



**ENHANCING A KNOWLEDGE INTENSIVE SERVICE PROCESS WITH
KNOWLEDGE MANAGEMENT AND DATA DRIVEN MANAGEMENT**

Lappeenranta–Lahti University of Technology LUT

Master's Programme in Business Administration, Master's thesis

2023

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ABSTRACT

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Business Administration

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Enhancing a knowledge intensive service process with knowledge management and data driven management

Master's thesis

2023

95 pages, 7 figures, 5 tables and 2 appendices

Examiners: Professor Kirsimarja Blomqvist and Assistant Professor Henri Hussinki

Keywords: customer service, knowledge management, data driven management, knowledge intensive business service

To provide great customer value, companies operating in the field of knowledge intensive business service must have competent employees with access to needed information when working in customer service. The main characteristics of good service are customer service agents' capability to solve customers' problems and the efficiency of the service process.

This Master's thesis delves into how knowledge intensive customer service process can be enhanced and streamlined with data driven management and knowledge management. The theoretical framework is formed by preceding research on business process management, knowledge management, and data driven management. The framework contemplates different components of knowledge intensive business service and discusses how the components influence each other and what type of construct they form together. The empirical part of this thesis is a qualitative case study that was conducted by studying digital customer case handling in one business area in an international financial company.

The results indicate that digital customer case handling that demands human interaction is slow because of the overwhelming amount of unstructured data needed in the work. System automation handles easy-to-solve customer cases, but the most complex cases are directed to customer service agents. To enhance the handling of the most demanding customer cases, an organization must have excellent knowledge management resources, processes, and practices. Modern IT solutions have a big role in assisting the agents to find relevant information. Hence, knowledge transfer and new knowledge creation with colleagues emerged as factors accelerating the process. Fostering a culture emphasizing knowledge sharing and investing in IT solutions facilitating easy information retrieval can enhance the digital customer service process.

TIIVISTELMÄ

Lappeenrannan–Lahden teknillinen yliopisto LUT

LUT-kauppakorkeakoulu

Kauppätieteet

Satu Edelman

Tietointensiivisen palveluprosessin parantaminen tietojohdamisen ja dataan perustuvan johtamisen avulla

Kauppätieteiden pro gradu -tutkielma

2023

95 sivua, 7 kuvaa, 5 taulukkoa ja 2 liitettä

Tarkastajat: Professori Kirsimarja Blomqvist ja Apulaisprofessori Henri Hussinki

Avainsanat: asiakaspalvelu, tietojohdaminen, datalla johtaminen, tietointensiivinen palveluliiketoiminta

Tuottaakseen arvoa asiakkailleen, tietointensiivisillä aloilla toimivilla yrityksillä tulee olla osaavia työntekijöitä, joilla on pääsy tarpeelliseen tietoon asiakaspalvelutilanteessa. Hyvän palvelun tunnusmerkkejä ovat palveluprosessin tehokkuus sekä asiakaspalvelijan kyky ratkaista asiakkaan ongelma.

Tässä Pro Gradu -tutkielmassa tarkastellaan, kuinka tietointensiivistä asiakaspalveluprosessia voidaan parantaa ja tehostaa datalla johtamisen ja tietojohdamisen keinoin. Tutkielman teoreettisen viitekehyksen muodostavat aiempi tutkimus prosessijohtamisesta, tietojohdamisesta sekä datalla johtamisesta. Viitekehyksen avulla tarkastellaan tietointensiivisen liiketoiminnan eri osatekijöitä, niiden muodostamaa kokonaisuutta sekä vaikutusta toisiinsa. Tutkielman empirian muodostaa laadullinen tapaustutkimus, joka on tehty erään kansainvälisen finanssialan yrityksen asiakaspalvelussa, jossa tutkittiin sähköisen asioinnin prosessia.

Tutkimuksen tulokset osoittavat, että sähköisten asiakastoimeksiuntojen käsittelyä hidastaa työssä tarvittavan strukturoimattoman tiedon suuri määrä. Automaatio hoitaa helposti ratkaistavat toimeksiannot ja palveluneuvojille ohjautuvat ainoastaan monimutkaiset, usein henkilökohtaista kontaktointia vaativat tapaukset. Jotta vaativimpien toimeksiuntojen hoito tehostuisi, se edellyttää yritykseltä erinomaisia tietojohdamisen resursseja, prosesseja sekä käytäntöjä. Modernit IT järjestelmät parantavat tarvittavan tiedon saatavuutta ja löydettävyyttä. Tiedon jakaminen sekä uuden tiedon luominen työyhteisössä ovat tulosten perusteella palveluprosessia nopeuttavia tekijöitä. Luomalla kulttuuri, jossa korostetaan informaation jakamista sekä investoidaan tiedon löytämistä helpottaviin IT-ratkaisuihin, voidaan tehostaa sähköisten asiakaspalvelutoimeksiuntojen hoitoa.

ACKNOWLEDGMENTS

Sometimes a magician is amazed by her own trick. This thesis is my greatest magic trick so far. These years of knowledge management studies have been like a rollercoaster ride including high peaks of joy over accomplishments and the lowest valleys of struggle to meet deadlines. Nonetheless, I made it and magic happened. Now it is the moment to acknowledge you, who have enabled my journey.

First, a big thank you to all of you who participated in my research as informants or supported this study in other ways. Without your time and effort, this thesis would not exist.

I got lucky and got to work with Assistant Professor Henri “Brofessor” Hussinki, who kept me on the right path during the writing process. Henri, I’m grateful for your tips, guidance, and encouragement. It was precious.

I’m eternally grateful to Mom and Dad for your help, support, and encouragement when I’ve been balancing between work, studies, and family life. Thank you to my brother Pasi for your brutal honesty and sparring. There is nobody else than you bro, who gets me quite like you do. The three of you have believed in me every step of the way. Love you always.

Taina and Maiju, my gals in the back row of the class. I’m deeply grateful that TIJO-studies brought us together. I couldn’t have done this without you. You provide so much joy into my life and your peer support has been my guiding light during the darkest moments. You are the best sisters in arms a girl can get.

Finally, the kings of my heart: Harri, Viljami, and Aleks. Thank you for tolerating the days and weeks when I’ve been busy, mentally absent, and moody. You kept me grounded, trusted in my abilities, and gave me strength on this journey. You are the first, the last, my everything.

Espoo, October 27th, 2023

Satu

”Let’s go invent tomorrow rather than worrying about what happened yesterday.”

Steve Jobs
D5 Conference: All Things Digital (2007)

ABBREVIATIONS

AI	Artificial intelligence
BI	Business intelligence
BPM	Business process management
DDM	Data driven management
IT	Information technology
KBV	Knowledge based view of the firm
KIBS	Knowledge intensive business service
KM	Knowledge management
OKMS	Organization's knowledge management system
RBV	Resource based view of the firm
WFM	Workforce Management

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1 Introduction

The World Economic Forum annual meeting 2023 in Davos discussed the current and future issues global economy is facing. Due to ongoing environmental, social, and geopolitical crises, governments, businesses, and households are experiencing versatile and unpleasant challenges. Weakening demand and increasing interest rates are seen as the major restraints for global economic activity. The International Monetary Fund (IMF) predicts a third of the global economy to enter recession during 2023. (World Economic Forum 2023) Since the global economy is in turmoil, it is even more crucial for businesses to identify their sustainable competitive advantage and improve the features that continue to carry solid returns during turbulent times.

The Resource based view of the firm (RBV) refocused the strategic thinking from firm structure and external factors to internal resources that the organization holds. RBV states that organizations gain competitive advantage by governing and combining the unique resources and capabilities in their possession. (Barney 1991, Handzic 2017, Grant 1996) Knowledge based view of the firm (KBV) recognises knowledge as the most important strategic resource of an organization. According to KBV, organization's primary role is to integrate the knowledge residing in individuals into goods and services (Grant, 1996). While knowledge is used in a sophisticated manner in value creation, the organization is actually enforcing its efficiency and performance.

In service providing organizations, like financial service institutions, knowledge is without any doubt the most valuable resource and the source of competitive advantage. As the differentiation of the actual service products between financial companies are limited, the pole position on the market needs to be attained with something else than unique products. As Porter (1996) states, a company can outperform its competitors if it can establish a difference that it can maintain. A financial service company needs to be either excellent at managing risks or extremely good at providing added value to customers in order to stay competitive. Achieving the pole position requires both.

To provide great customer experience, an organization needs to have knowledgeable people working in their customer service frontline. Customers expect their case to be handled quickly, efficiently, and resolved within first contact. (Harvard Business Review

Analytic Services 2023) Since customer service is people to people – function, it cannot be standardized to the level of each customer interaction. Key factors in good service are the service agent's personal expertise and capability to solve customer's problem as efficiently as possible. The process is steered by managers, but the interaction between customer and customer service agent is unique every time. To be able to gain sustainable competitive advantage in customer service, an organization needs to fine tune its process into an efficient and straightforward one, while enabling skilful knowledge workers to use and gain more knowledge to help customers. (Berg, Buesing, Hurst, Lai & Mukhopadhyay 2022)

This master thesis studies how customer service process in knowledge intensive business can be enhanced with knowledge management (KM) and data driven management (DDM). KM can be defined as an array of management activities that enable the organization to deliver value from its knowledge resources. It comprises of knowledge processes like knowledge acquisition, creation and distribution and management practices that support these processes. (Andreeva & Kianto 2012, 619) KM also offers practices and understanding on how to support continuous learning and adjust data collection and analysis according to business needs (Pauleen & Wang 2017). DDM combine people who have contextual understanding of the business problem, people who have problem solving capabilities and data analytics outputs in supporting decision making. The purpose of DDM is the ability to make decisions and direct the organization based on data. (Ghasemaghaei 2019; McAfee & Brynjolfsson 2012) Even though data is recognised as a value creator in organizations, KM includes organizational dimension, frameworks, strategies, and culture into the discipline (Tian 2017). In other words, KM combines the theoretical base and practical know-how to understand what data is needed for the organization to run and how the data should be analysed to support key processes and decision making (Pauleen & Wang 2017). KM and DDM can be seen as tools facilitating customer value creation. This study is set to bring understanding if they can enable improved customer experience and competitive advantage to the company.

Customer service event is based on knowledge acquisition and knowledge exchange between customer and customer service agent. That is why KM and customer relationship management are in a key role in customer service process. Modern information technology (IT) systems, like customer center platforms, are enabling efficient case handling and

robotisation is saving time by handling some routine tasks. However, the most complicated cases still need human skills to validate, explain, create, communicate and understand the essence of the case. Due to digitalization, customers prefer the digital channels over the phone and expect their case to be handled faster than before. Companies need to innovate ways to handle the expanding stream of digital customer cases with the scarce human resources they have. The ways of handling incoming digital workflow must be smart. Time and resources wasted in the process need to be minimized to keep the employees and customers happy. (Berg et al. 2022; Harvard Business Review Analytic Services 2022)

The purpose of this master thesis is to study how a digital customer case process can be enhanced with KM and DDM. With this study, the researcher seeks to bring an understanding how to reduce resource and time loss generated in the process and streamline digital customer case handling. This study contributes to the academic discussion by widening understanding of KM practices and DDM used in everyday operations to empower organization's knowledge intensive service process. (Andreeva & Kianto 2012; Martelo-Landroguez & Martin-Ruiz 2016; Tian 2017; Pauleen & Wang 2017; Ghasemaghaei 2023) One of the key questions of this study is to identify which elements in customer service process can be steered by data and what part of the process requires human interaction. In addition, this thesis aims to add to the understanding of how softer factors like organizational culture and, on the other hand, IT and technology influence the knowledge intensive service process. As this study discusses and investigates key capabilities needed to provide knowledge intensive service, it adds to that area of research too. (Ritala, Hyöttylä, Blomqvist & Kosonen 2013) To understand how to improve the service process from the current state, this study delves into practical implications of how knowledge workers' daily tasks can be assisted or facilitated to minimize losses formed in the process.

1.1 Background of the study

This research is conducted in a case company, operating in the field of financial services with over 3,7 million customers in the Nordic and Baltic countries. The case company has both private consumers and commercial enterprises as customers. Since the case company is working in the market with a lot of competition and homogenous service offerings

between competitors, customer retention is extremely important. Finding the competitive advantage in the saturated markets is a challenge.

Customer service is the heart of any financial service company. In there, customers are met, new services are sold, and customer cases handled. Due to a large number of customer contacts in various channels, the customer service processes must be designed and monitored carefully to enable the most valuable function of the company to work in an efficient way. Due to increased digitalisation, financial service providers offer their most common service functionalities on digital platforms as a self-service, to enable smooth and frictionless service experience to the customer. However, when the customer cases are handled, the service agents need to interact often with different stakeholders of the case by phone or by email. Most commonly the reason for additional contact is missing or wrong information or the need to get new information. Every time the agent needs to contact any stakeholder in the process, the customer case handling is delayed and the case gains additional complexity. The goal of the case company is to provide the best and smoothest possible customer service experience for each customer.

