous experience. I think overall within this company almost everyone learns really fast. But also, based on the IT-background"*.

6.2 Virtual Communication

6.2.1 The benefits of virtual communication

Generation X

The results of the interviews suggest that generation X see the benefits of virtual interaction in the synchronized function of the group chats. It is convenient that people can join the discussion in different periods of time and have the chance to become acquainted with the content of the conversation. *"If I want to lead the track. If I want to share something which would be visible for the others and everybody will have the chance to return to that."* (Generation X – E) Moreover, employees can decide whenever they want to participate in virtual communication. "*You don't need to be present in every second for doing conversation and without disturbing people. For example, if you want to leave during the meeting it would probably be socially not acceptable. But you can easily in and out of group chat and people won't even notice it."* (Generation X – C) In addition, interviewee E (Generation X) pointed out that sharing information online with the colleagues is the way to memorize things by himself.

Generation Y

According to the younger generation, virtual communication provides the opportunity to obtain the answer to the question much faster than by doing it in person. Furthermore, it helps not to disturb a concrete person if he is busy. In addition, technical information is easier to send or forward than to explain verbally. *"I think people here do like online more. Because we have 3 offices in this building then it's more efficient to ask online if a person is in the other office. So it depends on distance. Or if there is a silence in the office and everybody is working then I might ask online in order not to disturb."* (Generation Y – D). In addition, virtual communication tools give the opportunity to share information with many people during short period of time. From interviewee A's (Generation Y) perspective, a group chat within the whole company creates a community feeling among the employees. However, interviewee G (Generation Y) emphasized his preference for face-to-face interaction in the first place due to the fear of misunderstanding certain things.

6.2.2 Knowledge sharing in virtual communication

Generation X

For the older generation, sharing opinion online and following group discussions are considered as a typical and usual activity at work. *"I feel that it's part of my job. When people have a tendency to share then you also willing to contribute back. And it's also fun. Talking to people is fun."* (Generation X – C). However, interviewee E (Generation X) who holds the position of scrum master in the company, highlighted that he is not very active in the discussions, as he wants his team's members to find the answers by themselves. He stated that he shares his opinion by asking related questions or giving an idea of how a particular issue can be solved, but he does not give the answer straight away*." If I see that they get stuck then I can guide them a bit like 'ok, this is the why how you can commit' but then again, I want them to go a bit further. And I like to keep it that way because I don't have all the answers. I don't want to give the impression that I have the answers. But they should know that I have some ideas and then they might ask for those ideas but not the actual solutions"* (Generation X – E).

Generation Y

According to the results, all the interviewees from generation Y do not actively participate in virtual discussions. There are several reasons for that. Interviewee A (Generation Y) explained it as her job is specific and unique and she knows in advance that other employees will not help. Moreover, she feels that she is not able to help them with their technology requests either. Interviewee B (Generation Y) emphasized that he is active online only when he needs to share a new tool or urgent information. *"Well, of course, if we have a problem for the company, we share it asap, for example, a problem with the website, so we need to reach out people from marketing team who take care of the website. We also sometimes have problems with our CRM system, so we share within the team or with everybody who uses this system and we file a message to a system provider in order to fix it as fast as possible. So usually it's when we run some problems."* Another reason for non-active sharing is the particular personality of the workers and their attitude towards willingness to share information with more than a few persons. For example, interviewee D, *"I don't like to message in medias that are formal and everybody can see it. Of course it's my task to do so and it's online and it should be easy. But I check it many times if there are mistakes or if it's correct. It's*

about a group size. I like to have person to person discussion rather than group discussion if it's more than three people. It's more difficult for me and I don't like it ". Interviewee G (Generation Y) added *"I read a lot. I don't participate that much. It depends again on the topic and how broad is the audience. If it's a small group of specialists and we're deciding about something specific than I'm more active. But if it's broader discussion within the whole company when I might be not that active. Of course I say something if I have something to say. But rarely I don't have that much input that I want to give to the situation".* Interviewee F (Generation Y) explained that he is not active in sharing, due to the fact, that he is a newcomer in the organization. *"I should. I don't. Here not yet. I am new here so nothing yet has come to my mind."*

6.2.3 Trust

Generation X

According to the older members, the basis of trust is the corporate culture and internal environment that support informal communication. *"People are willing to share and discuss different topics. And havening not-job related chat helps as well where people can share silly internet images and whatever they want basically. It's like a Facebook wall and then you can see what are the interests of people and just laugh and these sorts of things. That's why it's good that it's the same system."* (Generation X – C) Moreover, the freedom and flexibility in organizing the work is the basis of trust in this organization. *"People trust each other here because they get very much freedom to decide about the tools and their work. So they get freedom and they also want to take the responsibility on the directions. So this I think lead to the culture where everybody trusts each other by default."* (Generation X- E). Trust within virtual environment is built on the belief that all the employees are doing their best at work, and interviewee C (Generation X) stated that he does not have any reason to doubt colleagues' knowledge: *"I don't have any experience that would give me a reason to doubt in what people thinking, saying or writing. The intranet is not internet. It's a different context. I tend to trust people here."*

However, there are two main barriers that could prevent trusting particular shared information in the virtual environment. According to interviewee C (Generation X), if knowledge is shared by a person whom he has not met in person: "*If you don't know a person, about the experience and background or you never had one to one discussion with him then you're naturally more suspicious. What is why, I try to meet with everybody I work with face-two-face at least once or twice. So it's easier also to trust and to collaborate."* Furthermore, according to interviewee E (Generation X), he might not trust online information because of his personal characteristics and his preference to recheck it himself. *"I am a bit skeptical by nature, but I could change my mind easily if there is a reason for that. So I just dismissed if I would not agree, but I would check. At least, I don't want to admit that it's about the person who says that because usually I don't even read from whom the answer came from but it's just about the feeling that what would I get from."*

Generation Y

According to generation Y, trust within the virtual environment lies in the personal relationships of the employees and their attitudes towards each other. They believe in the high level of professionalism of the co-workers. *"All the employees here are super talented and smart people and I really trust all of them so I cannot think about anything why I could not trust"* (Generation Y – A). Moreover, according to interviewee A (Generation Y), trust facilitates the achievements of common goals: *"it's the basis of everything that you have to be able to trust your co-workers without that we would not have had the whole community as a company. Otherwise, we should not have been working together."* Generation Y thinks that trust in real working life leads to trust online. In addition, the freedom and flexibility at work are also the basis of trust. As interviewee G (Generation Y) pointed out, *"you could say that when you get flexibility you get responsibility. And if you carry this responsibility then you gain trust. If you don't then you lose trust."*

Furthermore, due to the employees' loyalty to the company, they believe that all the hired colleagues are the experts in their field of expertise. Interviewee F (Generation Y) stated that he trusts information which is shared by the employees online "*because people here are professional developers. Obviously, I don't know all of them but they are hired by the company which I know. So I think they don't tell random information which is not true. I don't think they share the information in which they are not certain. Of course, it can happen but I think most of the time is trustworthy."* Interviewee B (Generation Y) agreed that *"In general, all people here know that we're all hired because we're quite good in our particular field. And if you have any question about some of this field then you'll know that this particular person would be perfect for you."*

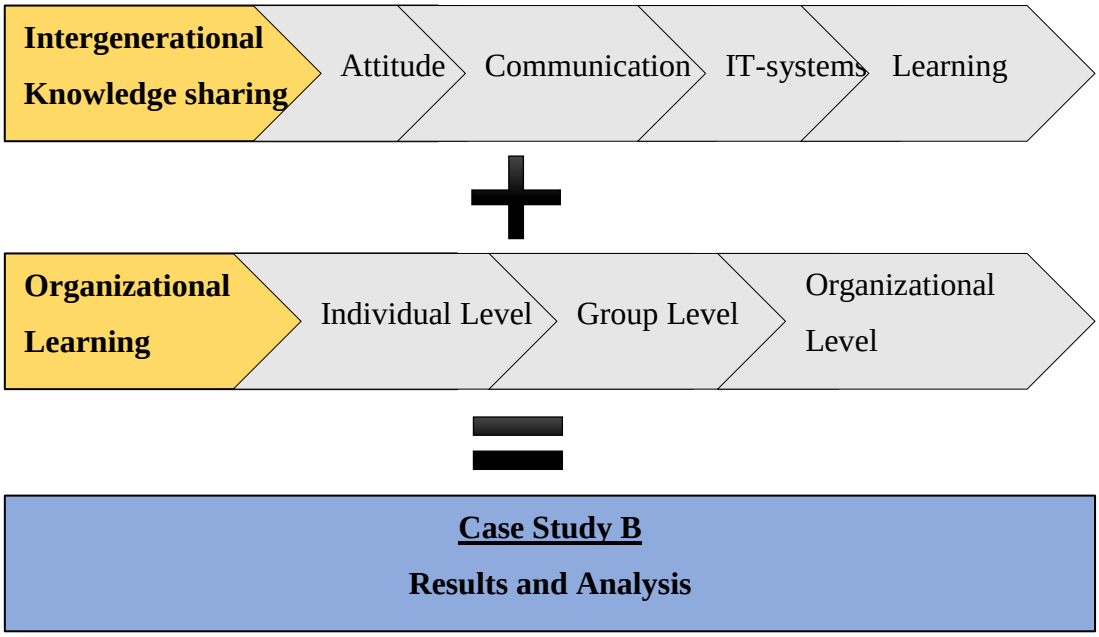
However, due to the field in which the company operates, generation Y highlighted the importance of making sure that certain information is updated. *"So especially then it comes to a technology, you have to be really clear and double check everything. If I find something in our forum it's trustworthy source usually, because I know all of our developers, and if I see that it's marked when I see that one of them gave the solution I would trust his opinion, but I will try to reach out this specific person again via skype 'hi, is it still working this way?'* (Generation Y – B).

Experience of the colleagues influences the decision whether to trust shared information online or not. *"If you know the experience of a certain person then it obviously helps a lot. You have to know their experience not necessarily in the company but in general. Otherwise, you just have to try their suggested solution and if it doesn't work then don't trust them again."* (Generation Y – F) When a person needs to find out the answer for a specific question, experience and job titles are also playing a significant role: "*We usually ask internally, if it's about a specific tool, who's the developer or the expert for this tool and then I try to reach out this specific person or more if it's about the whole department of course."* (Generation Y – F)

6.3 Case study B

The case study B company operates in the finance and insurance field within the Nordic countries. The research results derive from ten interviews made within one sales team in the company during the summer, 2016 in Turku, Finland. The interviews in case study B were conducted first in Finnish, after which they were transcribed and translated into English. The results are viewed and analyzed with the empirical framework for the main research focus (see figure 14), while the subtopic has a different empirical framework approach as explained in Chapter 5. This result and analysis part has been structured so, that the focus of intergenerational knowledge sharing will present results in each of the four segments mentioned in the empirical framework. Once the results have been presented in each segment, they will be followed by the respective analysis for the specific results in that segment. These analyses will be summarized shortly at the end of the four segments, after which the subtopic results and analyses will be presented similarly accordingly to the subtopic B's empirical framework.