Traditionally, companies operating in financial sector have trusted on phone as their primary channel for customer service. However, rapidly proceeding digitalization has increased the demand for online customer support services like e-mail, chat and chatbot and Covid-19 accelerated that transition even more. Based on the case company's statistics, the number of digital customer cases is increasing all the time. Many easily solvable customer cases have been automated and they are solved with the help of automated or robotic process handling. Despite of that, there is still a significant number of cases that require individual knowledge, human-to-human interaction, and employees' creativity to be solved. At the same time, human resources available are scarce, and demand of highly educated knowledge workers is increasing due to the speed of changes in our living environment (Schwab, 2016). The challenge is, how to streamline the service process so that valuable intellectual capital is not wasted.

Once a customer has opened a digital case, it ends up as a task to the customer service agents' internal ticketing system. The tickets are distributed to the agents as tasks according to their skills and availability. Some of the customer cases can be solved quickly by the agent. Most of them demand usually an additional contact with the customer or

other stakeholders. These contacts create additional work tasks in the task queue as visualized in Figure 1.

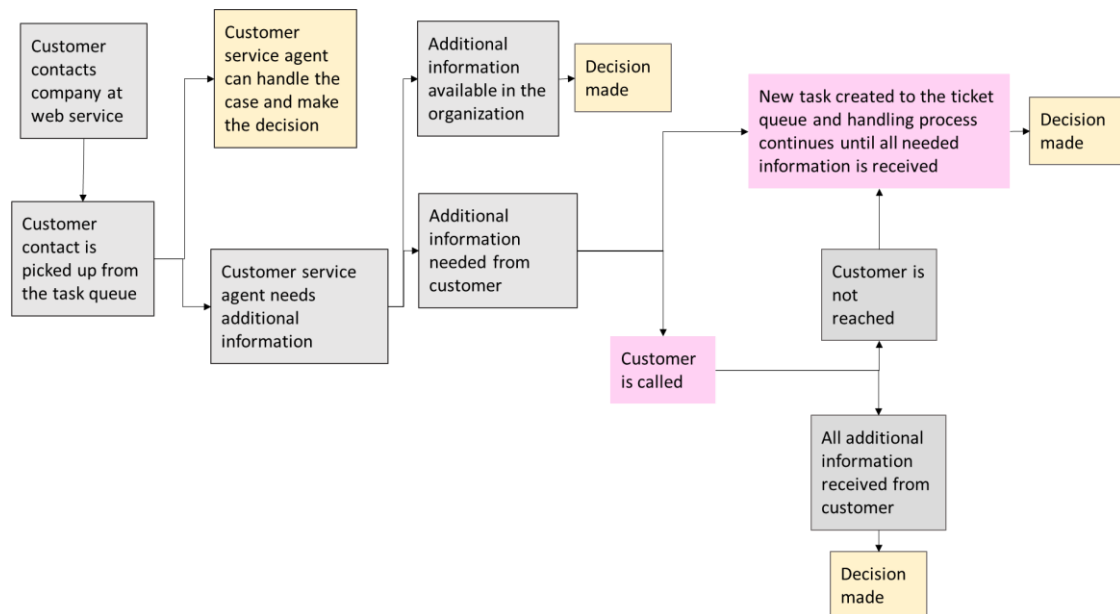


Figure 1: Customer case handling process

In the labour market, the demand for knowledgeable customer service personnel exceeds the supply. Meanwhile, the number of customer contacts is increasing due to the growth of the companies and the number of services sold. Companies face the classical dilemma: How to handle an increasing number of customer interactions with a smaller number of employees. Modern contact center tools provide heaps of data in real time: How the customer service is running, how fast customer contacts are handled, how many tasks there are in task queues, and in which part of the customer service organization additional resources are needed most urgently. Workforce management (WFM) systems forecast the resourcing needs in each area of customer service and follow up on how the planned work shift arrangements are realised. The organization is well-informed about the process flow and its possible bottlenecks.

1.2 Problem setting

This study initiates from a business life pain point: How to steer the digital customer case handling process better to become more efficient in serving customers. The primary goal of the customer service center is to handle as many customer cases with first-time resolution as possible and provide customers fast decisions on their cases. This research starts by seeking answers to the first sub-question (SQ) in order to understand the current situation, its challenges, and the settings of customer case handling in the case company. That is done by researching the case company's digital customer case handling process to understand current structures, workflows, and management practices. To find answers to SQ two and three, this study combines earlier literature written on related topics, empirical findings of participant observation and interviews conducted in the case company. Based on the findings of all sub-questions, this study is able to discuss and conclude regarding the research problem.

The research problem is formulated as follows:

How to enhance and streamline knowledge intensive service process with knowledge management (KM) and data driven management (DDM)?

Sub questions are:

SQ1: What challenges the service process currently has?

SQ2: How DDM can improve service process management?

SQ3: What is the role of KM in the knowledge intensive service process?

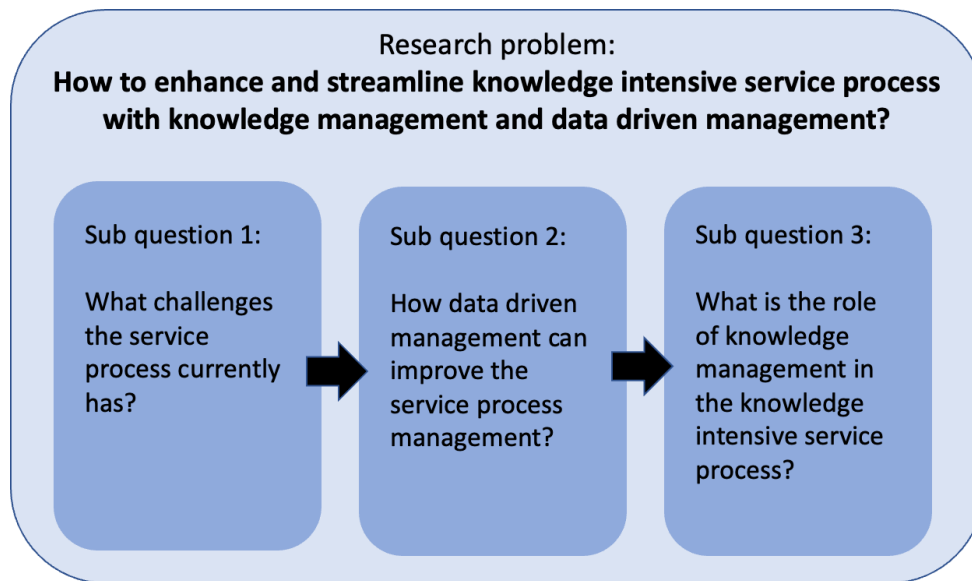


Figure 2: Research problem and research questions

As presented in Figure 2, each sub-question presents a step to gain a deeper understanding of how to improve the service process. The data collection starts by gathering information about the current issues in the digital customer case handling process. As a second step researcher aims to collect information about the practices, tools, methods or policies, which could help to streamline the process. As a third step, the role of human-to-human service is evaluated as a part of the knowledge intense service process. The purpose of this step is to understand how KM practices can accelerate the process and reduce the loss of time and resources during the process.

1.3 Delimitations of the study

This study is set to understand what the current challenges in customer case handling process are and how it can be streamlined. To narrow the scope of this study, the empirical part of the study concentrates on investigating only cases initiated in the digital customer interface. Customer service happening over the phone, chat or via post is limited out of the scope. Since the research area is wide, the empirical research is conducted by studying one organization's one service process of many, in one country. This means that differences in digital customer service processes between other business units or between countries are not analysed. Due to confidentiality reasons, a more detailed nature of the type of customer

service studies is not mentioned in this study report. The data collected for this study covers both business-to-consumer (B2C) and business-to-business (B2B) customer services. Nonetheless, the analysis of the customer cases' content or the type of additional task created during the customer service process is limited out of the scope. Since the focus is set on how the digital customer service process can be steered better, it does not discuss about organizational structure or strategy of the case company.

Customer service process could also be studied through other process development lenses or strategic management theories than KM and DDM. However, this study focuses on knowledge as an organization's strategic resource and that is why other organization's external factors affecting the success of organization are delimited. As an additional limiting factor, this study is conducted in one case company only. Comparison of the findings between other financial organizations or other knowledge intensive businesses are lacking, which means that no inductive conclusions can be made based on the findings. Thus, considering the above-mentioned limitations, the results of this study can provide good insight into the case company how to enhance their digital customer service process. Despite the fact that the findings cannot be generalized to apply in all financial sector companies or generally in the field of knowledge intensive business service, this study can provide more understanding to others which factors or practices are found accelerating the service efficiency.

1.4 Key definitions

Knowledge management

KM has its roots in the knowledge based view of the firm (Grant 1996; Spender 1996), which considers knowledge as the most important resource of competitive advantage and the key differentiator between organizations' performance. (Andreeva & Kianto 2012) KM consists of naturally existing knowledge processes like knowledge acquisition, creation or transfer, and management practices that support the knowledge processes. KM can be defined as an array of management activities that enable the organization to deliver value from its knowledge resources. (Andreeva & Kianto 2012, 619) KM is nowadays defined as a combination of technical and human actors, which are needed to redeem the full potential of knowledge resources. The power of computing and rapidly developing technology

combined with managing intellectual capital like employees' individual know-how can together become a strategic asset to a firm. (Bhatt, 2001; Meso & Smith, 2000)

Business process management

Business process management (BPM) is described as the method of how governing work is performed in an organization. The purpose of it is to ensure consistent outcomes and enable improvement in operations. However, the purpose of BPM is not to monitor and improve how individual tasks are performed, but to manage the chain of events, activities, and decisions, which create value to the organization and its customers. The chain of activities is called process. BPM can be seen as an organization's capability, which lies on the same level as other organization's management disciplines like risk management. (Dumas, La Rosa, Mendling & Reijers, 2018)

Knowledge intensive business service

Knowledge intensive business service (KIBS) is defined to be a particular class of service, in which the service process tasks and service products are concentrated around information or information flows. Knowledge is a key factor of their production, but also the "good" that these companies sell (Field 2016, 87). KIBS is characterised as business that develops tailor-made solutions or customized products to their customers. However, Aarikka-Stenroos & Jaakkola (2012) remind that KIBS should not be limited to only certain industries, but it can be used to characterise organizations regardless of their industry. As long as the services that the organization provides are knowledge intensive, they serve problem-solving function and they are strongly interactive or customer oriented, the services can be referred as KIBS. (Aarikka-Stenroos & Jaakkola 2012)

Data driven management

Decision making is the core activity in every organization. It is by nature a knowledge intensive action that is fuelled by data that is gathered from internal and external sources. However, data alone does not make any company successful. An organization needs to have a leadership team that is able to utilize available data to set measurable goals, sense threats and opportunities in the business environment, and take action according to them. The core of DDM is the ability to make decisions and direct the organization based on data. DDM combines people with tacit knowledge and contextual understanding of the business problems, people who have problem solving skills, and data and analytics outputs in supporting decision making. (Ghasemaghaei 2019; Ghasemaghaei 2023; McAfee & Brynjolfsson 2012)

2 Knowledge as organization's key resource

In this section two fundamental perspectives in strategic management are presented. Firstly, the resource based view of the firm (RBV), which regards the internal organizational resources of the firm as the key factors of success, is being presented. Following that, the knowledge based view of the firm (KBV) is introduced. Knowledge is pinpointed as the most strategic resource of the firm by KBV. These two views serve as the foundation for the subsequent discussion of the elements of knowledge intensive business services (KIBS) and the factors influencing them.

2.1 Resource based view of the firm

One of the most prominent discussions and areas of research in strategic management has been the sources of sustainable competitive advantage. Since 1960s to the late 1980s the discussion concentrated on underlining how an organization can achieve sustainable competitive advantage by implementing a strategy that exploits its internal strengths or avoids external threats or preferably both, while avoiding internal weaknesses and exploiting external opportunities. (Prahalad & Hamel 1990; Porter 1996; Spender 1996; Handzic 2017) The RBV refocused the strategic thinking from firm structure and external factors to the internal resources the organization has in its possession. All the assets, capabilities, organizational processes, information, knowledge, and so on are counted as firm's resources by RBV. (Barney 1991, 99-101)

RBV argues that organizations gain competitive advantage by governing and combining the unique resources and capabilities in their possession. (Handzic, 2017; Grant, 1996) Sustainable competitive advantage can be achieved only when organization has resources that are rare, valuable, imperfectly imitable, and not substitutable. (Barney, 1991) RBV underlines firms need to position themselves based on their capabilities and resources, rather than goods and services produced by those capabilities. Capabilities are seen as enablers of production and that is why they determine how successful the organization is. (Barney, 1991; Ritala et al. 2013) The competitive advantage is gained by firm's capability to serve many markets with various products rather than specific markets with specific

products. By placing the resources and capabilities into the core of the strategy, the firm is more prepared for economic fluctuation since it is not dependent on certain markets or product consumption. RBV is argued to provide better endurance during uncertain times and changing markets than traditional business strategy that is based on product or market positioning. (Zack 1999, 127)

2.2 Knowledge based view of the firm

According to RBV, organization's competitive advantage is a result of organization's capability to develop and utilize its valuable, rare, inimitable, and non-substitutable resources. KBV underlines that knowledge is the most important resource and factor of production. Organization's primary role is to recognise and develop mechanisms, which enable individuals to integrate their specialist knowledge into goods and services. By leveraging knowledge, organizations can achieve long-term sustainable competitive advantage. (Grant, 1996; Inkinen, 2016; Bhatt, 2001) As Prusak (1996, 8) states "The only thing that gives an organization a competitive edge - the only thing that is sustainable - is what it knows, how it uses what it knows, and how fast it can know something new!" To simplify even more, organizations should concentrate on the value creation powered by the knowledge they possess. It is argued that the origin of all tangible resources is outside the organization. Due to that, it is more probable that competitive advantage arises from the intangible, firm-specific knowledge, which creates unique added value when combined with tangible resources (Spender, 1996). Utilizing the knowledge assets, the organization is able to create customer value and reach the primary goals set for the organization.

Grant (1996) argues that knowledge creation is an individual activity and knowledge is owned by employees. In other words, the biggest source of knowledge is employees' know-how and professional expertise. However, there is a critical distinction in how different types of knowledge can be transferred between individuals: Explicit knowledge, which is considered to be codified information like facts and theories, is able to be transferred at low cost. Tacit knowledge, on the contrary, is not codified and can be observed only through its application and acquired through practice. Transfer of tacit knowledge between people is uncertain, slow, and costly. It can be said that people are knowledge repositories in the case of tacit knowledge. (Grant, 1996; Grant, 1997) Nonaka

&Takeuchi (1995) see the knowledge workers as embodiments of knowledge. They gather, create, and update tacit and explicit knowledge on a daily basis. The knowledge workers working on the frontline of business, being constantly in touch with the outside world, accumulate the latest information on markets, customers, technology, and competition. (Nonaka & Takeuchi 1995, 152) Knowledgeable employees are better at recognizing opportunities and threats in the market, which enables them to make better decisions. Employees' knowledge sharing behavior is the driving force of the movement of knowledge across organization and from human to human. (Ghasemaghaei 2019, 15)

Whereas RBV emphasises the utilization of valuable resources, KBV aims to distribute, transfer, and integrate the valuable knowledge resources inside the organization to be able to receive the greatest possible value out of it. Grant (1997) explains this as a practice to avoid external replication: The better the organization is in integrating the knowledge into goods or services, the more sophisticated the integration mechanisms are, and the more difficult it is to replicate by any competitor. Knowledge resources are subject to economies of scale and scope. That applies especially to explicit knowledge. Once the knowledge is created, it can be deployed in additional applications at low cost. (Grant 1997, 451-452) If knowledge is not utilized, it is actually worthless (Inkinen 2016, 25). Repeatedly used knowledge is presumably an important resource of the firm. In the following section, a concept of knowledge intensive service is presented to capture the strategic role that knowledge has on services built on information and information exchange.

3 Knowledge management

The scientific discipline of KM was born out of the need to understand how to develop and manage organization's knowledge assets to ensure organization's successful performance and competitive advantage. Three megatrends; globalization, omnipresent technological development, and knowledge-centric economy have been the driving forces of KM's rapid development. To respond to the demands of current and future business environments each organization needs to learn and transform to remain competitive. (Handzic 2017, 8-10)

KM is a process involving various activities in finding, creating, storing, transferring, and applying knowledge. The goal of the process is to promote knowledge utilization in the organization. (Alavi & Leidner, 2001) KM helps the organization to gain insight and learn from its own experience (Herschel & Jones, 2005). Academics have presented different approaches to KM: Some underline the role of information technology (IT) as an enabler of reaping information from data repositories. Others refer knowledge residing within individuals and that is why they emphasise the role of human resource management as a key enabler of KM. (Bhatt, 2001; Grant, 1996) Nonetheless, KM consists of spontaneously existing knowledge processes like knowledge acquisition, creation or transfer, and management practices that support the knowledge processes. KM can be defined as an array of management activities that enable the organization to deliver value from its knowledge resources. (Andreeva & Kianto 2012, 619) Figure 3 illustrates the compound of knowledge resources, knowledge processes, and KM practices. Together these components form a KM framework for a firm, which is sometimes also referred as the architecture of knowledge management.

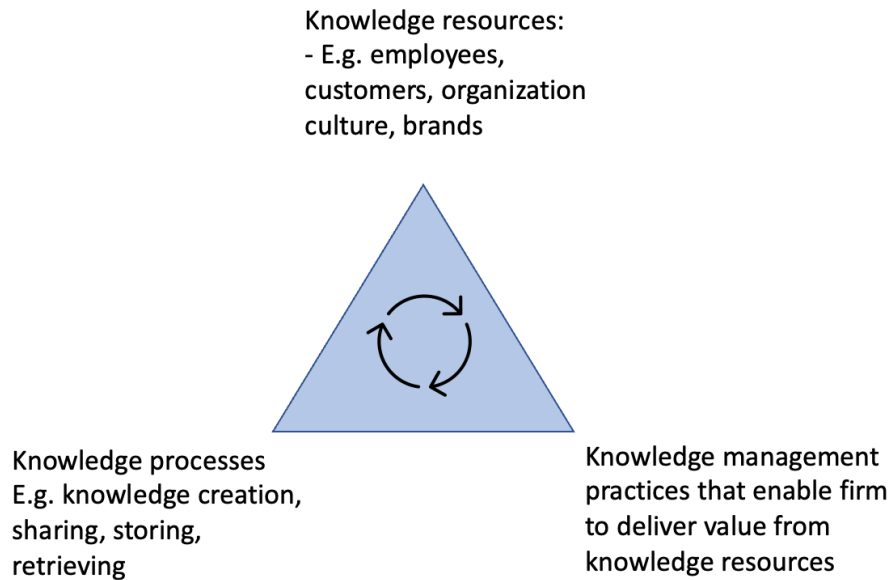


Figure 3: Frame of knowledge management components

It has been made evident that KM is influencing organization's operational and financial performance. As Andreeva & Kianto (2012) underline, KM is not only theories or management philosophy but also very concrete and systematic activities to encourage and enable employees to create new knowledge as well as share and apply what they already know. To gain the desired improvement in performance, an organization needs to be able to provide convenient IT systems, which support KM processes as well as apply human resource management incentives that are aligned with KM goals. (Andreeva & Kianto, 2012)

3.1 Data, information, knowledge and their distinctions

When talking about KM, it is good to understand what is meant by knowledge and how it differs from data and information. It is clear that data, information, and knowledge need to be defined in relation to one another (Rowley, 2007). Data can be considered as raw facts and it does not support any decision making as such (Bhatt, 2001). Data is often viewed in the light of what it lacks: it is unorganized, and it lacks meaning or value. When data is arranged into organized sets, it turns into information. Once it is processed further it gains relevance for a specific use or purpose and becomes usable and valuable information.

Scholars agree that data and information can be inputs to knowledge. (Rowley 2007, 171-172). Data and information are distinguished based on the context and situation, and they turn into knowledge once they get a meaning. Sometimes facts can be important information whereas in other contexts they can be just data without deeper meaning or relevance. Information and knowledge are distinguished in the same way based on interpretation and prior knowledge. (Bhatt 2001, 69-70). Knowledge can be seen as a mix of information, understanding, capability, experience, skills, and values. (Rowley, 2007) Nonaka, Toyama & Konno (2000) claim that continuous knowledge creation is the reason for a firm to exist. They see organizations as entities that create knowledge through action and interaction.

3.2 Knowledge creation process

It is essential to understand organization's capability to create new knowledge out of its own competencies and capabilities. Knowledge is dynamic by nature since it is continuously created in social interactions between individuals and organizations. (Nonaka et al. 2000) Nonaka & Takeuchi's (1995) pioneering theory of knowledge creation process builds on Polanyi's (1966) distinction between two types of knowledge: explicit knowledge and tacit knowledge. Explicit knowledge is general, rational, and understandable without specific context. It can be expressed in systematic language and shared in the form of data, specifications, manuals, and other similar kinds of documents. It is easily processed, transferred, and stored. Tacit knowledge, on the contrary, is very personal, contextual, and hard to formalize. Tacit knowledge is "here and now" by its nature, which means that it is tied to actions, routines, values, and emotions. It can be shared only in real time on face-to-face interaction. (Nonaka & Takeuchi 1995, 59-61) Both types of knowledge are needed in knowledge creation and they complement each other. (Nonaka et al. 2000, 8)

New knowledge is created in spiral spiral-shaped process, in which tacit and explicit knowledge are in interaction with each other. This means that new knowledge is created through the interaction among individuals or between individuals and their environment. Individuals influence their environment, but the environment, in which they interact, influences the individuals too. Dynamic knowledge creation in an organization is

consisting of three elements: 1) The process of knowledge creation through conversion between explicit and tacit knowledge. 2) Ba, the context of knowledge creation the individuals share. 3) Knowledge assets, meaning all the inputs, outputs, and moderators of knowledge creating process. The three elements of knowledge creation form the knowledge spiral together in interaction with each other. (Nonaka et al. 2000, 8-9)

One of the key points in Nonaka & Takeuchi's theory (1995) is the interaction between explicit and tacit knowledge, which is called knowledge conversion. They present four modes of knowledge conversion: 1) socialization, 2) externalisation 3) combination, and 4) internalisation. Knowledge expands in quality and quantity through these conversion processes. Together these four modes of knowledge conversion form so called SECI-process, which is illustrated in Figure 4.

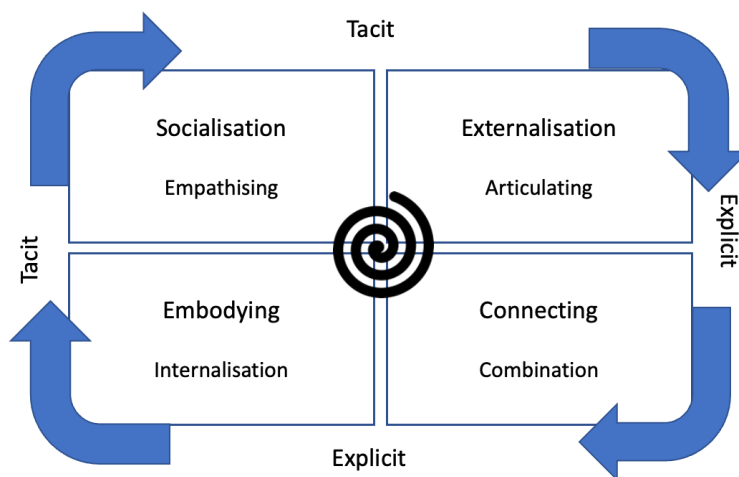


Figure 4: The SECI process (Nonaka et al. 2000)

New tacit knowledge is created in socialisation, which happens through shared experiences like spending time together. Socialisation may also occur outside the workplace in informal meetings or beyond organizational boundaries. However, it demands that mutual trust is created and shared for tacit information to be exchanged in a safe environment. When tacit knowledge is articulated into explicit knowledge, it is called externalisation. During externalisation the tacit knowledge is formulated more precisely while shared with others. The combination happens when explicit knowledge is connected to other explicit knowledge and converted into more complex and systematic new knowledge. Typically,

combination happens when internally and externally collected explicit knowledge is combined and the newly created knowledge is disseminated to the members of an organization. Once explicit information is embodied into tacit knowledge, the process is called internalisation. When explicit knowledge like manuals, regulations, procedures, and concepts are applied to use, and individuals link it to their existing know-how, the explicit knowledge is converted into individuals' tacit knowledge. Internalisation can also be described as "learning by doing". (Nonaka et al. 2000, 9-10)

According to Nonaka et al (2000) knowledge always needs a physical context to be created. They present "Ba" as a physical context in which knowledge is created, shared, and utilized. (Ba is Japanese and means space or place.) Since knowledge is created through interaction between people or between individuals and their environment, "Ba" is the context shared by those who interact with each other. In knowledge creation "Ba" is a key element as it provides the energy, quality, and place for individual conversions and to move along the knowledge spiral. Ba is the place in which information is interpreted and it transforms into knowledge. Nonaka et al. 2000, 14-15)