Figure 14: The structure of case study B: Results and Analysis section



6.3.1 Intergenerational knowledge sharing

Generation X

Generation X considers communication and knowledge sharing generally important and as a daily part of their working tasks: *"General knowledge sharing takes place on daily basis and there are age differences. Here I count myself to the 'older' population group"* (Generation X- J). They see themselves as the knowhow database for the younger employees and want to help each other to succeed in the work. For example: *"Employees from all age groups tend to ask for help, but the newer employees have lesser knowhow than the senior"* (Generation X- O).

However, when being asked about their knowledge sharing with employees of different ages, they consider that the age is not an influencing factor when talking about the intergenerational knowledge sharing: *"I don't consider the age to influence knowledge sharing, it is something else"* (Generation X- O). While discussing indirectly about knowledge sharing between different age groups they considered there to be some differences. This could be part of the reason that the generation X values intergenerational knowledge sharing through the broader scope with additional features included, such as; cultural, environmental and social. This leads the generation X to consider the differences to be rather about the personalities of the employees: *"I don't see differences in the ages, rather in the personalities. Depends on the personality and working methods, not about the age that much"* (Generation X- J).

Furthermore, knowledge sharing within the virtual systems seems to be an important aspect of the case study B, and the generation X employees note it by recognizing the benefits of it. For example: *"Communication and sharing knowledge through systems is beneficial as it is visible to everyone and spreads further"* (Generation X- H). This will be further analyzed in the later part regarding the IT-systems with additional results from both generations.

Generation Y

Generation Y employees from the case study B are the younger generation and have received their work training recently. During their training, they learn the necessary skills and knowledge to perform the working tasks, but for all the different customer cases and problems they are advised to ask 'veteran' employees for help: *"New employees tend to be advised for asking help from the 'veterans' of the team, if nobody else knows the answer to the question"* (Generation Y- P). This can also influence how the generation Y employees are seen rather individualistic and self-centered occasionally. Furthermore, generation Y similarly to generation X doesn't seem to find any major differences in knowledge sharing from the different in age groups: *"The age differences are 'so so', I don't think much about them"* (Generation Y- M).

Furthermore, this is being supported by few other statements, such as: *"Knowledge sharing is not necessarily so much dependent on the age, rather the human type. Some share, some don't- would be nicer if we shared more"* (Generation Y- N). This would lead into a conclusion that the age differences are not either noticeable in the case study B, or that the employees are not able to specify the differences only to age, but rather to multiple of aspects referring to employee as a person. In addition, in the group settings the same results have been found from the generation Y's perspective, as an example: *"The age did not affect working in the project, maybe it would have if the age differences had been greater than between 25-40 years old"* (Generation Y- Q).

Finally, generation Y looks at the generation X from the following perspective in some cases: *"The oldest person in the project was between 40-50 years old and it could be easily noticed too. For example, the older had much more patience, word readiness and courage. Also, the habits and ways of doing things were old fashioned but once the work started it started hard!"* (Generation Y- K). This would imply on that generation X is good with what they work with, if they only get started.

Analysis

Coming into a conclusion with the most important findings of the intergenerational knowledge sharing activities within the case study B, the age seems to be less important for both generations when talking about intergenerational knowledge sharing. *"I haven't noticed much of age differences; all are basically on the same line. The employees working here have been chosen so that all have the same opinion and so on"* (Generation Y- L). The generational differences exist, but are not directly brought up by the interviewees. However, they do imply that the age is not a major issue or subject that would create differences in the way of which generation X and Y participate in the knowledge sharing processes.

However, there were some findings within the knowledge sharing of the differences of what kind of knowledge each generation is sharing. The generation X is more connected with the industry knowhow knowledge and have more experience. While, younger generation Y is more specialized into the IT-systems and technological usage knowledge. Both generations also seem to find the intergenerational knowledge sharing mutually beneficial, for example: *"Yesterday I asked my older colleague (from generation X) sitting right next to me for some advices, and it was very easy to approach her. She was positive, happy and I got help immediately from her"* (Generation Y- N). Therefore, the attitudes towards the intergenerational knowledge sharing are positive and mutual.

Furthermore, there was a finding relating to the individualistic way of working from generation Y, while generation X has a more community based style. For example: *"The same aged colleagues as myself tend to value their own work so much more that they seem 'busy' or tell me that they are not able to help, while I've noticed that the older employees are more reluctant to stop their work for a moment and help out others"* (Generation Y- N). At the same time, generational differences have been shifted towards the personality of the employees when it comes to knowledge sharing, as an example: *"I haven't noticed differences in knowledge sharing between generations, its more to do with the persons than their age. I learn new insights from the younger employees regarding taking care of the customers while from the older employees I've learnt knowhow to do my work"* (Generation Y- Q).

In addition, learning and communication seem to be in an important position when looking at the intergenerational knowledge sharing. The case study B company has created a very open atmosphere in the sales department, in which any employee feels welcome to ask for help with their work: *"There has been from the beginning a very open culture and it is easy to ask for help if need to be. Self-learning is being promoted and recommended, we are offered time to do it and openness is seen that whenever there are newcomers they are able to ask for help from anyone working in here"* (Generation Y- K). This has further developed the employees from both learning perspective as with open communications. Figure 15: 'An illustration situation of how the workstations have been positioned' shows how the workstations are relatively openly around the table, and how the employees are closely positioned to each other. This has probably an impact in the open culture and knowledge sharing activity on the intergenerational level as well.

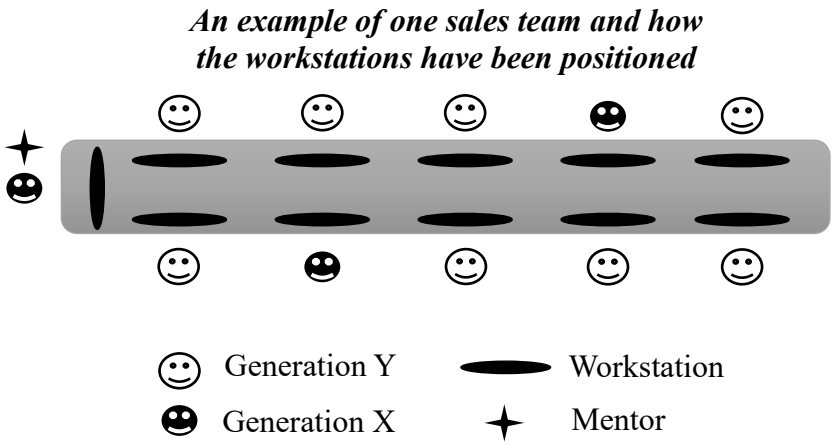


Figure 15: An illustration situation of how the workstations have been positioned

To conclude, major findings for intergenerational knowledge sharing in the case study B are that knowledge sharing is taking actively place in between the generations X and Y at the workplace, and it is mutually considered as a positive, beneficial and effective way to communicate, learn and improve the work-related processes and individual competences on daily basis. Therefore, intergenerational knowledge sharing is a vital part of the knowledge transformation between generations, and it adjusts the organizational knowledge within case study B company.

6.3.2 Attitude

Attitudes between generation X and Y were related to communication systems, learning and intergenerational knowledge sharing. Following up with some meaningful quotes from the X-generation's interviews and quotes by the Y generation to bring a comparative overview to the various attitudes influencing intergenerational knowledge sharing.

Generation X

Generation X doesn't seem to consider the age to be in a major role when communicating and sharing knowledge with other employees, rather they consider the personality trait as a key factor, for example:" *Well we have such an active team that the age doesn't play such an important role"* (Generation X- H). Moreover, *"It depends so much on the persona with whom the problem is being solved together"* (Generation X- H). This is explained further by another interviewee from generation X, as it follows: *"There is experience and interesting opinions from both sides. Strong personas come up but in general everyone has a chance to bring forth their thoughts and are noticed from both sides. Although there are a lot of the younger employees. Sometimes I think it would be fun to see if these younger employees still think after 15 years as strictly and strongly about these things like today. Some are very strict and absolute concerning matters than others. Time will change them"* (Generation X- J)

In addition, there were for example some possible fears related with asking help and to share knowledge with the other employees, such as: *"I didn't have the courage to ask, it was such a basic thing so I sneaked in here to solve it out. Solving a basic thing would have been awkward and put me in shame if I had asked others for help"* (Generation X- H). Additionally, the attitudes towards changes in the working environment were important: *"if you don't learn to accept changes in this company then you may as well be at home"* (Generation X- H). This was brought up by the generation Y as well: *"Changes are a must, they will come and they have to be adapted to, otherwise one won't cope"* (Generation Y- K).

Generation Y

While at first hand the attitudes between generation Y seemed similar with generation X, there were still some small differences in the results when comparing the two generations. Furthermore, generation Y considers themselves as easily approached individuals as for example:*" I am easily approached; I have been here almost a year and the new employees may have the understanding that maybe I know as I have been here for a longer time than what they have"* (Generation Y- I)

But on the other hand, as mentioned previously, there were some small but interesting differences: *"Doing group work has been occasionally difficult. Sometimes there has been the setting in which the older employees convey a message of "don't you come to tell me how I do my work little girl", but then maybe older employees have harder times to receive constructive criticism"* (Generation Y- I). This type of attitudes and behavior seem to be quite rare and does not strike clearly through from the interview data. However, some examples do show up, such as *"I prefer doing things with haste, an older employee is more calm and does the same things slowly. Elderly employees explain certain matters for a longer period, while I prefer going straight to the point"* (Generation Y- M).

The atmosphere between generation X and Y seem to be neutral most of the time, sometimes positive and sometimes negative. *"Here we encourage and cheer already so many good experiences and successes that I might even feel a bit troubled when there are so many and all the time we need to congratulate other employees"* (Generation Y- L). For example, about some of the changes that take place in the case study B company: *"We've just recently changed places and I know that my colleague next to me has been here for longer time and knows a lot about the business"* (Generation Y- M). As previously mentioned, the atmosphere between the generations is positive in some cases, for example: *"Older employees have such a huge knowledge repository, which can't be found anywhere else. Just for example last week I had a potential customer and I wanted some advices on how to approach the customer and the older employee knew it and the answer came immediately"* (Generation Y- K).

Systems, and the use of them, seem to be important to the younger generation Y, more than to the older generation X: *"I might ask too easily from others, while I could check my answers from the intranet easily if I only had some effort to look for it"* (Generation Y- Q). Furthermore, *"Well in the systems one does not know how old others are, but the team I'm in here the younger ones are younger but it doesn't make them any different as persons"* (Generation Y- M).

Overall, the picture of generation Y seems to be that they are happy to help and share knowledge both in virtual and physical environments. A few supporting quotes, firstly: *"I gladly share what I have learnt in a short pilot project. I use our social media platform quite a lot and then through talking personally"* (Generation Y- I). Secondly: *"I felt asking my colleague for information quite natural, but I also check up the same question with my supervisor sometimes just to be certain with the answer"* (Generation Y- P).

Analysis

The following quote: *"It's good to ask others for help, that way both learn better"* (Generation Y- K), summarizes the attitudes towards intergenerational knowledge sharing between generations X and Y in the case study B company. In addition, it seems that the atmosphere in the company supports and highlights more successful situations rather than problems, as "*If there is something that isn't working out, I will let others know. But maybe the successes are more wanted"* (Generation Y- L).

However, although there seems to be minor issues with the atmosphere sometimes, in general: *"There is an open atmosphere here to share experiences and knowledge and let others know about one's thoughts when all are in an equal position"* (Generation Y- Q). The employees don't feel the age to be a major factor, and the employees find that changes are good to have as they keep the work inspiring. The personality of employees is brought up and highlighted to be the real major factor influencing intergenerational knowledge sharing, more than the age differences between employees.

6.3.3 Communication

Communication in the case B has utilized both virtual systems and physical, to both internal and external directions. Communication results will be analyzed from the intergenerational knowledge sharing perspective with the comparative approach towards X and Y generations.

Generation X

Communication in generation X is dependent on knowledge sharing activities of all the employees, and there are some topics, such as systems and communication types, that were repeated in the gathered data. For example, group working topic brought communication aspect to a whole new level, as employees from generation X felt more reluctant to communicate in smaller groups rather than large: *"New things are gone through always in groups, in which there are employees of different ages. The sizes of the groups tend to be four to five persons, which allows each of the group members to speak out and express their opinions better than what they would in a larger group"* (Generation X- O). In addition to preferring smaller groups, generation X also consider face to face communication as the best way to communicate with the colleagues. This statement was clearly made by one interviewee, as it follows: *"I absolutely prefer face to face communication"* (Generation X- O). Furthermore, older employees feel like their communication, especially from knowledge sharing perspective, with the younger generation is beneficial. For an example: *"If my knowledge helps someone's work then I do share it because it's not away from me if I can help someone"* (Generation X- J).

Additionally, systems were something in which generation X considered themselves to be less active than the younger generation Y: *"I believe that youngers use the VoIP software much more than what I do for communication, in addition to that I prefer face to face conversation if it's about communicating within our own team"* (Generation X- J).

Generation Y

However, generation Y had similar views concerning the communication as the generation X. It seems that both generations in this case study had a huge preference for face to face communication, for example few quotes from the interviews: *"I prefer communication by face to face talking rather than virtually"* (Generation Y- I), and to support even further: *"Face to face communication allows me to solve my problems faster. We're so many here that it is easy to get help fast"* (Generation Y- N).

Some reasons for why face to face seems to be so popular communication method can be found in the following quote*s: "Face to face communication is the best but calling also works well. If I need to write and explain a longer situation through digital communication, then it becomes problematic"* (Generation Y- L). In addition, *"Asking face to face from a colleague was natural and smooth, an easy way to get help…."* (Generation Y- I). The generation Y also wanted to point out how their communication skills are developing all the time; *"Communication skills are continuously developing and can always be improved"* (Generation Y- I).

Group discussion situations can be seen difficult for some of the employees from the generation Y, as an example: *"I don't speak at all if not asked in the meetings, but for instance I do talk on the coffee breaks with my friends in small groups"* (Generation Y- M). This would perhaps relate to the personality of the interviewee, accordingly to the findings of the intergenerational knowledge sharing, and how the influence comes from personality rather than age differences. Moreover, "*On the other hand, I've liked it the way it is, I don't feel that I would like to go upfront and explain matters, to that I can't bend to"* (Generation Y- M).

Analysis

The findings in communication show that both generations are clearly preferring the face to face communication over other means of communication and sharing knowledge. The systems seem to be time consuming, and the answers do not necessarily reach the employees fast enough through the systems. For example, face to face communication is praised in the following way and compared to communication through systems: *"Face to face always, there are so many things in conversations compared to 'tapping' messages and it's so much quicker and precise way to communicate"* (Generation Y- K).

In addition, similarly as in intergenerational knowledge sharing there were some small differences only recognized in the age differences regarding the communication parties. *"Not much of age differences. The same aged and a bit older have been asking me questions. The oldest employees don't usually ask but the others do"* (Generation Y- L). However, generation Y seem to have a situation, in which they are rarely approached by generation X for help or answers to some certain problems. This can be leading from their level of experience in the company and field of business, as they have in most cases had only some years of experience. Generation X might prefer asking employees with same level of experiences in general.

Regarding the use of systems, both generations seem to try avoiding it for matters that can be dealt without participation in the systems. For example, sharing experiences seem to be something that both generations prefer communicating face to face rather than through the systems designed for such. *"I don't use our social media platform that much, I tend to say what I have on my mind once aloud and then that's about it then" (Generation X- J).* However, the younger generation does take the use of systems accordingly to few interviewee respondents, in which they prefer first checking fast the systems for the answers before going to communicate with a colleague face to face. *"I prefer checking first from the intranet if I could get the answer by myself, if not then I tend to prefer asking face to face from my colleague and if they don't know then I ask from the support team virtually"* (Generation Y- P).

6.3.4 IT systems

The organization uses different systems and software heavily and the organization is in the middle of its digitalization process: *"There are at least ten systems that have to be used constantly in the daily work"* (Generation Y- K). The systems used by the interviewees are the same for all the interviewees, and several other departments and groups inside the organization. Knowledge sharing in these systems is generally taken very massive and may seem chaotic, although there is some order and logic behind it. These systems are being used by several generations, but due to the interviewee demographics, the systems will be analyzed similarly from the X and Y generations comparative perspective.

There are several different systems and similar tools designed for the specific working purposes in the case B company. Some of these systems have no visible differences in the way of use and knowledge sharing inside the systems by the generations X and Y. Therefore, only the important systems regarding the daily knowledge sharing of the interviewees have been introduced shortly including the X-Y comparison in these systems. The systems are as following:

Social media platform,
is used to connect throughout the organization from multiple organizational levels to any other employee in the organization. The social media platform is mainly used to share knowledge, information and to ask questions, as well as to create new ideas, to communicate internally and to manage multiple project groups including their files.

Generation X

The generation X is generally taking a passive role in the social media platform, for example: *"I follow our social media platform, and if there is a conversation that I recall to have the answer to my problem, then I try to find it from there"* (Generation X- J). Moreover, the generation X considers the social media platform more or less as a tool to share experiences and feelings, rather than actual knowledge from certain perspectives: *"Social media platform is clearly for sharing experiences, some are more active in sharing them than others, but I still follow it. I follow intranet the most though"* (Generation X- J).

Generation Y

Seemingly, generation Y considers that the social media platform has the same purpose as what generation X considers: *"The social media platform is more of experience sharing but not so much of facts"* (Generation Y- L). In addition to support this viewpoint further another example: *"The social media platform is more about sharing experiences but not so much about facts. We have one employee (Generation X) whom has been 10 years in Customer care, so I ask her a lot for these things"* (Generation Y- L).

Furthermore, generation Y is taking a passive stance when it comes to sharing knowledge in the social media platform, for example: *"I don't use the social media platform system that much for sharing anything, I rather only observe in it"* (Generation Y- N). Moreover, concerning knowledge sharing there were some quite extreme opinions regarding the social media platform, as for example: *"I've never put anything into our social media platform and if I ever do, then it is a miracle and things are certainly bad"* (Generation Y- M).

VoIP system,

Voice over Internet Protocol (VoIP) for creating virtual group meetings, groups to communicate with both chat and online call functions, to share the screen and help the other employees with their difficulties. The VoIP software is used for both internal and external communication with multiple styles. Some share knowledge, while others only ask simple questions such as, *'Do you have time for coffee now?'*.

Generation X and Y

Both generations seem to be using the VoIP system quite in the same way with the same purposes. However, the generation X believes that the younger generation is more active in using this system.

Analysis

First, it seems that the interviewees consider the younger generation to be more trained and used to working with new systems. Therefore, the older employees and generation X need more time to learn and implement the systems into their daily working, for example: *"Younger employees adapt easier to technical tools (for example video calls), while the older employees take longer to implement these technical tools into use if they have been working for a long time in the company"* (Generation Y- L). Furthermore, to support this dominant mindset even the older generation considers the statement true, for example; *"Certainly we have some extraordinary personas and if the employees are older, their experiences and knowledge are brought up, but if we look at these new tools (such as video calls) then the older employees take a little longer with taking it into use, while the younger employees just do it as it is normal to them"* (Generation X- H).

Second, the general motivation for using systems seem to be a bit debated topic at the workplace, as some of the respondents from generation Y mentioned that; *"I have been cheering up the older employees quite a lot when it comes to using systems, and their motivation and effectiveness tends to be lower from what I have observed and got to see from by their side"* (Generation Y- I). To fuel it up even more, *"Younger perhaps cope better with technological matters, for example video calls. Older employees take longer time to utilize this technology. The older are perhaps more pessimistic towards the virtual systems, while younger employees are more positive"* (Generation Y- L).

This motivational issue could lead from*: "For example, the younger employees with a BBA degree certificate are clearly showing strong performance with using the systems; the younger generation has grown up with the technology by their side, while my generation has learnt to use it through the working life experiences"* (Generation X- O). The younger generation has also noticed the same issue from their perspective, as such: *"Systems seem to be a big step or a leap for the older generation"* (Generation Y- I). In addition, this may derive from how the generation X, interviewee O responded to the motivational issue. The older generation indeed has generally learned to use systems through working in companies and being trained to the systems slowly alongside the work, while the younger generation has received the knowledge in using systems in a more open and free environment, by themselves or with friends at school. An example

of how this influences the behavior of the generations inside the systems from the generation Y point of view, for example: *"I use systems for both 'chit chat' as well as sharing experiences and I've noticed that older employees are generally spoken more formal when they write messages"* (Generation Y- Q).

Concluding, the IT-systems seem to be an area of expertise, in which the older generation X feels to be slowly left behind, as the younger generation Y is stepping up and teaching the older generation more about how to use systems. Both generations feel open and happy to use systems for doing their work, although the difficulties faced at work may vary depending on the personal IT-skills level. In addition, the systems are used mainly to complete the work tasks and not so much for anything else. Social media platform is seen as an experience 'database' for letting everyone know about success or problems that the employees face on daily basis.

6.3.5 Learning

Learning was included in the interview guide, as it is an important factor when considering knowledge sharing and the outcomes of such inside the company. Furthermore, learning as the fourth chosen aspect of knowledge sharing in this thesis has a larger focus when it is connected both to intergenerational knowledge sharing as the primary focus, and to the organizational learning as the subtopic. Similarly, if compared to the other four aspects, learning has been explored from the comparative setting between generations X and Y.

Generation X

Generation X considers learning to be an activity, which is taking place during the work time. For example, a quote from the generation X representative: *"Sure, you can learn from books but if we speak about selling then it is learnt best through people and experiences"* (Generation X- H). At the same time while speaking about learning, generation X referred to knowledge sharing and the use of it in learning situations, as such: *"It would be good to spread knowledge"* (Generation X- H). Moreover, the generation X sees the initial training just as a short introduction, briefing to the actual work. For example, *"The training at the beginning is just like scratching the surface,*

after which there are so many different topics to be covered by just doing the work and asking" (Generation X- H).

Furthermore, generation X values learning as a daily activity and outcome for being at work. Even when an employee can't specify what they have learnt, they still feel that they have learnt something during the day. This is supported by few quotes that relate to continuous learning, as well as how the employees learn on daily basis. To begin with, generation X and the daily learning: *"Well, we exchange all the time the learnt lessons. Older employees know more about the products as they have usually also been working for a longer time. I can't individualize all what I have learnt, but I learn everyday"* (Generation X- J).