3.3 Organization's knowledge management systems

Meso & Smith (2000) define the KM system from the knowledge work perspective: It is a system that enables new knowledge creation, composition, and storage of externally created knowledge, the usage of existing knowledge, and the discovery of knowledge from internal and external sources. (Meso & Smith, 2000) Business Intelligence (BI) systems are often referred to as KM systems of an organization. However, even if BI enables combination of data from different sources, the production of business-critical information, and data storage, it lacks the tacit dimension of knowledge creation. BI provides information, and analysis is a result of a successful combination of knowledge resources, knowledge processes and KM practices (See Figure 3). Knowledge creation in an organization requires the interaction of tacit and explicit knowledge (Nonaka & Takeuchi, 1995). That is the reason why BI systems, or any other technologies processing explicit knowledge should be considered as a subset of KM, not as an organization's knowledge management system (OKMS). (Herschel & Jones 2005, 48-49)

Meso & Smith (2000) present in their article the two main perspectives on OKMS: Technical perspective and the socio-technical perspective. The starting point of the technical perspective of OKMS is the collection of software and platforms which enable knowledge work and new knowledge creation by providing access to data, information, and knowledge. Some of the platforms facilitate interaction between people, knowledge sharing, and organizational learning. Due to digitalisation, the examples of such software are numerous and new ones are brought to market every day. Nonetheless, the technical solutions are available to all actors on the market, and they cannot be considered as strategic asset to the organization. (Meso & Smith 2000, 227-228) Alavi & Leidner (2001) also refer to the technical perspective when defining the KM system as “information systems applied to manage organizational knowledge”. However, they admit that not all KM initiatives demand information technology (IT), but it supports KM in various ways. Information technology is seen as a means to improve individual and group level knowledge creation, but also as an enabler for networking between individuals and groups. (Alavi & Leidner, 2001)

The socio-technical perspective declares that OKMS is more than a collection of IT systems. OKMS consists of combinations of technology infrastructure (like tools and platforms), organizational infrastructure (for example organization structures and processes), corporate culture, knowledge, and people. While the technical perspective underlines the role of IT in OKMS, the socio-technical perspective considers the people to be the core of the system. All the organization’s stakeholders, from employees and owners to legislators, are considered in the people component of the system. However, employees are considered as the most important participants of the OKMS since they retain the intellectual capital, which is rare, valuable, non-substitutable, and difficult to imitate. Employees fuel the organizational learning process by articulating their tacit knowledge into explicit knowledge, which is stored in organization’s databases and operating systems. By doing so, employees share their personal knowledge for corporate use. New knowledge is created when employees internalize explicit knowledge from corporate systems into tacit personal knowledge. An organization’s intellectual assets are broadened when the new knowledge is articulated back to organization’s databases and operating systems. Even if IT is considered as an integral part of the OKMS, people, knowledge friendly culture, and organizational infrastructure that support knowledge creation, are the necessities the organization needs to draw the full benefit of its OKMS. To conclude, the socio-technical

perspective enables the organization to gain the sustainable competitive advantage of the OKMS. (Meso & Smith 2000, 229-233)

The rise of big data and DDM have been widely discussed in the academic literature and business journals as they seem to intersect with KM in many ways. The omnipresence of data is creating significant value to the global economy by making information transparent, accurate, and segmented. Data turns into competitive asset for firms when used for producing sophisticated analysis enabling valuable insights. Data is even facilitating new types of companies like Facebook, Google, or Amazon, that base their operations on information driven business model. (Tian 2017) ChatGPT is the latest innovation that disrupted the world of knowledge workers by providing easy access to an Artificial Intelligence (AI) platform in the form of a chatbot. ChatGPT is changing the work habits of even less tech-savvy users by offering for example assistance on writing materials, business plans, legal documents, or software code. (Ritala, Ruokonen & Ramaul, 2023) Some academics have even raised the question of whether the data-information-knowledge-relationship is already obsolete when data driven decision making is gaining foothold in organizations (Tian 2017).

According to Pauleen & Wang (2017) KM is having the leading role in how to govern and manage the usage of data in organizational settings. Tian (2017) is arguing that no matter how disruptive new technologies there might be, they are insufficient to cover all the managerial and information needs of an organization, because they lack the understanding of softer factors or human determined elements like organizational culture or human behavior. Even though data is recognised as a value creator in organizations, KM includes organizational dimension, frameworks, strategies, and culture into the discipline. (Tian 2017) KM combines the theoretical base and practical know-how to understand what data is needed for the organization to run and how the data should be analysed to support functional processes and decision making. Since the business environment is in continuous change, KM offers practices and understanding on how to support continuous learning and adjust data collection and analysis according to business needs. (Pauleen & Wang 2017)

4 Service management

This section presents business processes as the key activities of producing customer value in an organization. To create a better understanding of the business processes in the financial sector, a key concept of knowledge intensive service as well as key capabilities related to it are also presented.

4.1 Business process management

Business processes are defined to be a set of inter-related activities, events and decision points involving several actors and objects. To put it in a simpler form: processes are a way to get things done in an organization (Armistead, Pritchard and Machin, 1999). Collectively processes produce an outcome that creates value to customer. Business processes are usually cross functional and horizontal by their nature and they are characterised by flowing outside or across the hierarchical company structure. No single employee is responsible of the entire process alone, but it always demands collaboration. Business Process Management (BPM) is a compilation of methods and tools, which identify, discover, analyse, redesign, execute and monitor business processes to advance their performance. (Lee & Dale 1998; Dumas, La Rosa, Mendling & Reijers 2018) BPM covers both large enterprise-wide BPM programs as well as day-to-day management of single business processes (vom Brocke, Zelt & Schmiedel, 2016). BPM is having a strong customer focus on managing, measuring, and improving organization's processes while empowering people and enabling work in cross-functional teams. (Lee & Dale, 1998) Due to the strong linkage to customers, BPM is developed and enhanced once organization's gain better understanding of their customers' needs (Smart, Maddern & Maull, 2009).

BPM regards the part of business operations that impacts the customer value creation most. That is why BPM should be governed by following certain principles. The first and very focal demand is that all the central process activities are mapped and documented. Without adequate documentation the further development of processes is challenging. To ensure discipline, consistency and repeatability of quality performance BPM relies on systems and documented procedures. As BPM is focusing strongly on customers and customer value

creation, it needs to create horizontal linkages between key activities. To estimate the performance of processes and delivered output against set target, measuring activities and tools are also part of governing business processes. That enables understanding whether BPM is facilitating to meet corporate objectives. The fundamental idea of utilizing BPM is the continuous optimization of processes through problem solving and seeking for additional benefits. The purpose is to ensure superior competitiveness. However, BPM is based on the corporate culture. It cannot be achieved by having good systems and structure alone. People engagement is essential for its success. (Zairi, 1997)

The leading idea of BPM is to give the responsibility to the teams to meet the customer requirements. Job performers are the thinkers and doers since they design their work, review the outputs and revise the workflow in case it is not optimal. (DeToro & McCabe, 1997) Overall, accountability of the work tasks and decision making should reside very close, preferably within the task performing team, to enable explicit and tacit knowledge utilization. BPM provides a framework for KM and learning, which enable innovating and continuous development in the organization (Armistead et al. 2011). BPM seeks to create value by putting the focus on business processes. Especially in service business the processes are in the core of customer value creation. Processes are the means how customer expectations are met. (Smart et al. 2009) BPM is the essence of organization's change and development. Having focus on process management can yield as increased organizational effectiveness. (Armistead et. al 2011)

However, vom Brocke et al. (2016) remind that BPM projects and initiatives are prone to fail if context is not taken into consideration. BPM is proven to help organizations, but it should not be considered as one-size-fits-all approach without considering situational limitations and requirements. To be bring added value to the company, BPM needs to consider the circumstances in which it is applied, factors related to goals and Key Process Indicators (KPI), processes, organization and environment. The context should also influence on the selection of management practices. (vom Brocke et al. 2016) Since contextual factors like resources and environment change over time, BPM requires continuous adaption. If organizations neglect the continuous development of their processes, they most probably are not pursuing to satisfy their customers' needs and succeed on the market. BPM should be seen as continuous process journey and ongoing development task. (Smart et al., 2009)

4.2 Knowledge intensive business service

Knowledge intensive business service (KIBS) is defined to be a particular class of service, in which the service process tasks and service products are concentrated around information or information flows. Knowledge is not only the key factor of their production, but also the “good” that these companies sell. (Field 2016, 87; Strambach 2008, 170) In management literature, managerial and technology consulting, accounting, and law services along with advertising industry are brought up as examples of KIBS. They are characterised as businesses developing tailor made solutions or customised products to their customers, which are mainly other organizations (Xue & Field 2008; Clarke, Mortensen, & Freytag 2023).

According to Aarikka-Stenroos & Jaakkola (2012) all KIBS have three features in common: 1) the service provided is knowledge intensive, 2) the problem-solving function and 3) the service provided is strongly interactive or client related by character. Based on that, it can be argued that knowledge intensity is not limited to only certain industries, but it can be used to characterise organizations regardless of their industry and economic activities. Käpylä, Laihonen, Lönnqvist & Carlucci (2011) challenge the academic discussion of KIBS to move further from examining knowledge intensive services based on their business characteristics to analysing how knowledge assets are employed to create value in different organizations. Knowledge resources like employees’ know-how, organizational culture, values, brands and processes and systems can be seen as the sources of value creation. (Käpylä et al. 2011)

In this study, case company’s business in the financial sector is defined as knowledge intensive business, since it carries in its nature some key features of knowledge intensive service: The customer is playing a major co-creator role in the service transaction as he or she is providing information needed for the service process to actualise. Also, the problem-solving element is strongly present in case company’s every customer interaction. Field (2016, 87) calls the customer as a “co-producer of the knowledge-based service product”, since the service process demands a lot of information exchange and communication between service provider and customer. As a simple example, the customer needs to tell unique details about his/her case to the service agent to able to start the case handling process. The information transfer is a major component of the service process design.

However, the information flow between service provider and customer can be difficult and costly, or in other words sticky. The reasons for problems in information flow and sticky information transaction are versatile: The other party does not know what information is relevant for the other. There might be misunderstandings or even misinterpretations of the transferred information. The facilitation of knowledge transfer is the key issue in knowledge intensive service. (Xue & Field 2008; Field 2016) Despite of the difficulties in customer interaction processes in KIBS, organizations should manage and improve the collaborative process with their customers. To optimize the value creation in the service process, organizations should pay attention to develop platforms and procedures which invoke the dialogue, facilitate the identification of possible misunderstandings and prevent the development of unwanted solutions. Value creation in knowledge intensive service is dyadic and it requires versatile resources and active participation from both parties. (Aarikka-Stenroos & Jaakkola 2012)

4.3 Key capabilities in knowledge intensive service

Even if an organization had perfectly finetuned service processes, they are not alone enough to provide the competitive advantage. Many innovations or even disruptive new business ideas have appeared on the service sector, but the research on the key differentiators behind these success stories has been modest. Especially in KIBS, the role of intangible resources like capabilities are the source of competitive advantage. Capabilities in general can be described as a set of organizational processes that form the basis of inter-organizational differences. These differences determine the success of individual firm's activities. The key capabilities are identified as the distinctive capabilities that differentiate firms and create the competitive advantage. In a research four differentiating capability categories have been discovered: KM, service productization, process management and relationship orchestration (see Table 1). (Ritala et al. 2013)

Table 1: Differentiating capability categories and key capabilities (Ritala et al. 2013)

Knowledge management	Service productization	Process management	Relationship orchestration
Customer knowledge acquisition	Service offering visualisation	Process coordination	Customer relationship management
Customer-business development and renewal	Service offering modelling and modularization	Adaption and problem solving	Identifying and connecting the customer's knowledge network

KM was raised as the most important differentiator capability category. Activities like acquiring knowledge about customers and their needs or creating new knowledge to support customers were identified very critical and highly valuable capabilities in knowledge intensive services. Secondly, the capability of service productization was considered very relevant in knowledge intensive service due to high level of complexity in the offering. It creates added value if service offering can be visualised to customers as well as internally in the organization. Third, process management is needed, because the whole service is delivered through the process. However, the process needs to be flexible to be able to handle possible emerging issues while delivering the customer value. Fourth, relationship orchestration was also found to be a key capability category, because knowledge intensive services are typically performed between service provider, provider's networks and customer. Relationship orchestration includes managing interactions in the customer relationship as well as networking related to it. The researchers note that even if the KM and customer relationship orchestration might feel like self-evident key capabilities for a knowledge intense service provider, they alone are not a fast lane to enable above average performance and growth. To gain competitive advantage at the field of its business, organization should develop capabilities on service productization and process management as well to succeed and reach wider markets while maintaining good quality. (Ritala et al. 2013)

4.1 Managing knowledge to create value in service

In current times, companies need to be able to react fast enough in the turbulent business environment. The more knowledge the organization has on its internal and external environment, the better it is prepared to transformation and disruption in its environment. According to Prusak (1996) knowledge is the only sustainable resource which enables continuous value creation in an organization. Creating value in business is many faceted phenomena and it has been discussed widely in marketing and management studies. The core question still prevails: what value means to an individual or an organization? Martelo-Landroques & Martin-Ruiz (2016) note that firm only creates value when the customer perceives that value.