Some generational aspects also raised from the learning aspect when generation X employee had been away from the work during an alternation leave. For example: *"After a yearlong job alternation leave many things had changed and I had to learn new operational modes and practices. In addition, the younger employees, whom know the systems well, cause some 'aha' moments to me"* (Generation X- O). This strengthens all the previous aspects and their statements about how the generational differences in intergenerational knowledge sharing between generation X and Y relate to learning, experiences and technology.

Generation Y

Generation Y has similar answers to the different learning concepts, such as continuous learning, learning by doing and daily learning. In addition, generation Y considers the generation X to have a huge knowhow and knowledge relating to the services and products that the case company B is providing to customers. For example: *"We have one employee from generation X whom has worked 10 years in customer care, I ask a lot of advices from this employee"* (Generation Y- L). To support the earlier similarities, few quotes from the interviews with generation Y representatives: *"Well, you always learn something new. At least in the meetings these things tend to be gone through and the last time we got some good hints and tips from another team"* (Generation Y- I). Moreover, *"I learn all the time so much, relating to systems, products and other employees"* (Generation Y- N). Also, to conclude the continuous learning similarity:

"Continuous learning is important because if one does not learn new then one gets stuck and won't improve" (Generation Y- K).

In the interview data from generation Y, the group learning was strongly present and perhaps more than with generation X. Therefore, it could be a possible finding that generation Y finds group learning situations more beneficial, and due to that they wanted to express their thoughts regarding it, as such: *"learning takes place while working, some solutions to certain problems are actively shared among the own team and the department, so somehow there is all the time something new to learn from"* (Generation Y- P). In addition, mistakes and failures provide a good 'learning by doing' situation for the employees of generation Y, as: *"Learning through mistakes is great because if you fail, then you will remember it for a long time"* (Generation Y- I). Some additional support to the learning by doing and experiencing problems: *"It can be that I know the solution to the problem already before asking, but if I have not done or used some specific tool or case for a long-time, then I get uncertain and ask although I probably know the answer already"* (Generation Y- M).

Learning by doing is highlighted in both generations X and Y, but learning by reading is highlighted more in generation Y. In addition, for example: *"I like reading and going through the materials by myself after which I ask questions"* (Generation Y- K). Furthermore, *"I tend to learn by readings first at home and I challenge myself to boost my learning on daily basis"* (Generation Y- Q). Also, probably the most interesting quote from the interviewees regarding learning by reading from the generation Y was: *"Other employees ask me quite anything. When I came to work here I studied everything possible and believed in that I will learn it by reading before taking the knowledge into use. Slowly it started to show also in my work when compared to the others who came to work here around the same time as I did"* (Generation Y- K).

However, both generations consider learning sometimes difficult, it might be either due to restrictions made by time, or the complexity of the subject. However, mainly generation Y pointed out these issues in the interviews directly, as such: *"I need a lot of time in certain cases to learn and use them for my benefit"* (Generation Y- M). And to support the same difficulty: *"Learning is not easy with strict time limits"* (Generation

Y- M). Therefore, learning does not go without issues, but clearly the majority had a good situation regarding their learning activity, processes and motivation to learn on daily basis in the case B company.

Analysis

To summarize learning aspect, in the intergenerational knowledge sharing perspective, before moving on to the organizational learning part of this chapter, it is important to look at the knowledge sharing and possible age differences that were found in the results of learning aspect. First, the general finding was that the older employees learn from the younger mostly knowledge regarding systems and technology, while the younger employees learn the knowhow and product knowledge from the older employees. To support this, a quote from generation X: *"I tend to learn about systems from the younger employees, while the older employees have the knowhow and knowledge"* (Generation X- O). This same finding has been made in also other aspects within the intergenerational knowledge sharing results, such as IT-systems and communication.

Some additional findings relating to learning aspect and knowledge sharing was that generation Y prefers to enhance their knowledge in social context, but to create new knowledge they tend to learn by reading at first. This reflects on the generational differences in the education and job training that was received when starting the work. Over the time, some learning methods have been preferred over others, and therefore this can also be an actual generational difference finding.

However, finally the learning is connected to experience by both generations X and Y, but a great quote from the generation Y explains the situation clearly: "*Learning slows down as the experience increases, but I always learn new things for example when the products evolve and change continuously. Changes are also important to keep the work pleasant and interesting"* (Generation Y- Q). This result and finding strengthens the theories used in knowledge and learning chapters, as it proves the connection between learning, experience and knowledge sharing.

6.4 Organizational learning

Organizational learning has been analyzed by using both comparative and the conceptual method for measuring the occurrence of some key words in the results of the subtopic B. However, although the conceptual method is the main analysis method for subtopic B, there will also be the same comparative analysis method as in the primary study with the generations and their differences with the respective results from the interviews. The analysis will go together with the results throughout this section.

6.4.1 Individual level

Individual level learning has been explored with similar viewpoint to the individual learning as in the primary study of intergenerational knowledge sharing. The individual learning includes therefore a brief 'recap', with some new additional results from the interviews to support this section of the organizational learning analysis. Moreover, the individual level will be gone through from three situations: Similarities, Differences and Informal learning activities.

To begin with, in figure 16: *'Learning activity results from the interviews in case study B'*: conceptual analysis measures the occurrence of learning activity concepts, such as: 'by doing', 'by reading', 'by communication', 'by doing projects' and 'by other means'. The results of the occurrence have been shown as the occurrence inside the represented generation and compared to the opposite generation representation. Both have therefore been marked as the amount of whom consider the learning activity useful. There were 7 respondents from generation Y and 3 respondents from generation X, counting to 10 respondents in total. Figure 16 does illustrate the individual learning methods that are in active use of both generations. Moreover, it is important to keep in mind the unequal respondent amount from both generations, so that the figure makes a bit more sense. Supporting the primary research focus both generations have similar learning methods in active usage. However, learning by reading and by doing projects or social interactions were proving to have a difference in the results between the generations X and Y.

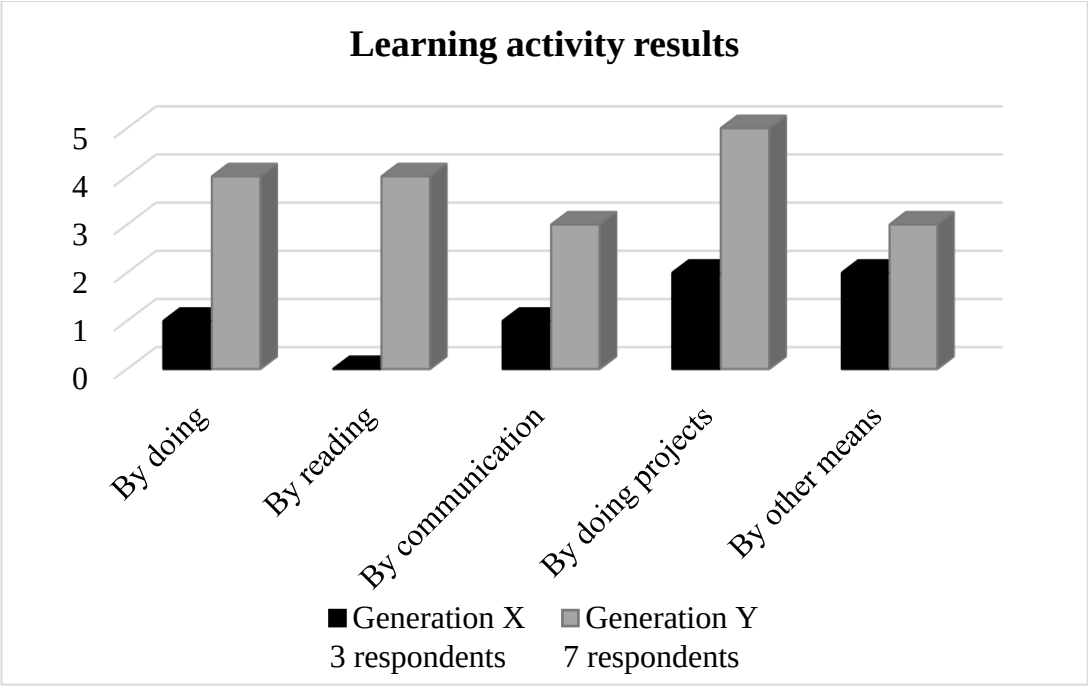


Figure 16: Learning activity results from the interviews in case study B.

Learning Similarities

Furthermore, to support the figure 16 and findings of individual learning even further, the similarities and differences that were found in learning situations are presented. Therefore, to begin with learning similarities, both generations consider that there is no lack of information and knowledge, and that it is up to oneself to learn and utilize the massive organizational knowledge found in the company. For example: *"Learning depends on oneself, whether one keeps ears and eyes open. One must have an open mind to receive and learn new knowledge"* (Generation Y- N). Moreover, regarding the knowledge amounts: *"There is a lot of information, it can't be denied. There is always someone whom one can ask advices from"* (Generation X- H). To continue with an opinion from the generation Y: *"Learning is easy as there is so much knowledge to utilize. I learn best by solving my own problems and by doing my job. It is sometimes challenging to find time for learning and this place is quite loud for reading and studying by reading"* (Generation Y- N).

In addition, best ways to learn have been asked from the interviewees and the results were surprisingly similar between the generations. Few examples regarding the best individual learning methods as quotes: *"Doing by myself I learn the best. I never read any guides, which is the reason why I have problems with IKEA furniture"* (Generation

X- H). Moreover, generation X will continue: *"I learn best by the group working method, in where everyone receives the information personally in explicit form, after which it will be gone through and digested inside the group"* (Generation X- O). Following with the generation Y opinions and thoughts regarding the best method for individual learning: *"I learn best by doing and communicating with my colleagues about my experiences and the work in general. Reading usually 'comes and goes' as there is so much of background noise at work, while I would require silence while learning by reading"* (Generation Y- L). And to strengthen the generation Y participation in this finding, another example: *"I learn by doing, discussing about experiences with my colleagues. Studying by reading usually goes into one ear and out from the other as there are so much noise. I need silence for learning by reading"* (Generation Y- L).

Final similarities were found in the continuous learning, as it was an important topic for both generations, as such: *"Continuous learning is important because the industry in which we are working is changing all the time and we need to develop ourselves accordingly"* (Generation X- J). And Generation Y's example: *"Continuous learning is important as I am also quite hasty person, so I kind of need that there are new things so that the work stays enjoyable"* (Generation Y- M).

Learning differences

There were not many obvious differences available in the results of the interviews, but some smaller findings were noticed regarding the starting course of the work position. The older employees did not necessarily even receive a training course, although some of them had, as such: *"Basic knowledge was acquired through the training week, and by doing the knowledge evolved into this specific work position and got molded to fit the needs of my work. I consider that I learn relatively easy"* (Generation X- J). While the younger employees have differences even among their own generation, as the quality and amount of training seems to depend on when the employee has joined the company: *"I've heard that those whom recently started to work here have received a better training that what we had back in the days. I'm the kind of person whom needs a lot of self-confidence so I would hope for more training. Both practicing and product knowledge"* (Generation Y- M).

Informal learning

Informal learning occurrences in the data collection have been presented in figure 17 *'Informal knowledge sharing and learning channels in case study B'*. The results have been compared between the generations and the score represents the total amount of how many interviewees from each generation has brought up the knowledge sharing and learning channel in the interviewees. Figure 17 shows how both generations highly value face to face communication as their primary 'informal learning' and knowledge sharing channel. Moreover, other channels for knowledge sharing and informal learning are less popular by the generation X than Y. Phone call seems to be a relatively popular method for the generation X to share knowledge and on the opposite, social media is for the generation Y.

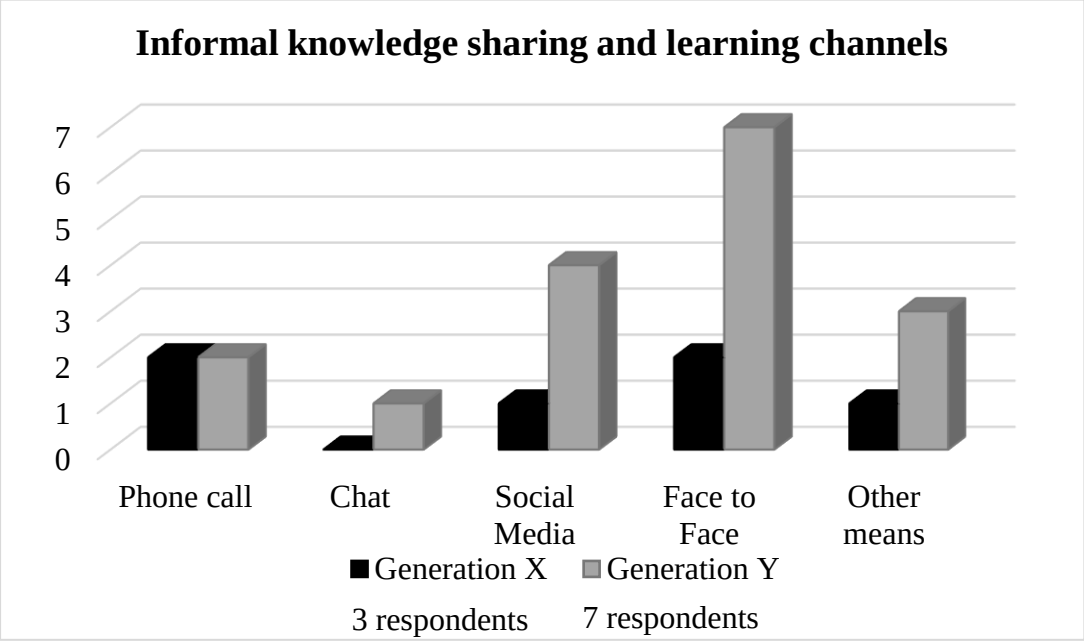


Figure 17: Knowledge sharing and learning channels in case study B.

6.4.2 Group level

Formal vs. Non-formal

Formal and non-formal learning on the group level provided surprisingly visible results from the interviews. An example of how the formal communication works in the IT-systems: *"The formal communication should take place in some other system than skype, however it is much easier to use amongst the 'friends' at work"* (Generation X-O).

Furthermore, groupwork is seemingly nonproblematic as both formal and non-formal situations do not conflict with the intergenerational knowledge sharing or the organizational learning activities, as such: *"Here the group work is great, I can work with all and even with the different generations without bigger problems"* (Generation Y- L).

However, the younger generation employees seem to be afraid of formal communication and learning in the group meetings, in where the formal 'knowledge' is shared among all the employees at the same time. An example of this from one of the interviewees of the generation Y: *"In more public situations such as the team meetings, younger don't necessarily have the courage to express themselves, rather they leave their questions to the end after the meeting. The older employees are more brave in these situations and ask also during the meeting if need to be"* (Generation Y- K). Although, the formal meetings are regularly kept, as such: *"Well we have of course once a week our own meeting with our manager in which matters are gone through. On Mondays, we have had all the teams taking part in a larger meeting where the more general matters are gone through"* (Generation Y- M). Furthermore, there are non-formal meetings, such as joint coffee trips, that have been pre-agreed and calling the support services for further advices.

Communities of Practice

The communities of practice were in a central role of the organizational learning subtopic B. The interviewees belong to their own sales team and they work closely together with other sales teams in the department. An example of how the communities of practice increase the individual learning of the employees: *"I have learned new things about our services in our own team's meeting by sharing experiences"* (Generation Y- P). In addition, the morale to help others out, by sharing knowledge and the expectations, will be mutually beneficial in the long run. Some visible results of the mutual knowledge bonding, as an example: *"The 'forest responds the way you shout at it', so in general nobody will learn everything alone. If I share knowledge and help others, then I expect them to do the same for me and help me to learn"* (Generation Y- K). However, of course these communities of practice are not completely non-problematic: *"There are team and manager related differences in knowledge sharing.*

Such as, whether the information stays inside the team only or if it is also spread to other teams. There have been so many small projects that study something and then try to share it to all others after finishing the project. Sure, they share as much as they can, but there are differences" (Generation Y- N).

6.4.3 Organizational level

The analysis of the organizational level will look at the knowledge sharing amongst the employees between the generations X and Y. To begin with, the organizational level is the tool to organize and manage situations in where the intergenerational knowledge sharing can take place. As an example of such: *"We have small groups, which have different aged employees. It's not necessarily the age, but the personality. We're all talking loud so that one must fight for turn to speak. However, there is usually a person assigned to lead the conversation and it has been quite equal among the group members. The persons that tend to be quiet don't share much"* (Generation Y- N). Furthermore, the managers also boost the intergenerational knowledge sharing atmosphere, by leading with examples instead of commanding only: *"Team meetings are organized by our managers. It derives from our manager, the open and free atmosphere to ask questions and to learn. People help each other as our manager has created this atmosphere within the team"* (Generation X- J).

In addition, the knowledge sharing can depend on other factors, such as how valuable the time is at that moment to the employee, for example if they are in a hurry: *"Depends on the problem, if I'm in a hurry then I ask my colleague next to me if they have experienced anything similar. Depends with the hurry though, if I'm not in a hurry then I will find the solution to any problem from our intranet. If I've had problems, then I've also gone and asked the older employees and if they know the answer then they have given me the answer immediately"* (Generation Y- L). Finally, as stated by the generation X representative*: "The ability to help and support other employees is the biggest source of inspiration and motivation for sharing knowledge amongst the employees"* (Generation X- O). Therefore, as the organizational learning is heavily dependent on the individuals and their activity in sharing knowledge and learning from each other through social interactions. It is highly important to enhance and boost the motivation and inspiration regarding intergenerational knowledge sharing and learning activities.

Summary analysis

To continue with where the primary learning analysis ended, the more experience an employee has the slower the learning process become usually. This is further supported also by generation Y results, such as: *"Continuous learning keeps your mind clear and brains at work. It keeps human happy and up to date with the work"* (Generation Y- L). If there was no continuous learning in the case study B company, the mind would fixate on one state and get 'stuck to the old ways of doing things', as the results indirectly explain. In addition, learning similarities were already found in the primary research, but the subtopic findings strengthen the primary research findings and vice versa. Since both research topics found nearly the same similarities, it proves how the learning activity doesn't change when the exploring and analyzing point of view changes. To conclude with an example: *"It is everyone's benefit if we share knowledge actively"* (Generation Y- K). In other words, mutual learning and knowledge sharing is seen very positive and beneficial for all the participants in the case study B company.

Furthermore, group level activities fuel the individual learning and activates the organizational learning during the formal meetings and other events, such as: *"The company organizes a lot of workshops, conversations and meetings several times a week to convey knowledge. Knowledge is being shared among the team and the whole department"* (Generation Y- P). These formal situations play an important role to the organizational learning activities, and they are influenced by the communities of practice and individual employees in the case study B. The four key aspects in the primary study relate to this organizational learning performance in a similar way as it relates to the knowledge sharing.

Finally, organizational level learning requires a positive and open attitude towards learning, communication together with social interactions, IT-systems to support as well as to provide tools and the actual learning activity, which takes place by sharing knowledge among the other team members and jointly creating new knowledge simultaneously while learning. The case study B results will be analyzed further with the' Modified SECI model' of formal and informal communities by Jadoul (2013), in the Chapter 7.

Chapter 7: Discussions

This chapter will consider the research in relation to the theoretical framework and literature review. The structure of this chapter begins with the intergenerational knowledge sharing discussion of case study A, following with the subtopic of virtual communication. After case study A has been presented, case study B will be explored from an intergenerational knowledge sharing focus and with the subtopic of organizational learning. This chapter will also find the answers to the research questions presented at the beginning of the thesis. Finally, towards the end of the chapter, the mutual findings of both case studies will be discussed, and the reliability and validity will be proven for this thesis.

7.1 Case study A

7.1.1 Intergenerational knowledge sharing

To begin with intergenerational perspective towards knowledge sharing, the overall analysis of the results show that there are no huge differences in the knowledge sharing of younger and older employees in case company A. Both generations pointed out that personally they do not feel that age difference plays any important role in their organizational processes in general. They emphasized that most of the employees are still relatively young. In addition, generation Y considers representatives of generation X as 'young spirit' individuals. Moreover, the younger generation feel comfortable to share knowledge with older members and vice versa.

From a theoretical viewpoint, intergenerational relationships in an organization presumes the involvement of members from different generations in the activities based on the interaction, cooperation, and mutual influence for reaching common aims (Villar, 2007). Furthermore, according to Hooff and Ridder (2004), communication climate plays an important role in understanding knowledge sharing, and constructive communication among workers positively influences knowledge sharing processes. This is happening in case company A due to the circumstances created by the management for frequent communication face-to-face and virtually. Interaction is considered as an important part of their daily responsibilities. Employees feel comfortable to interact in different situations, and ask each other's opinion and help. Moreover, intergenerational knowledge sharing in case company A can be considered as a reciprocal process when both generations contribute for gaining new perspectives, exchanging experience and increasing the networks (Bjursell, 2015).

The use of IT-systems seems to be an important part of the job for both generations. There are numerous systems in case company A that support communication and information sharing processes. Hendriks (1999) stated that ICT is used for knowledge sharing by allowing to store the documents and also to communicate virtually by engaging employees in virtual communities (Jinyang, 2015). The analysis of the results showed the existence of generational differences in the use of IT-systems, so that older members are more conservative concerning new systems, compared with younger

employees who are more open for trying new IT-tools. Moreover, there is a difference in the willingness of using virtual communication for knowledge sharing, which will be described later in the discussion of the subtopic of virtual communication.

A detailed analysis of knowledge sharing aspects from the viewpoints of generation X and generation Y revealed smaller differences in the attitudes of employees from different generations towards knowledge sharing. De Vries et al. (2006) highlighted, that attitudes towards knowledge sharing refer to the degree of employees' positive and negative feelings about the intention to share knowledge with other members of the organization. Even though members of case company A feel positive about knowledge sharing, there are factors that prevent generation Y from actively sharing knowledge with the colleagues, compared with generation X who consider it as part of their job responsibilities. According to the results, the older generation has a willingness to share knowledge with their colleagues. Older members have stories to share and also, they feel comfortable to share their opinion about a certain situation or a problem. Both representatives of the generation X are newcomers, but it does not play any important role for their willingness to participate in group discussions or post information on the corporate intranet. Moreover, they consider meetings and informal talks as effective ways of knowledge sharing within the company. However, the younger generation prefers to not share actively their opinions or ideas, explaining it with the fact that they are still newcomers and they do not feel comfortable enough to share their viewpoints.