If the value is always perceived in an individualistic way, when can customer feel that he or she has received value from service? Grönroos (2008, 303) defines value creation as follows:

“Value for customers means that after they have been assisted by a self- service process (cooking a meal or withdrawing cash from an ATM) or a full-service process (eating out at a restaurant or withdrawing cash over the counter in a bank) they are or feel better off than before.”

The core of service business logic is facilitation of interactive processes with customer. Purpose of those processes is to create value in customers' everyday practices, regardless of whether the customer is an individual, household or business organization. (Grönroos, 2008)

Customers want their cases to be solved fast and efficiently. In certain type of customer cases, national law is regulating how fast a financial service company needs to react on the case and give feedback to the customer. Service convenience is created when a company succeeds make customer's life easier. Current IT solutions and platforms have enabled more efficient daily operations for financial service companies. By offering a webservice for customers to open cases and handling business, companies are pursuing to fulfil customer needs fast and efficiently to create additional value for their customers. However, customers' needs are not satisfied only by offering their services on web. To produce a

superior value to customers, companies need to understand how to manage knowledge so that their customers' demands are met. (Martelo-Landroguez & Martin-Ruiz 2016, 477)

5 Data driven management

The amount of data in the modern society is growing with unpredictable speed and organizations pursue to be data driven on their decision making (Storm & Borgman 2020). Data available for utilization is versatile by its origin and type: like for example videos, log files, sensor data and social media postings. Most of the data is generated in real time and the cost to store and refine it has decreased significantly. (Glass & Callahan 2014, 3-5) Companies do not succeed only because they have more or better data. When they have leadership teams that are able to set measurable goals and targets, the company can benefit from the data they have on their possession. It is also essential to be able to make decisions based on the data and set guidelines and direct the organization to succeed in the future. To combine the people with business problems and the data with the evidence supporting the decision making, company culture needs to rely on cross functional cooperation. To create that kind of a corporate culture is one of the biggest challenges to be tackled before a company can become data driven in reality. (McAfee & Brynjolfsson, 2012)

KM and DDM have a strong connection due to the fact that human knowledge is required to create the data and analytics capabilities. Human knowledge is the decision maker which decides where to collect data and which algorithms to use for analysing it. Once data is generated, knowledge decides to which purpose, operational, tactical or strategic, the data is used. Without knowledge, it is impossible to talk about DDM. (Pauleen & Wang 2017, 2) As it was noted earlier, data is raw facts, which does not produce any added value without refining. Data becomes knowledge when it receives meaning in the right context (Bhatt 2001). Employees' analytical skills and the sophistication of analytic tools are impacting organizations capability to utilize data and improve organization performance. In addition, if employees do not have adequate analytical skills, data processing alone does not improve organization's performance. It is notable that if organizations wish to improve their performance, managers need analytic tools not only to understand historical and current events but also to make predictive analysis, like for example text mining or forecasting. (Ghasemaghahi, 2019, 21)

The buzz word of latest decade has been big data, which is used when discussed about new characteristics of data. Big data's distinctive features from more traditional data sets are considered to be the great velocity, variety and volume. To simplify, it means that currently organizations deal with enormous amount of data, which emerges with ever increasing speed and volume, while the data itself appears in various forms like videos, audio files, pictures, customer reviews or blog postings. Chen, Chiang & Storey (2012) present a framework of business intelligence and analytics (BI &A) evolution. They call the first phase of evolution BI&A 1.0, in which data is mostly structured. The data is collected from the various legacy systems and stored in relational data base systems. Data management and data warehousing are the foundations of BI&A 1.0. In the early 2000's Internet started to offer new data collection and development opportunities. In the BI&A 2.0 the use of data is no longer only about reporting business functions, but also analysis of customer behaviour in online services, optimization of web services and product recommendations in web services. In the emerging BI&A 3.0 the data is originated also from mobile devices and sensors. This enables individual level targeted transactions which are specific to a certain context or location. (Chen et al. 2012, 1166-1168)

Knowledge resides in individuals (Grant, 1996), and that is why it is essential for an organization to gain knowledge and skilled people who are able to refine the raw data by cleaning and organizing the data sets, bringing the data available and visualising the data for the end users. To be able to lead with data, organizations need data scientists, data architects, analysts and other professionals who are able to transform the data into a form that business leaders can utilize it. Companies which wish to redeem the full benefit of the data available are recommended to focus on five aspects on their management: Leadership, talent management, technology, decision making and company culture. (McAfee & Brynjolfsson, 2012)

5.1 Data driven decision making

Improving on the decision making, which can also be called learning, is vital for organization's success. As the business environment is turning into more volatile and competitive, gathering and analysing reliable data and information is a critical success factor behind successful decision making. (Intezari & Gressel, 2017) Organizations can

improve the decision-making quality by sharing the knowledge received from data analytics tools, but sharing the outcomes alone is not enough to ensure better decisions. To become better, firms should invest in better utilization of data analytic tools and upgrade data analytics competency. Data analytics tools increase the level of knowledge sharing, but enhanced decision making requires organization to have advanced analytics competence. (Ghasemaghaei 2019, 21)

Utilizing data in organization management in the form of screening through reports containing numerical data is nothing new, neither is the large volume of the data. Thus, the variety of the data and integrating data from different sources seems to create issues in most of the organizations (Kiron, 2013). The capabilities of traditional analytics tools are not adequate for it, but more advanced analytics is needed. Organizations are more familiar with handling structured data, which has fixed coded meaning and format. It is most often numeric and stored in fields of data bases. On the contrary unstructured data has no fixed format. It can appear as a video, audio, free text or as a combination of all of these since it is most often resulted of human interactions. Due to non-numeric nature of unstructured data, it usually cannot be computed without prior transformation. (Intezari & Gressel, 2017) To gain the greatest value from data, organization need to focus on cross functional collaboration: Once they bring together people who understand the problems, right data and people who have problem-solving techniques, organizations can really exploit the full potential of data and improve their performance. (Ferraris, Mazzoleni, Devalle, & Couturier 2019, 1931)

Employees' personal skills and capabilities in utilizing data and analytics combined with business insight and understanding are especially important resources to an organization (Brynjolfsson & McAfee 2012). Insight is defined to be the experience during problem solving attempt, when a person believes he or she is about to find the right and true solution to the problem. Insight is described to be a set of feelings of accuracy, pleasure, ease, and confidence in problem solving. (Topolinski & Reber, 2010) The key issue is organizational alignment: Business and technology organizations need to work together towards common objectives. They need to have shared understanding of the business objectives as well as technological capabilities to thrive. (Kiron 2013, 2) Software is able to provide reports and summaries of data, but skilful people with insight are needed to interpret the results and analyse the data in the right context. That is why the appreciation

of continuous learning is so vital in companies pursuing to be data driven. (Gupta & George 2016)

Data-driven insight generation can be improved by collecting data from different sources. There are three main types of data-driven insight: 1) Descriptive insight that is focusing on understanding what already happened. 2) Predictive insight, which is trying to forecast what will happen in the future. 3) Prescriptive insight, which is trying to estimate the best course of actions to optimize the outcome. (Ghasemaghaei & Calic 2019; Ghasemaghaei, 2020) Currently advanced analytics is able to handle large data sets, spot patterns and solve problems beyond human capabilities. This sort of analytics is able to deliver completely new insights into underlying dynamics of market or business. By examining large data sets, new relationships can be discovered, which enables new model generation of how things are like likely to advance in the future. (Ferraris et al. 2019)

IT systems support and facilitate the creation, retrieval, implementation and sharing knowledge (Alavi & Leidner 2001). As a part of organization's KM system, the IT systems and data bases support the strategic and operational decision making in the company. IT systems supporting KM in the organization should be able to support unstructured data too, to ensure the good quality of decision making. In advanced KM systems human knowledge should be integrated into the data that appears in various forms and refine it into new knowledge and better business decisions. (Intezari & Gressel, 2017)

5.2 Company's data driven culture

There is no clear evidence that by relying only on data and data driven decision making, companies would yield major head start compared to competitors (Wamba, Gunasekaran, Akter, Ren, Dubey & Childe, 2017). Due to advanced software and relative low cost of IT systems, the highway of data acquisition, storage and refining is available to all the actors on the market. However, data as such is not rare or imperfectly imitable resource that could bring competitive advantage (Barney 1991). Gupta & George (2016) identified resources and capabilities organizations need to be able to utilize the data in organization's possession. It is not enough to make big investments, collect repositories full of data, and have access to sophisticated technology to become data driven. To benefit from data, organization needs people with data specific technical and managerial skills and

organizational culture that supports DDM. In a such organization, learning is valued and insights are derived from data and acted upon. Organization needs to have will to make the best use of its data. As a first step to become a data driven, organization needs to make self-assessment of all the above-mentioned capabilities and analyse its strengths and weaknesses regarding those. (Gupta & George 2016, 1061)

Many scholars have prepared listings of what is required from a company that wishes to empower data driven culture. Others are putting emphasis on the decision making, which is based on data, not on intuition (McAfee & Brynjolfsson 2012). Others highlight the cross-cultural collaboration between people with different capabilities (Ferraris et al. 2019) and some underline the importance of learning in the form of testing and experimentation even with the cost of failures (Berndtsson, Forsberg, Stein, Svahn, 2018). What is common to all of those listings is the interplay between leadership, organizational culture, managerial practices, data, and technology.

Latest development of Artificial Intelligence (AI) has shifted the discussion of technology and data utilization from “how could we use it” to “what it could do for us”. During the late 2022 American company OpenAI published a webservice called ChatGPT and it took world by a storm. In all simplicity ChatGPT is a chatbot based on AI. The solution is trained with human feedback so that is it able to provide usable and accessible responses. The reason for its immediate and wide success among all types of knowledge workers is its generative and conversational features, which enable easier access to the capabilities of an AI system than ever before. User simply asks a question from the bot and it provides an answer in seconds. If the answer is not applicable, user can ask the bot to generate a new answer or rephrase the question. ChatGPT is able, despite of its young age, to perform some of knowledge workers’ mundane tasks like summarizing notes and drafting emails. Actually, it is already outperforming humas in speed and sometimes in accuracy in some routine tasks. AI creates possibilities but also challenges to management and knowledge workers: What type of tasks will remain on human mastery? In which tasks it can assist humans and what task can be fully assigned to AI? How compliancy and security demands will be met and how to avoid pit falls of AI like bias or accumulation of incorrect information? As the technological development proceeds, it will challenge management, organizational culture, learning and other areas of data driven culture. (Ritala et al. 2023)

6 Synthesis of the theoretical framework

This thesis focuses to study how knowledge intensive service process can be streamlined and enhanced by means of KM and DDM. Foundations of this study lie on RBV and KBV of the firm. Together they state that competitive advantage is generated out of efficient utilization of organization's internal resources, especially knowledge assets which cannot be easily imitated by competitors. As already stated in the introduction (section 1) companies working in financial service business need to be extremely good at creating value for customer. As discussed, this case study investigates whether KM and DDM could enrich the BPM in such a way that it would help to minimize loss of time and resources and to create more customer value. In the theoretical framework the key concepts of DDM, KM and BPM and their relations with each other are introduced. The relations of the key concepts are summarised in the figure 5.

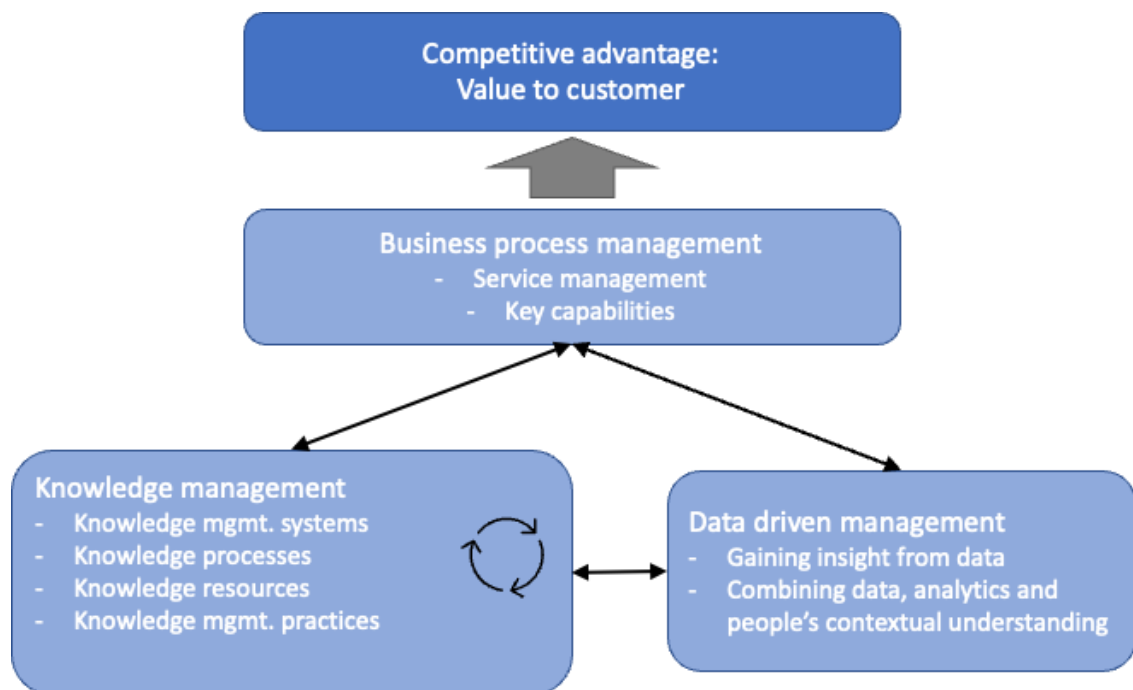


Figure 5: Value creating components in knowledge intensive service process

Business process management is governing how work, in other words different tasks, is performed in an organization. It aims to ensure consistent outcomes and enable improvement in operations. In this study the case company operates in knowledge intensive business, in which customer is playing a major co-creator role in the service transaction as he or she is providing information needed for the service process to actualise. To gain the competitive advantage, the case company needs to understand and nurture the key capabilities of knowledge intensive business to be successful. In the study of Ritala et al. (2013) KM was raised as the most important differentiator in the capability category.