Another generational difference in knowledge sharing lies in the ways in which employees feel they share knowledge in the case company A. Generation X see communication in person and meetings as prerequisites for knowledge sharing, compared with generation Y who see knowledge sharing in the opportunities of sharing documents with all the colleagues. This could mean that a personalization strategy is preferred by generation X and codification is preferred by generation Y. This fact also concerns learning. In general, both generations feel that they learn new things on a daily basis. They feel comfortable to learn from older or younger employees. However, the interpretation of the results demonstrated the difference in the ways of learning among older and younger members. Older members prefer to learn from other people by asking them and discussing an issue. Younger people try first to find the answer by themselves

by searching on the pages of the intranet or internet. To some extent, these findings could be explained by the generational theory of Levickaitė (2010), who stated that younger people are better in use of technology because they grew up in the time of the rise of internet. However, for older members it is still considered as 'know-how', and they feel suspicious about using it as a source of information.

According to Virta and Widen (2011), each organization has special contextual factors that should be taken into consideration in order to understand the aspects of knowledge sharing and possible existing barriers of it. In case study A, there are numerous aspects that might be important for the analysis of knowledge sharing in this particular company. Some of these examples are organizational structure, management learning initiatives and organization of informal corporate events. There is a corporate culture in the organization that supports and enhances knowledge sharing among the workers. Moreover, close proximity of the employees to each other in the office and the opportunities for frequent interaction might be considered as enablers for knowledge sharing. Blankenship and Ruona (2009) pointed out the importance of social structures within the company. There are different social structures in case company A that allow employees to communicate face-to-face and virtually on a daily basis.

The participants of case study A emphasized the importance of other than age factors that might influence knowledge sharing processes in their company. This assumption is supported by the theories of a group of researchers who criticized age-cohorts as a considerable factor for developing intergenerational knowledge theories. For instance, Starks (2013) highlighted that historical, cultural, societal contexts influence employees' workplace behavior. The representatives of case company A also mentioned that cultural characteristics of Finnish people might affect their activeness in the communication processes within the company. Moreover, interviewees stated that individual experience might play an important role in knowledge sharing. Brătianu and Orzea (2012) also pointed out that sharing of tacit knowledge corresponds with people's professional experience and what they know. In their work, the authors introduced the concept of 'knowledge generation' which relates to a certain knowledge content of a group of people. This theory could be applied to case company A.

7.1.2 Virtual communication

According to Reisenwitz and Iyer (2009), the younger generation is more adaptable to the use of information technology than older people. However, the analysis of the results reveals the contradiction with this existed theory. In case study A, one of the main generational differences in the use of virtual communication for knowledge sharing lies in the willingness of the employees to share their opinion online by making posts on the intranet or writing to the group chat. Generation X considers knowledge sharing in the virtual environment as a daily work responsibility. They feel comfortable to participate in discussions and share their opinion with their colleagues. However, generation Y does not actively share knowledge through virtual communication for several reasons. Firstly, they have a fear of newcomers. Secondly, some of the participants think that their personal knowledge is not important for their colleagues, as it is related only to their own work tasks. Finally, personal characteristics of being non-confident in their knowledge or modesty influence their decision to be inactive online. In case A, personal characteristics of younger workers play a more important role in their decision to use systems for knowledge sharing than their amenability to new technologies.

Communication is considered by Starks (2013) as the base for knowledge sharing. Moreover, Hooff and Ridder (2004) emphasized the importance of communication climate within the company for knowledge sharing. In case company A, both generations think that virtual communication is an important tool for interactions and discussions of business-related issues. Generation X highlighted the importance of the synchronized function of virtual communication systems and the opportunity to share personal findings with the colleagues. Generation Y find the benefits in the opportunity to save time. In addition, virtual communication provides a sense of community among all the members of the company. Virtual communication is seen as part of the communication processes in the case company. Although generation Y does not actively share their opinion online, virtual communication tools within the company support the creation of a knowledge sharing culture and knowledge sharing activities face-to-face and virtually.

Many researchers emphasized the role of trust as a knowledge sharing facilitator. Starks (2013) highlighted that trust, respect and inter-social mechanisms are enablers for engaging employees in the knowledge transfer process. The analysis of the results in case study A shows that trust is considered by employees as an important prerequisite for knowledge sharing. According to both generations, trust in case company A is based on the personal relationships among the workers and commitment to common aims which is also considered as a measure of trust (Widén-Wulff, 2007).

According to the theory of Hsu and Chang (2014), a high level of trust could be reached by the wish to gain common success. In case company A, the employees tend to believe that all the colleagues are professionals in their expertise and this is the main reason to trust knowledge that they share. However, generation Y highlighted the importance of rechecking the information due to the rapid changes that are taking place in the information technology industry. Furthermore, according to generation X, a possible barrier to trust knowledge shared online is the situation when people do not know each other in person. In addition, the personality of the trustor might influence the decision to trust due to the fact that some people could be skeptical by nature.

To conclude, both generations consider virtual communication as an important tool for interaction within the company. However, there is a significant generational difference in the willingness to share knowledge within the virtual environment in case company A. Generation X is more open for knowledge sharing, compared with generation Y who prefers to be inactive in knowledge sharing online. From the perspective of trust, both generations trust information shared virtually due to the existed interpersonal trust, confidence in the colleagues' professionalism and the commitment to common aims.

7.2 Case study B

The discussion of case study B begins with the primary research topic, intergenerational knowledge sharing and how the findings relate to the theoretical review presented in chapter 2. Firstly, the structure of discussions for case study B follows the theoretical chapter 2 and begins with the knowledge sharing dimension and the four aspects of knowledge sharing, following with the generational aspect and how these are combined into the already existing intergenerational knowledge sharing literature. This part will provide an extensive answer to the research question presented in chapter 1.

7.2.1 Intergenerational knowledge sharing

Knowledge sharing aspects

Firstly, knowledge sharing in case study B follows a general pattern including both tacit and explicit knowledge forms. It is seen as a mutual benefit, in which all participants are contributing their individual knowledge to the use of other employees. Similarly, Brown and Duguid (1998, p. 91) explained how knowledge is often thought to be the property of individuals, yet a great amount of it is both created and held in a collective setting. In such a collective setting, communities of different kinds form these groups of knowledge sharing internally within the organization. This enforces and supports the theories of organizational knowledge, as mentioned by Davenport & Prusak (1998), relating to the fluid mix of experiences that originates in the minds of employees, and becomes explicit in the form of documents when the organizational knowledge is processed. These thoughts and definitions from the literature review point out and highlight the findings in case study B, as the social and organizational knowledge is influencing the individuals' knowledge and vice versa. Moreover, individual employees have some differences in their knowledge sharing behavior depending on their chronological age and the amount of working experience. However, both generations consider that the chronological age does not impact their knowledge sharing behavior.

Furthermore, knowledge sharing occurs amongst the two generations in the form of communities of practice, as further explained by Brown and Duguid (1998, p.91). When employees are working closely together in tight groups they create knowledge and knowhow. In other words, knowledge sharing and transformation occurs in these communities of practice.

Therefore, as in case study B (see figure 15, p.86), the employees were positioned in a tight setting with their workstations and mentor nearby. This open environment with closely knit teams creates several opportunities for communities of practice to develop and emerge, both inside the department and inside the specific sales team. Therefore, knowledge sharing, as defined by De Vries et al. (2006, cited in Hoof, et al., 2012, p.149), derives from the process where individuals are mutually participating and exchanging both their tacit and explicit knowledge and by doing so they create new knowledge. Moreover, case study B findings support this from the perspective of both generation X and Y. In these perspectives, generation X is sharing more explicit knowledge in the business industry, whereas generation Y shared tacit knowledge regarding the IT-systems. In addition, both generations and all the interviewees did mutually share knowledge and create new knowledge in social interactions and in variety of situations, such as face to face, group discussions and team meetings.

Furthermore, this leads to knowledge creation as explained in the SECI model (see figure 4, p.22) by Nonaka and Takeuchi (1995, p. 284), in which knowledge can be transferred from sender to receiver, in other words, shared. This theory works well in case study B company, as it takes place on multiple levels inside the company. From the results of the interviews, this knowledge creation and sharing model has received quite some attention in subtopic B (see figure 10, 'Modified SECI model' with formal and informal communities', p. 52). In figure 10, the SECI model has been combined with the formal and informal communities model by Jadoul (2013). This SECI model connects well with the reality of case study B company, as the knowledge types vary from tacit to explicit and explicit to tacit in the knowledge sharing situations in both formal and informal communities. Similarly, this connects to the social structures and knowledge sharing processes, which have been studied by Blakenship and Ruona (2009) in their work. Case study B company findings are heavily related to social collective interactions inside the sales team that took part in this study.

In the following, we move forward to the knowledge sharing and the four aspects influencing knowledge sharing situations and activity. First, this study shows that attitudes have a clear relationship between the successfulness of knowledge sharing and the employees' attitudes towards knowledge sharing, as Ladd and Ward's (2002 cited in Starks, 2013) also conclude. Furthermore, in the findings of case study B, it was found

that attitudes related to both knowledge sharing and learning differences between generations X and Y. Both generations, however, had similar attitudes towards subjects, such as changes in the working tasks and environment. Both generations had their own exclusive viewpoints, but in general, the attitudes were positive about the intergenerational knowledge sharing taking place during the work in case study B company.

Secondly, communication is a broad topic, similarly to attitudes and learning, as it connects to multiple components. Some of these components are, as explained by Starks (2013), engagement, communicative exchanges and learning. Furthermore, another important bridge between case study B findings and the theory relating to communication is how Mäki et al., (2004, p.2) explained the most important and critical communication and knowledge sharing patterns between employees of the company. These theoretical insights are proven valid in case study B findings, where communication is taking place both 'offline' and 'online' in the working environment. The communication is collective and filled with social interactions, and both generations X and Y see communication as a vital part of their daily work. Therefore, communication is critical in case study B, as it allows the employees to solve their problems, share knowledge and learn through the intergenerational communication.

Thirdly, IT-systems are important in the case study B company, as the work is performed in systems and 'online' continuously on daily basis. Ardichvili (2008) explained how the communities of practice work in the virtual environment and the explanation about it were connected to knowledge sharing and collective learning. Moreover, the systems play an important role when it comes to virtual communication and the virtual knowledge sharing in the social media platforms. Case study B company has several systems, which are all in a heavy use on daily basis, and include functions that enhance knowledge sharing inside the company from one department to another.

Finally, learning has been heavily explored in both the primary research and in the subtopic B: organizational learning. Learning is an elusive context to define and to measure in the results of case study B. However, the findings point towards an open and positive learning culture, in which learning is endorsed and inspired by the company

and executed well from the individual perspective. Learning is tailored for the person, rather than the job position. Learning has been introduced through three types of learning, which relate to the formality of the activity itself. The concepts of 'formal', 'non-formal' and 'informal' learnings are accurate as well, if compared with case study B findings. However, the 'non-formal' type of learning was not clearly separated from formal and informal learning in the findings, as it was difficult to draw lines and distinguish one from another.

Intergenerational aspect

The generational differences and previous intergenerational knowledge sharing literature review are combined in this part for a brief overview at the connections of case study B and the earlier theories. In this case study, the generations were divided according to the participants' chronological age, and the line between generation Y and X has been made following the chapter 2 outlines. However, generation X and generation Y would have been difficult to compare without the framework of the previous literature regarding the generational ages and years as several authors have proposed (Kuyken, 2012; Starks, 2013; Cogen, 2012). The results of case study B suggest that sometimes employees from generation Y consider themselves as the 'older' generation, although they belong to generation Y. This finding supports the earlier findings from knowledge sharing, regarding the age differences. As the earlier findings suggest, it seems that the chronological age is not a major influential factor when sharing knowledge among the employees of different generations in case study B company. In addition, when the generations change from 'older' to the 'younger', as according to the birth years, the persons born right before the generations change from X to Y, the more difficult it is to classify that person into either of the generations. Therefore, as the major finding suggests the age difference is merely a small part of the actual cause for knowledge sharing differences and similarities between generations. The findings propose that personality is the key factor, which influences the knowledge sharing among the different aged employees. This is supported further by Kuyken (2012), as intergenerational knowledge sharing can be explained and reflected upon the level of professional experiences of the employees rather than only with the generational differences.

7.2.2 Organizational learning

From individual, group and organizational levels of learning the informal and formal communities of practice proved to be an important issue throughout the interview analysis. Therefore, the main finding of subtopic B 'organizational learning' is figure 18: 'Formal and informal knowledge transformation, a combined and modified model of: *"Modified SECI model for informal and formal communities"* (Jadoul, 2013) and *"knowledge transformation 'SECI' model"* (Nonaka & Takeuchi, 1995, p.284)'. These two models, combined with additional three level perspective from the findings of case study B, have created a three-level formal and informal knowledge transformation model.

In other words, the main findings of the organizational learning are presented in figure 18, in which the knowledge transformation (knowledge sharing and learning) is divided into two areas, 'formal' and 'informal'. These two areas of the figure are further divided into three 'boxes' of levels, which represent the different situations, in which knowledge transformation, sharing and learning take place. Therefore, the 'Organizational Level' represents the *"Modified SECI model for informal and formal communities"* (Jadoul, 2013), while the 'Group Level' represents the *"knowledge transformation 'SECI' model"* (Nonaka & Takeuchi, 1995, p. 284). Furthermore, the 'Individual Level' is a symbol of continuous learning and knowledge sharing within the groups and communities.

The individual level in figure 18 has been placed in the center as a continuous activity, while the group and organizational levels have been extended outwards. This is due to the case study B findings relating to individual continuous learning. The individual level also, just like both organizational and group levels, has been divided into formal and informal knowledge transformation, sharing and learning areas. The individual level has been left quite simplistic due to the complexity of the two combined models from the previous literature. The individual level is a part of both greater levels and it supports further the organizational knowledge creation definitions by both Nonaka, et al., (2006) and Davenport & Prusak (1998).

The group level resembles the SECI model (Nonaka & Takeuchi, 1995), as explained in chapter 2. In this case study B, the individual level of knowledge transformation, sharing and learning was in the center of the group level. This finding derives from the results regarding what actions the management took in order to enhance the employees' knowledge sharing. Furthermore, group learning is used actively by the management to increase learning performance of the individual employees. This is supported also by the Brown & Duguid (1998, p. 91) theory of groups forming communities of practice.

The oorganizational level takes place in the figure from the "*modified SECI model for informal and formal communities"* (Jadoul, 2013). This level reflects upon Dalkir's (2010) thoughts about communities of practice, as the key elements in ensuring that valuable knowledge is being shared and transformed within the organization properly. In the organizational level, there are quite clear formal and informal communities and communication situations, which relate to knowledge sharing and learning. These formal and informal areas create a learning pattern that begin with individual learning, from which it continues to community adoption and finally with organizational adoption. Therefore, this refers again back to Nonaka (2006) organizational knowledge creation definition, as well as to several other theories in different aspects of communication, learning and attitudes towards intergenerational knowledge sharing.

Finally, we will conclude that figure 18 is the main finding from organizational learning, subtopic B. The idea is to present the different levels that exist in various knowledge transforming situations, such as creation, sharing, and learning. The main idea is to look at the formal and informal areas and see how they relate with the case study B findings and to the subtopic, such as individual learning, continuous learning, communities of practice, formal and informal knowledge sharing and learning situations. Figure 18 presents an illustration of the organizational learning situation in case study B, and the new "formal and informal knowledge transformation" model serves as a framework for the main findings in subtopic B.

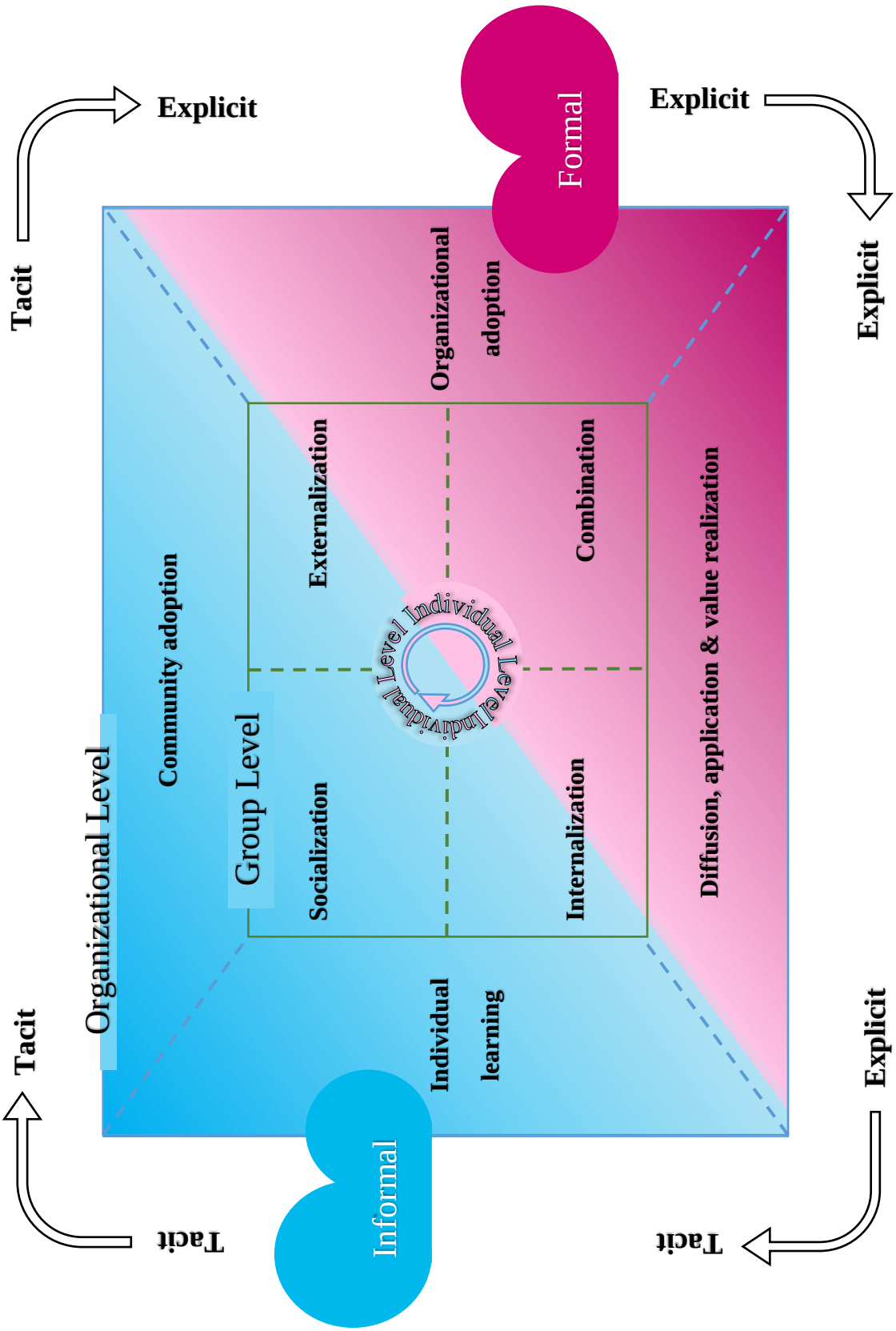


Figure 18: Formal and informal knowledge transformation, a combined and modified model of: *"Modified SECI model for informal and formal communities"* (Jadoul, 2013) and *"knowledge transformation 'SECI' model"* (Nonaka & Takeuchi, 1995, p. 284).

7.3 Common discussion

This part will go through the common findings and include a mutual discussion regarding the intergenerational knowledge sharing findings from both case studies A and B. The common results will be discussed in brief as the more extensive discussions have already been made in each individual case study parts. However, the authors felt that it would be important to summarize the primary research findings and to provide some statements to prove the reliability and validity of all the study focuses.

7.3.1 Mutual discussion about the findings from both case studies

The mutual discussion about the findings from the two case studies will include the abstract level of similarities relating to the findings of each case, due to the unique nature of case studies and the complexity of comparing two different cases on a detailed level. However, in both case studies the main finding is related to how chronological age and generational differences are not considered as factors, which would impact the knowledge sharing initiatives and activity of the employees. Moreover, Cogin (2012) relates to this by emphasizing the importance of characteristics in the relationships in the different generations and of their intergenerational activities. The employees consider the personality to be the influencing factor, rather than chronological age.

Therefore, this is supported further by Hooff, et al., (2012) by the attitudes of the employee, as an individual, towards the collective knowledge sharing practices which are influencing the knowledge sharing behavior. In addition, Bello & Oyekundle (2014) highlight the importance of the mutual beneficial transaction that influences the individuals' willingness to engage in the knowledge sharing activities. These attitudes relate to the personality of employees, and their way of perceiving the experiences they come across with. Due to this, the employees in both case studies related their knowledge sharing behavior more with their and others personalities rather than their ages.

Furthermore, according to the analysis of both cases, differences among employees on an experience level plays an important role in the knowledge sharing processes rather than their generational identity. These results are supported by Kuyken's work (2012) where the author explained that generational concept can be used as the framework for defining an attachment of an employee to a certain age-cohort, but it shouldn't be

considered as a main factor for distinguishing generational difference. Moreover, it does not influence all identities that exist in different cultural environments (Saba, 2009, cited in Kuyken, 2012). Experience of the employees and their professional are the aspects that should be taking into consideration while analyzing knowledge sharing incase companies. This finding corresponds with Brătianu and Orzea's (2012) research about 'knowledge generation', where they stated that knowledge sharing relates to the professional experience of people and what they know according to this experience. The concept of 'knowledge generation' links to age in a way that knowledge content is considered in the organizational context, and how: "*knowledge transfer will take place from the knowledge generation having a higher level of knowledge towards the generation with a lower level of knowledge"* (Brătianu and Orzea, 2012, p. 606).