KM system is the component that governs and develops how organization's most valuable resources are utilized. Based on socio-technical perspective knowledge management system consists of combinations of technology infrastructure, organizational infrastructure, corporate culture, knowledge and people (Meso & Smith 2000). The goal of KM is to advance the knowledge utilization in the organization and help the organization to gain insight and learn from its own experience. KM consists of knowledge processes like knowledge acquisition, creation and sharing as well as management practices supporting the above-mentioned processes (Andreeva & Kianto 2012). It can be stated that in knowledge intensive customer service knowledge is the key determinant for the service. Without mutual knowledge exchange and interaction of the parties, there is no service, neither business. However, the information flow between parties can be difficult, because of misunderstandings or wrong interpretation of transferred information (Xu & Field 2008). To optimise the value creation in knowledge intensive service, it requires versatile resources and active participation from customers and employees producing the service (Airikka-Stenroos & Jaakkola 2012).

Serving customers is also decision making. Customer service agents make small decision continuously for example what products they offer to customers, how to respond customer inquiries or by assessing whether the inquiry needs to be escalated further. It is vital for an organization to be able to improve on their decision making, which can also be referred as learning. To learn and to stay competitive, organizations need to be able to gather and analyse data from internal and external. In advanced KM systems human knowledge is integrated with data and processed into new knowledge and better business decisions. (Intezari & Gressel 2017) Nonetheless, studies show that relying only on data driven

decision making is not enough for companies to gain leading position among their competitors (Wanba et al 2017; Gupta & George 2016; Ferraris et al 2019).

Scholars have pointed out several focus areas, which companies should pay attention if they wish to become data driven; data based decision making (McAfee& Brynjolfsson 2012), cross cultural collaboration between people with varied capabilities (Ferraris et al 2019; Gupta & George 2016), and data driven culture that values learning and experimentation even if it would cause occasional failures. (Gupta & George 2016; Berndtsson et al. 2018). Hence, to gain value from data, organizations need to pay attention to that their orchestration of BPM and KM processes is supporting the data driven approach. Lately, the easy-to-use AI solutions like ChatGPT have shaken the grounds of knowledge work. We are already experiencing the era in which AI is outperforming humans at some areas of knowledge work. AI will have significant impact on what tasks will remain on human mastery, which will be assisted by algorithms and which tasks will be fully assigned to AI. (Ritala et al. 2023) In this kind of business environment only the interplay between technology, management practices, leadership, organizational culture and data can enable company's sustainable competitive advantage.

7 Research methods

In this section the research strategy and selected research method is presented. Additionally, this section presents the data collection and analysis methods used in this study and discusses the trustworthiness of the conducted research.

7.1 Qualitative method as research strategy

This study is conducted by using qualitative research method, which is usually based on collection of data that consists of written or spoken words and images. The foundation of qualitative research is to describe real world, which is versatile (Hirsjärvi, Remes & Sajavaara 2009, 161). Qualitative research is usually explorative and flexible because the problems studied by utilizing qualitative strategy tends to be unstructured and the main goal is to gather insight or constructive explanations rather than test hypotheses (Ghauri, Grønhaug, Strange 2020, 129). The qualitative method supports the researcher's goal to look at the research problem from different viewpoints and get a holistic understanding of the research problem. To understand the service process, which is the object of this study, qualitative research method enables researcher to use different data collection methods and observe the object through different lenses. (Alasuutari 2011, 84)

The ontological position of qualitative research is described as constructionist since it sees the reality as a process that people construct together. Reality is a creation of interactions between individuals rather than a phenomenon that exists "out there". (Bell, Bryman, Harley 2019, 356) In qualitative approach reality is understood as subjective. The perception of reality can differ between individuals since experiences and knowledge are different for each person and they can also change over time and context. (Eriksson & Kovalainen 2010, 13) From the epistemological position, qualitative research is described as interpretivist, which sees that knowledge is available only through social actors. It emphasizes understanding the social world by examining the interpretations of participants in that world. In other words, interpretivism is interested in how people understand social settings and events. (Bell et al. 2019; Eriksson & Kovalainen 2010)

The empirical part of the study is conducted as a case study to fully understand the customer service process as a phenomenon and explain the current circumstances. The method was found to be relevant since the subject of the study is a contemporary phenomenon with real-life context and researcher had no control over the events and process that were studied. Another reason to select case study as research method was the fact that research question requires extensive and in-depth description of the phenomenon and case study as method provides adequate flexibility for it. (Yin 2014, 3-4) As the phenomenon under investigation is nearly impossible to study outside its natural setting and the multiple variables are difficult to quantify, case study was considered as valid choice for this study. (Ghauri et al. 2020, 101-102).

Qualitative research is commonly following inductive strategy in which observed cases are used to draw more general statements or claims about most similar cases. Simplified, in inductive reasoning a theory is an outcome of the research. Thus, it has been criticised that there is usually deficient amount of empirical data that does not enable theory building. In fact, it has been even questioned if there is ever adequate amount of data to build theories. To overcome that criticism and to find a more pragmatic solution to link theory and empirical research, abductive reasoning was used in this study. Abductive reasoning is described to be like a process of researcher trying to solve a puzzle or a surprise. In practice, abductive reasoning is seeking to identify conditions that would make the phenomenon less fuzzy or turning surprises into usual practice. (Bell et al. 2019, 22-24) Abduction is the process of moving from the everyday descriptions and meanings to categories and concepts, which create the basis of understanding the phenomenon under research. (Eriksson & Kovalainen 2010, 23)

Abduction was found to be most suitable strategy for analyzing data as this study aims to shed light how to enhance knowledge intensive service process. Due to the reason that this was a one case study with limited sample size, it would have been challenging to make valid inductive conclusions based on that. Service process enhancements and acceleration has been viewed through many lenses and this research is not the first study exploring the KM perspective either. To contribute to the strategic management discussion of how KM or DDM impact service process, explorative data analysis of the collected data was considered as the most suitable way to process the data. Abduction allowed the researcher to explore the knowledge intensive service process as phenomena and compare the

findings to previous studies and analyse if there were new topics emerging or new ideas waiting to be discovered.

7.2 Single case study as a research method

According to Yin's definition (2014) this study is to be categorised as single case study by its design. Yin states that single case study can be used if the case is critical, unusual, common, revelatory or longitudinal by its nature. In other circumstances Yin recommends performing multiple-case study to enable the needed comparison between cases and avoid the situation that the case turns out to be something else than what it was thought to be in the beginning. (Yin 2014, 51-54) However, there are also other scholars claiming that it is no longer credible to separate case studies onto single-case and multiple-case studies. It is justified and valid from the perspective of science to perform a study in one organization when there are for example different units or teams in one multinational corporation that are to be studied and compared with each other, or some phenomenon, like cultural differences, is studied over time. The study remains credible even if it is performed in when organization when there is comparison between units of analysis is performed and conclusions are not generalized too far from the context of the study. (Piekkari & Welch 2020, 212-215)

7.3 Data collection

In this study two sources of data were used. The primary method of collecting data was unstructured theme interviews among service agents and their superiors to gain first-hand knowledge how the service process works. The second source of data was participant observation. All the data for the study was collected from case company's subsidiary in one country and all the informants had same nationality.

Interviewing was selected as the main data collection methods due to its flexible nature of collecting data of complexed and many folded processes like customer service. Interviews and especially theme interview can be seen as a discussion with predetermined objective. The ambition of the discussion is to get a thorough understanding of the phenomenon which is the subject of the study and that is why it was found to be very suitable data

collection method for this study. In the theme interview, researcher can direct the discussion, meaning data sourcing in this case, by placing questions, which lead to more relevant areas regarding the research problem. Researcher can also ask the interviewee to give examples, explain or define in other ways what she or he really means. This enables researcher to get more accurate and detailed understanding of the phenomenon. However, it should not be forgotten that even if the researcher is directing the interview, there is an interaction between interviewer and the interviewee. This means that they are influencing each other on the course of the interview, which needs to be considered when analysing the data. Interviewee might also be presenting only generally accepted views instead of speaking how he or she truly thinks. Because of these possibilities, the views presented in the interview should not be considered as unquestionable truth but as an interpretation of the phenomenon under study. (Puusa 2020, 103-108)

To gain as deep and wide understanding of the customer case handling process as possible, the researcher conducted direct observations. Purpose of the observation was to collect information that might be left unsaid in the interviews. Certain manners, customs or habits might be self-evident or unconscious to the service agents and that is why they might not be mentioned during interviews. Even if the observations were done in casual circumstances, researcher did not participate in the actual customer case handling.

7.3.1 Interviews and interviewees

The primary data for the study was collected by conducting unstructured theme interviews. The aim of the interviews was to understand in how and when the additional work tasks are initiated during the digital customer case handling process. Additionally, informants were asked if those situations could be avoided and what - if anything - needs to be done differently to simplify the process. To understand how the service process could be steered better, understanding of current managerial practices was accumulated and possibilities to improve it was discussed in the interviews.

Altogether eight informants, working in the case company, were interviewed. All the conducted interviews were one-to-one interviews. The informants were chosen in collaboration with the case firm based on their representativeness of organizational units and hierarchical position in the organization. The principal informants were customer

service agents, who are experts in digital customer case handling. To receive comprehensive understanding of the research problem, it was essential to receive first-hand information from the people working daily in the frontline with the customer cases. The same customer service agents were also observed for this study. Team managers and directors were also included in the informants to get more holistic picture of the handling process and its development. Team managers are responsible of the everyday management of the agents. They are the first people to notice if task queues start to grow and case handling is experiencing delays. Higher management was interviewed to gather understanding of the long-term development of customer case handling and the strategic management initiatives ongoing in the business area. The full list of informants is shown in Table 2.

Table 2: Interviewees and key discussion points

Interview	Interviewee	Key discussion points	Duration of the interview
1	Customer service agent	<ul style="list-style-type: none"> - digital customer case handling process - tools and practices used in the process - knowledge sharing among case handlers - issues requiring agent to create additional tasks to the task queue - challenges related to the case handling process that agent has identified - how to create value to a customer in customer service 	63 min
2	Customer service agent	<ul style="list-style-type: none"> - digital customer case handling process - tools and practices used in the process - knowledge sharing among case handlers - issues requiring agent to create additional tasks to the task 	53 min

		<p>queue</p> <ul style="list-style-type: none"> - challenges related to the case handling process that agent has identified - how to create value to a customer in customer service 	
3	Customer service agent	<ul style="list-style-type: none"> - digital customer case handling process - tools and practices used in the process - knowledge sharing among case handlers - issues requiring agent to create additional tasks to the task queue - challenges related to the case handling process that agent has identified - how to create value to a customer in customer service 	55 min
4	Customer service agent	<ul style="list-style-type: none"> - digital customer case handling process - tools and practices used in the process - knowledge sharing among case handlers - issues requiring agent to create additional tasks to the task queue - challenges related to the case handling process that agent has identified - how to create value to a customer in customer service 	46 min
5	Team manager	<ul style="list-style-type: none"> - management perspective to digital customer case handling - management tools used to steer the process - challenges in the customer case handling process - identified development needs - how to create value to a customer in customer service 	51 min

6	Team manager	<ul style="list-style-type: none"> - management perspective to digital customer case handling - management tools used to steer the process - challenges in the customer case handling process - identified development needs - how to create value to a customer in customer service 	62 min
7	Director, Customer service center development	<ul style="list-style-type: none"> - management perspective to digital customer case handling - development needs in the digital customer case handling area - challenges in the customer case handling process - identified development needs - Data driven culture - how to create added value to a customer in customer service 	63 min
8	Director, Customers service center operations	<ul style="list-style-type: none"> - management perspective to digital customer case handling - how to develop digital customer case handling - how to create the added value to a customer - data driven culture and how to develop it - future ways of working in the customer center 	60 min

Topics discussed during the interviews varied from current ways of working with digital customer cases, challenges of the current process, tools used in the everyday work to data used and needed in steering of the current digital customer service. The frame of interviews consisted of open-ended questions based on the theoretical framework of this study as well as the research questions and goals of this study. Themes covered in interview frame are visible in the appendixes (Appendix 1&2). Length of each interview is shown in Table 2. All interviews were carried out as video meetings by using Microsoft

Teams, but despite of the audio-visual communication tool used, no supporting visual elements like slide sets or reports were used during the interviews. The interviews were recorded and transcribed into text word-by-word. In addition to interviews, the researcher had also some informal discussions with informants during the observation and as casual contacts and communication during the research. These discussions were not recorded, but the key insight was documented as notes by the researcher directly after the discussion.