The results of both case studies showed that knowledge sharing is taking place in both physical and virtual environments. Moreover, it was proven that nowadays information systems are playing an important role in knowledge sharing activities and support knowledge management of the company in general. According to Hendriks (1999), information and communication technologies have different elements that relevant to knowledge sharing, and "*organizations have made significant investments in implementing information technology that is specifically designed to support the sharing of knowledge among team members in the organization."* (Choi, et al., 2010, p. 856).

One of the important facilitators of knowledge sharing is communication climate with the existence of social structures in an organization (Blankenship and Ruona, 2009). In both case studies, various social structures are presented as enablers for effective interaction of the workers which stimulates knowledge sharing practices among them. Furthermore, Mäki, et al., (2004, p.2) stated that: "*the most critical interactions in knowledge intensive work are expected to be the communication and knowledge sharing patterns between the members of the organization".*

7.3.2 Reliability and validity

Reliability of qualitative research refers to *"the degree to which the findings of a study are independent of accidental circumstances of their production"* (Kirk and Miller, 1986, cited in Silverman, 2011, p. 360). This research is considered as a reliable study, due to the several reasons. Firstly, the research strategy and data analysis methods were presented in a transparent way in the methods chapter of the thesis. Used categories for the analysis were also described in a detailed manner. The interviews were pre-tested and interviewers were trained. The need in low-interference descriptors (Silverman, 2001) were reached by tape recording of all interactions, careful transcription of these tapes according to the need of the analysis, and presenting the extracts of data in the results part of the thesis.

Validity is presented in the findings of this research, as the end results were analyzed from multiple perspectives and discussed together with the theroetical framework of this thesis. Collaborative nature of this research allowed to reflect and review the preliminary results and analyze them from critical perspective throughout the entire thesis process.

In subtopics, there were different methods used to analyze the results and to link it with theory in this thesis. Furthermore, the reliability and validity are being supported by the limitations made in the introduction of this thesis. In addition, external validity is taking place in case studies, as the lack of equal number of participants to the interviews from both generations was not allowing the research to be highly detailed relating to the generational differences. So, some generalizations were made around the external validity to support this thesis with more validity and reliability in the specific subtopic areas. In addition, peer review and examination was also utilized in the subtopic parts of this thesis and the results of both case studies included both subtopics, although they were not used in both case studies. However, the common results for the main research focus and the subtopics allowed the authors to validate and discuss together all the areas of the thesis and improve both simultaneously.

Chapter 8: Future research

This chapter will go through the possibilities for future research, for example; what kinds of aspects are evolved in this study and need to be studied further. Moreover, the future research chapter will give suggestions for improvements for future research upon the research topic and subtopics.

8.1 Intergenerational knowledge sharing

The intergenerational aspect reflects upon a much larger topic regarding the differences amongst the employees. The personality aspect of knowledge sharing could be researched further as well with a focus on the employee wellness, teamwork projects and the rewarding system of the employees. Perhaps the age along with other personality traits would explain some of the findings and results of this thesis, if these aspects were studied further. Moreover, according to the analysis of the results, experience might play a decisive role in knowledge sharing processes among the workers. That is why it is suggested for future research to consider knowledge sharing from an experience perspective by considering not only chronological age, but also mental age of the participants. In addition, a detailed research of the role of different contextual factors, like cultural or social, would be interesting in the future. Also, the same research might be done in different countries with the aim to compare cultural and historical contexts of each generation and existing differences in values with a link to intergenerational knowledge sharing.

Due to the focus of this research on intergenerational knowledge sharing processes, it is recommended for future studies to discover how intergenerational knowledge exchange or knowledge transfer is taking place in a particular organization. Furthermore, research about how individuals disseminate and utilize different types of knowledge within a company might be important in the future. Also, future research about measuring the individual and organizational outcomes of a certain knowledge sharing strategy is recommended. In both case studies of this thesis, knowledge sharing processes were taking place face-to-face and by using IT-systems. This fact required the researchers to focus on both ways of knowledge sharing. However, for future studies the authors suggest to take either a physical or virtual approach to intergenerational knowledge sharing. It will allow acquiring deeper understanding of the role personal interaction or IT-systems in knowledge sharing between generations in different directions. Moreover, it would be interesting to discover the challenges and possibilities of social media engagement regarding intergenerational knowledge sharing.

Finally, a quantitative research approach is suggested to measure the effectiveness of knowledge sharing between different age groups. The quantitative research would be

good in the comparative sense of the generations, to get more respondents to the data collection and a higher level of generational comparison with the intergenerational knowledge sharing issues.

8.2 Virtual communication

The analysis of the results of this subtopic revealed that virtual communication is an important tool for knowledge sharing in case company A. However, the reason might be the fact that this organization operates in the field of information technologies, and the level of systems used for different purposes is relatively high in general. That is why it is suggested for future research to study the use of virtual communication for knowledge sharing in companies within different fields and industries. In addition, a detailed analysis of the contextual factors that might influence knowledge sharing behavior in the virtual environment is needed.

Quantitative research is recommended in order to measure the effectiveness of knowledge sharing within the virtual environment. In the current thesis, virtual communication was considered from a general perspective without paying attention to the specific features. The reason is the limitation of the research based on the gathered data about case company A. Future research could be directed on the key characteristics of virtual communication that influence communication outcomes from a knowledge sharing perspective.

In case company A, the base of effective virtual communication was interpersonal interaction and trust among the members. The company is small, and all the employees know each other in person. It would be important for future research to extend the analysis of knowledge sharing within employees who work together virtually in virtually-based teams with limited opportunities for face-to-face communication. In addition, future analysis could also concentrate on how knowledge sharing is taking place in virtual organizations where employees do not meet in person at all.

Finally, interdisciplinary research is suggested to analyze human-computer interaction from different perspectives such as cognitive sciences, learning, social sciences, humanities and applied disciplines in computer science.

8.3 Organizational learning

Organizational learning subtopic provided a good additional viewpoint to the study. However, as this was the subtopic in this thesis, the resources were limited. Therefore, if the topic could be studied as the primary focus, which would include both intergenerational studies and knowledge sharing activities of the employees as the subtopics, then the findings could be more specific and valuable in general. As organizational learning was studied with limited time and resources, it is important to remember that the study was made in one specific department of the company. The study population should be increased, if the organizational learning would be shifted from subtopic to the primary study focus. Quantitative research would give organizational learning a more structured approach to the topic itself and ensure the reliability of the findings with more precise measurements and data.

However, this research provided insights into the case organization's knowledge sharing taking place in the specific department of the organization from the intergenerational point of view. Moreover, the insights could be taken into a broader focus and further research could be done, for example by choosing the interviewee population from all around the organization, in order to obtain a more visible result from all the different organizational levels. In addition, in possible future studies it would be beneficial to have the knowledge management strategy of the case company available for the study purposes. Moreover, organizational learning could be taken a few steps further with a research on the specific department, and on how the employees are trained to their vacancies and posts over a longer period of time. Furthermore, formal and informal communities and their relationship to knowledge sharing and organizational learning activities are recommended for future study focuses. Also, the applications of figure 18 (page, 119) should be tested and measured in future studies in more depth.

Finally, organizational learning should be researched from an intergenerational knowledge sharing perspective over a long-time observation: *"Because organizational learning occurs over time, studying organizational learning requires time series or longitudinal data"* (Argote & Miron-Spektor, 2009, p. 3).

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Appendices

Transcripts of the interviews

The transcripts of the interviews for this thesis are in the possession of the authors and the University of Åbo Akademi. The transcripts are in English and in written format. The transcripts do not contain any names of the interviewees and of the organizations taking part in this thesis. If there are any future studies relating to this thesis or to this international research project, then contact the faculty of Social Sciences, Business and Economics of Åbo Akademi University for further instructions on how to apply for the access to these transcripts. The transcripts are not for public use.

Interview guide questions

Briefing

Presentation of ourselves

What is the study/interview about?

Questions will be from general into specific

Recording the interview and the length of the interview

Any questions in advance before we begin?

Demographics

Age and position

Experience in the company in years

Previous job experience in years

Level of education (what degree?)

Could you shortly describe your working tasks?

Communication aspects

What do other employees ask you usually about? (Why? When? Is there an age difference?)

When did you last ask for advice and what did you ask? (Whom and in which context [face to face/system]? Were you comfortable about it? Was the advice helpful? Is there an age difference?)

In which circumstances, do you share experiences at work? (Systems, Meetings? Good experience, bad experience? Any examples? Any age difference you noticed?)

Do you have experiences in working in a team of mixed ages? How was it? (How is team defined in this specific example?)

Knowledge and learning aspects

What do you do when you need to solve a problem?

When communicating with your colleagues do you prefer face to face or systems?

Do you follow your 'gut feeling' often at work? In example, do you make decisions based on instincts and common sense or do your decisions have strong information to back you up.

When was your last 'aha' moment? (Realization as a tool of learning, example: you realize how something works)

Did it relate to any specific problem or situation, or was it a general type of Aha moment?

How did you record your aha-moment? Did you make notes about it?

Have you noticed any differences in the working methods of younger or older employees? (E.g. concerning communication, system usage or learning?)

Do you learn from older/younger employees?

Organizational learning

What actions are taken by the management to organize or initiate knowledge sharing?

Do you know how to find relevant information concerning your working task?

Do you feel that they are learning new things at work on regular basis?

Do you share actively knowledge and in which environments?

Do you solve problems independently or collaboratively?

Have you received job specific training and if so, what type of and was it enough for you to perform your work properly?

How do you learn the best? Is it easy for you to learn new things at work or do you find learning them difficult at times?

How many changes have you witnessed recently in your work tasks? Any new ways to do things or new tools for working?

What changes? Are they big or small changes?

How have these changes been introduced to you?

Have you managed to integrate these changes into your daily working routines?

Are you given enough time to learn the new things at work or do you feel stressed over learning the changes?

Systems

Which systems do you use regularly? How and in which context do you use them?

How do you communicate with colleagues in these systems? (grouping systems, communication tools)

Which software, tools or systems do you use to share your information?

Do you see any difference concerning the systems that are preferred by younger or older colleagues and how they use them?

Virtual communities

In what cases, do you usually use virtual (online) interaction with your colleagues? Please describe in more detail how do you do it and what platform do you use for it? Is it useful in your opinion? Why?

Please describe the situation when you searched for the solution of the problem online.

Please describe the situation when you shared your opinion online in order to help your colleagues.

What do motivate you to contribute to the online corporate social network? (the reasons)

How do you feel use virtual/online tools for work and communication with your colleagues?

Comfortable? If yes (why?), no (why?)

What do you think what are the benefits of virtual communication?

Have you ever had any problems or difficulties using the systems for communication?

If yes, please describe the situation.

Do you trust to information you find within this online interaction? Why?

What could be the possible barriers to trust?

In your opinion, what are the bases of trust in online community with colleagues?

What is your opinion about how could online communication be improved?

Debriefing

Would you like to add or correct anything?

If you have any questions later concerning this interview, please contact me.

Thank you for your valuable time and effort to participate in our research.