The choice to perform theme interviews with no strictly formulated set of questions, allowed the discussion to flow freely during interviews. It helped the interviewees to relax and take distance to their daily work. Selected method enabled interviewer to dig deeper in the selected themes and explain more thoroughly the background of a question if interviewees were hesitating whether they understood the question correctly. Relaxed and casual atmosphere in the interviews enabled to build trust and psychological safety between interviewer and interviewee. That in turn empowered the interviewees to share their true thoughts and insights instead of giving only politically correct or socially accepted answers, which would have distorted the results. The benefit of unstructured theme interview is that it is highly individualized, contextualized, and relevant to the participant. It is likely to create insight and reveal things that the researcher could not have foreseen. (Eriksson & Kovalainen 2010, 83)

7.3.2 Observation

To enrich the understanding of the topic of this study, direct participant observations were used as a secondary method to collect data. Observation as a data collecting method consists of listening and watching people's behavior with analytical mindset that allows learning and interpretation (Ghauri et al. 2020, 111). One of the advantages of observation is that it allows the researcher to gather first-hand information in natural settings and observe how things truly happen (Paalumäki & Vähämäki 2020, 131). Observations for this study were carried out at case company's one customer service center in one country. The actual participant observation was done in casual manner sitting next to the customer service agent while they were working with their customer cases. That provided means for the researcher to gain holistic view of the actual handling of digital customer cases and all the activities connected to the customer case handling process. Observation enabled the

researcher to verify the facts and issues shared in the interviews as well as see how the described processes work in reality. The researcher was able to see if things mentioned in the interviews were the norm of customer case handling and what type of deviations there were from the standard process.

Since the researcher had previous work life experience from the field in question, a certain level of mutual understanding with the informants was reached quickly during the observation sessions. Once issues with confidentiality clauses and agreements were resolved, the informants felt safe to share their experiences of their work and show how they perform their daily tasks. Informants were having very positive attitude towards observation, and they shared their experiences and stories of customer cases very openly since they were interested in supporting the study, which aims to bring enhancements to their work. However, the researcher reminded all the informants that she was there to observe, not to answer questions, give opinions or evaluations about the work at hand. Due to poor generalizability and possible bias with the observed informants (Ghauri et al. 2020), the observation was used only as supportive data collection method. With the data collected during the observations it was possible to verify findings made in the interviews and thereby improve the accuracy of conclusions.

7.4 Data-analysis

Purpose of the data analysis is to gain insight and understand the collected data (Ghauri et al. 2020, 131). In this research data analysis started already after the first participant observation sessions were completed. Researcher made handwritten notes of the main discoveries during the observations and drafted questions of relevant topics for the interviews during the observation sessions. Based on the information gained in the observation sessions, researcher formulated the frame of the interview and decided the main themes for the discussions. However, as the interviews acted as the primary data source for this study, a special attention to the analysis of interview data was given. Notes from the observations were merely supportive material used in verifying findings made in the interview transcripts. After each interview, the discussions were transcribed into text and analysed preliminary. In the preliminary analysis the researcher evaluated if she received adequate information about the discussed topics and whether she needs to adjust

the interview framework. It was also pondered if some topics that emerged during discussion, required further investigation in the following interviews.

Especially when utilizing abductive research strategy data analysis and theory development are supporting each other. Researcher was constantly considering how the data gathered from the informants reflected the theoretical framework and if any new ideas or discoveries emerged from the data. It was like solving a puzzle and the researcher was trying to clarify what were the next pieces that would complete the picture.

Once all the interviews were conducted, the text transcriptions were imported to data analysing tool NVivo. The interviews were coded, which enabled more focused work with simplified data. From the simplified data, the researcher created themes and categories and started to identify similarities, relations, and patterns in the data. Due to abductive research strategy, findings were categorised reflecting the key constructs in the theoretical framework.

7.5 Trustworthiness of the study

Literature of qualitative research methodology does not offer unambiguous guidelines how to evaluate the scientific nature, reliability and trustworthiness of a qualitative research. There is large variety of qualitative research approaches, and the evaluation practices are numerous as well. (Tuomi & Sarajärvi 2018; Eriksson & Kovalainen 2016) Nonetheless, it is emphasised that the evaluation of research quality in qualitative research should be done continuously throughout the research process, not only at the end of the project. If the evaluation criteria is applied at the end of the study, it cannot guide the research process into direction which enables good quality. (Eriksson & Kovalainen 2016, 303) The three concepts of reliability, validity and generalizability are considered as classic criteria of good quality research. Anyhow, they stem from quantitative research and can be troublesome to apply in qualitative research, especially in a case study (Hirsjärvi et al. 2009, 232). As the data for this study is collected from one business unit in a large multinational company, the classic criterion of reliability is not applicable. The data collected from the informants is unique, tied to the time point and the interaction with the researcher is having an influence on it. It would be impossible to repeat the same study

and gain the same results since people might change their mind over time and present different opinions if the interviews were conducted again.

To increase the trustworthiness of this study, the methods and choices made in the empirical part of the research are described transparently. As already mentioned, the researcher had prior experience from the business field. However, none of the people interviewed and observed had any previous or current working relationship with her. The researcher's familiarity with the business enabled understanding and trust while still giving the interviewees sense of anonymity as the interviews were conducted by a person outside their business unit. Interviewed customer service agents were keen to help in the study because they appreciated the effort to identify obstacles slowing down their daily work. Prior knowledge and experience from the same field of business allowed the researcher to formulate interview guide and questions so that they were easy to understand for the informants and relevant regarding their work. Understanding the case company's business helped the researcher to reduce the risk of possible misunderstandings. To avoid potential misunderstandings even more, interviewer asked open ended questions so that the informants had possibility to explain what they meant in their own words and use the expressions which they are familiar with. In the end of every interview, interviewer also asked whether informant had anything further to ask or if they wished to discuss or clarify any previous discussion topics.

Furthermore, data triangulation was used to improve the validity of research findings. Data triangulation means using several empirical methods to research the same phenomenon and the purpose of it is to cross-check received information. (Eriksson & Kovalainen, 2016, 306) Another reason for using the triangulation is to get different views to the phenomenon under study (Ghauri et al. 2020, 149). Data triangulation was performed by comparing data collected in interviews to the notes made during observations to verify that conclusions made out of data were accurate. In addition, findings from interviews with customer service agents working in different business units were compared to each other. The same was done to the findings made in the managers' interviews to get understanding if peers were agreeing on the discussed topic or if there were divergent views among respondents. It is notable that discussed topics and issues were not personally sensitive by nature. That is also increasing the reliability of the answers.

8 Research Findings

This section presents the findings of this study. The findings consist of the information gathered from the interviews and participant observation, which were refined and analysed by the researcher. The transcripts of each interview were entered into NVivo data analysing tool that facilitates the coding and analysis of qualitative data. During the coding, the researcher was working to discover categories, themes and patterns that emerged from the data. By organizing and labelling the data according to the key concepts of the theoretical framework, the researcher was able to bring structure to collected data and make interpretations of it. (Figure 6) Labelling and organizing helped the researcher to recognise which elements were experienced to cause most problems in the digital case handling. On the other hand, the data also revealed which processes and practices facilitated and helped the customer agents in their daily work.

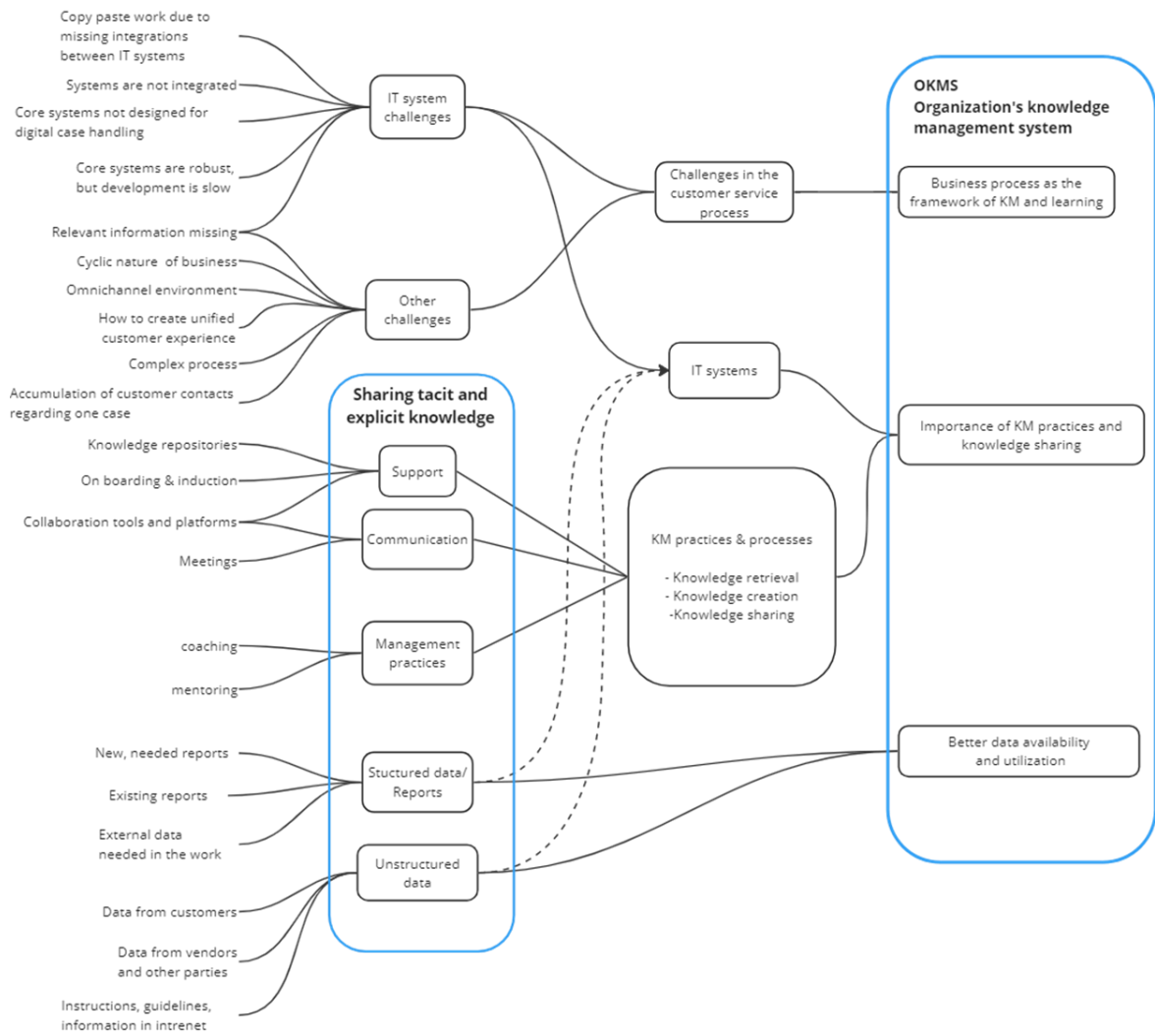


Figure 6: Themes and categories created in data analysis

The findings of this study are presented by reflecting the value creation framework presented in the section six. (Figure 5) That is done to highlight the roles of different elements in customer value creation in KIBS. Current challenges of digital customer service are analysed first. After that the findings regarding DDM’s and KM’s role in digital customer service process are presented. Some original quotes from the interviews are presented as a part of the analysis to illustrate the data findings and underline the message conveyed by the respondents.

8.1 Current service process and its challenges

In the interviews the respondents were asked to describe challenges they experience in their work while they handle digital customer cases. The challenges, brought up by the informants, can be divided into three main categories: 1) Challenges related to the service process, 2) challenges related to KM, and 3) issues concerning DDM. The issues falling into the category of KM are divided further into challenges related to technology and working practices to be able to separate issues concerning only IT systems. Because customer service agents and their management (team managers and directors) were experiencing different type of challenges in the service process, they have been analysed separately. Nonetheless, the results have been summarised by using similar matrix and same categories of challenges to enable the comparability.

The biggest challenge in the digital customer case handling, at the time of the interviews were conducted, was long response time to customers. All the respondents, no matter what role they were having in the organization, were referring in the interviews to the high number of cases in work queues. Response times were exceeding the desired target levels due to high volumes of incoming customer cases and customer service agents' workload was high in the studied business units. According to respondents, the main reason for the high workload was the time point of the year. In springtime, due to holiday season and Easter, the flow of customer cases turns into a powerful stream due to increased need of case company's services. More than one manager pointed out that the case company works in a business experiencing high demand peaks in a couple of times during the year. These demand peaks are recurring yearly. According to one informant, all the competitors in the same field of business experience same high peaks of incoming customer cases during springtime. Some interviewees also pointed out that the longer the work task queues are and the more time it takes to respond to the customer, the lower quality of customer service they feel producing:

"...the older they [customer cases] are, the more difficult it is [to contact customer]. Or actually, I don't think it's more difficult, but somehow it's embarrassing to ask the customer for more information if it's already been in our queue for two weeks." (Interview 3)

Overall, both customer service agents and managers were pondering in the interviews how to produce better value to customers. It became apparent that if customers utilize

omnichannel approach and contact the case company via phone and digital channels, they might speed up their own case handling. However, it is slowing down the overall process of digital customer case handling since the phone calls are prioritised over digital case handling.

8.1.1 Challenges experienced by customer service agents

The first thing the customer service agents usually mentioned, when asking about challenges in digital customer case handling, were problems with IT systems. The challenges came up in many forms: For example, missing integration between systems causing recurring manual copy and paste -work. Automatic replies (like out of office messages) creating unnecessary tasks to the work queue were also mentioned many times. Certain systems were brought up by name because they suffer from slowness, errors or occasional down times in operation. It became also clear that working with a large variety of systems demands a special skillset to grasp all functionalities, details or even purpose of the systems. That is causing the induction time for new employees to be long.

The second challenge that came up frequently in the interviews with customer service agents was the difficulty to find relevant information. Interviewees were well aware of the knowledge repositories available, and they acknowledged to use them very often. However, the information search was said to be arduous. Interviewees referred it to be challenging to find the correct and on to the point information for the case at hand.

“Well, it's been said that the intra[net] is somehow difficult... If you're looking for something, you have to search for it with certain keywords, which are included in that title [of the correct document] somehow.” (Interview 3)

To be successful in the information search and to find the right information, agent needs to know the specific title of the document or right key words in the headline to discover correct information. To tackle these issues agents have started to build their own knowledge repositories with sticky notes or more advanced IT tools.

“We use our time to look for the right kind of instructions from the depths of internet and it has led to the fact that people want to make their own work easier. They have started to build their own systems. Some have yellow sticky notes. Quite a lot of people use some

tool, Notebook or something, where they build the main instructions because it's more efficient to look for them [the correct information] there.” (Interview 7)

Lacking crucial information regarding the customer case, was mentioned as the third major challenge in the digital case handling. Usually, customers just leave some important piece of information out when they file the case on digital platform and that becomes a showstopper. In the simpler cases, customer is contacted via phone to get the missing information so that the case can be solved as quickly as possible. In the more complexed cases, additional information and details might be needed to inquire from customer several times to be able to resolve the case. In these situations, customer is approached with information inquiry via digital channels. Once the customer replies, the case ends up in the work task queue where it can be picked up by a different agent than who initially started to work with the case. If the case is many faceted, it can bounce back and forth between the customer and the customer service several times. In the worst case, several agents have handled the case, used time to understand what it is all about and made information searches to understand the situation before the case is solved. The general problem pointed out by the customer service agents was the uniqueness of each customer cases. Even when there are terms of the service and written guidelines available how to handle different kind of cases, each customer case requires human interpretation of the situation and decision making.

“It is difficult if there is a complex case and then you have to find out what has happened, who has done and what. And what has been done previously, has it [the case] been stucked...? Why is that case coming to me next?” (Interview 1)

Handling the most complexed cases were found generally challenging, but especially difficult when they have been bouncing from one customer service agent to another. Some respondents raised their concern of the quality of the case handling in these cases because it has taken so long, and customer might have already approached customer service several times via different channels. Summary of the challenges experienced by customer service agents are presented in the Table 3.

Table 3: Summary of challenges in customer case handling experienced by customer service agents

	Business process	Knowledge management		Data
		IT systems	Practices	
Agents	Customers contact via different channels about the same case and increase workload	IT systems are not integrated causing manual work	Difficulties of finding the relevant information	Missing crucial data in case handling
	Regulatory stiffness of the process	Old systems and system errors	Work contains a lot of tacit knowledge by its nature	
	Adequate information needed from customer to solve the case	Multiple IT systems to work with	Language barriers (no common language with the customer)	
	Questions on the web form are too general. Needed information is not received.	Automatic replies create tasks to queue	Some cases are more complexed and specific information is needed	
	Complexed customer cases bounce from agent to another			

To summarise, the challenges experienced by the frontline customer service agents were mainly related to the way the business process is organised, IT systems or KM practices. Challenges that can be categorised under DDM were related to missing data or problems with data supply from customers. When asked whether there was any lack of structured data or report regarding their work, nobody recognised any needs. As one of the informants articulated, why he does not need any reports of the process flow:

“Once I have finished the task I’m working with, there will be a new one. They will never end. There will be always a new case waiting” (Interview 3)

Customer service agents felt that data concerning how the customer service process flows is more of a tool for managers. Agents felt no need to receive more that kind of data.

8.1.2 Challenges experienced by management

When analysing the data collected from team managers and directors, the description of challenges in the service process was more versatile. Depending on whether the informant was a direct supervisor to the customer service agents or member of higher level of management, different aspects were emphasized. The summary of challenges in managing digital customer case handling is comprised in Table 4.

One of the things mentioned by all managerial respondents was the cyclic nature of the business. The amount of work flowing in is never steady, but it fluctuates depending on the time of the year. There are certain known peak periods, when the number of customer contacts increases, but sometimes unpredicted external factors like weather conditions can impact the flow of incoming customer contacts. As one team manager pointed out, even if they try to prepare for certain peak seasons by ensuring adequate resourcing in customer service, the intake of digital customer cases is growing all the time so much that it is impossible to avoid the increasing resolution time for customer cases.

“Maybe it's the fact that when the work situation is bad, then it is so hard to make it better. [...] I'm sure there's no magic tricks for it. It's so hard. Same situation occurs year after year. We think every spring after Easter, when we are in a hurry, what should we do now [to improve the situation].” (Interview 5)

When discussing with managers it became evident that there is no one big pain point which could be fixed producing immediate improvement on the workload and resolution times. It was recognised by all the managerial informants that the digital customer service process is very complexed. It was referred how hard it is to grasp the intricacy of the different cases, case types, regulations and norms related to case handling. Even if a manager spends some time by job shadowing and sitting next to agents, he still is not able to discover all the different sides of the multifaceted work. Sometimes the complex cases occur several times in a week and sometimes they appear once a year.

“It's really hard to get an understanding of that practical work, and because of that it's really hard to create the best possible ways to work and to find them... to find the problem areas and what could be done more sensible.” (Interview 7)

The unpredictable nature of the customer cases is also making it hard to create general guidance to cases and processing tasks. According to one manager, sometimes the big picture of the case handling process is lost when process development concentrates on details, like should they contact customer via email or phone first. It was said to be hard to provide general guidelines since the circumstances in every case usually determine what is the smartest way to handle it. In addition, customers are more often utilizing several channels to handle their case, which makes it even more challenging to give any general rules how to solve the customer cases in an efficient way. One solution fits most situations – type of a guidebook to omnichannel customer case handling is impossible to create.

It became apparent in the interviews with managers that challenges with current IT core systems are widely known and recognised. Thus, it was acknowledged that there is no quick remedy for it. The core systems have been built a while ago when the customer service took place mainly face to face in branch offices or via phone. These IT systems simply do not support the digital customer case handling in the best possible way. It appears as lacking integrations between systems, slowness and additional manual work for the customer service agents. The frontend systems for customers in web (mainly organization's own web service or web pages) are under continuous development and up to date. However, the backend core systems are so much more complicated that the pace of system development is slower than customer frontend and increasing speed of digitalisation is growing the gap even more. Some managers were pleased with the level of automated process handling which has been in focus of IT system development in the past years. However, the good level of automatization has not reached all business units evenly and there is still a long backlog of processes waiting to be automated.

Table 4: Summary of challenges in customer case handling experienced by managers

	Business process	Knowledge management		Data
		IT systems	Practices	
Management	General complexity of the process	IT system architecture is complicated and multilayered.	How to coach knowledge workers in their work	First call resolution time not available
	Cyclic nature of the business	IT systems are not supporting digital customer case handling in optimal way	How to manage omnichannel customer service environment	Online data of the workflow and predictive analytics not in team managers use
	Big picture of the process is lost and tiny details gain greater importance than needed.	Process automation missing on some business areas	How create best practices when customer cases are unique	
	How to provide unified customer experience in omnichannel environment		Work contains a lot of tacit information. Very long induction time to build up the network & gain understanding of the totality	
	Intelligence how to contact the customer		Hearing and understanding the silent signals of customer behavior	

To summarise, the challenges managers were experiencing were diverse. The issues how to guide, advice, create best practices or coach customer service agents came up in the interviews in many ways. Flaws in IT systems were seen as a factor of slowing down digital claims handling, but it was not as a direct obstacle for it. In some interviews it came up that the level of digitalisation is very high and the IT systems are more modern in the case company than in most of the competitor companies. The state of IT system architecture and the cyclic nature of the business were merely accepted as essential parts of business environment that will not change in the near future.

It's like the whole [IT] system is so complicated... Really... Really big changes should be made to make it as modern as possible. And that means it is impossible, because no such system change is happening. (Interview 7)

If we have a thirty-year-old core system [...] It's a bit like unfair.. You know, to ask why it is not integrated to other systems or what is hindering us to use API's... or create data base for master data. [researchers note: API stands for Application Programming Interface] (Interview 8)

The managerial respondents did not raise any major concerns regarding available data or reports. Access to data was considered generally very good.

8.2 Data as a tool in service process management

When discussing about the findings of this study, it is good to keep in mind all the types and forms of data. Commonly people tend to refer only to historical reports, numerical and structured data. However, especially in knowledge intensive business, also unstructured data originating from variable data entries (like information given by customers, pictures or videos sent by business partners) need to be taken into consideration. Overall, the amount of data surrounding the customer service process is enormous and very versatile by nature.

In the interviews, DDM was approached from two different viewpoints: Did the informants experience they have relevant data available and how the data is used in the daily work. Additionally, the managers were asked how they utilize data in steering the service process and leading people. Aspiration was to discover whether there were some data, reports or information about the service process missing and causing case handling to slow down. During the interviews general discussion, how the respondents experience data driven culture in the case company was also carried out. In the beginning, discussions around the area of data utilization and DDM seemed to wrap around topics of scattered data repositories, huge amount of information and knowledge needed in the work. Topics like diversity of skills in data utilization and the ability to interpret all the information agents have access were also discussed with informants. Customer service agents emphasised challenges of retrieving right information from right repository at the right time. Nonetheless, agents seemed to be satisfied with the amount and coverage of data they have access to. As earlier mentioned, no special needs of additional internal data or structured reports regarding service content or service process flow were recognised. Only

the missing detailed information of customer cases that only customer can provide was brought up.

The interviewed managers were satisfied with the amount and quality of the data available. It became apparent that the case company has put effort on the development of management reports since only one type of report was recognised to be missing. Nevertheless, even the missing report was under development and about to be published soon. Other than that, managers were saying they have all the data they need to manage the daily operations and observe how daily operations run. Researcher notified during the observation sessions that the utilization of available data and structured reports varied very much among managers. Interviews confirmed this finding. Some managers were very interested in using the data available and develop the reporting further, while others were merely utilizing the existing reports and felt they had already all necessary information they needed to support their daily work.

“We have designated weeks for following up reports. It rotates within four colleagues, so there is that one week when I monitor them [reports] more. And then it [how often reports are checked] depends on whether I have development discussions or something else. So, either daily or then there might be a week when I don't look at them at all.” (Interview 6)

It became evident during interviews that currently the reporting is based on descriptive analytics. Key performance indicators (KPI) are used to measure daily operation processes' effectiveness and customer service agents' performance. Managerial respondents were most familiar with reports created in Business Intelligence (BI) systems, which provide historical data about operational efficiency. Those reports were told to be used in everyday management, but available online data of the operational situation was also found valuable, when it is available.

“One of the most important tools that I use in my work is the contact center solution X. I have it open daily. It shows me real time data what the customer service agents do and what is the situation with work task queues” (Interview 5)

Predictive analytics was also told to be used for forecasting human resource needs and planning work shifts for customer service business units. However, forecasting and work shift planning is outsourced to a separate Workforce Management (WFM) -unit in which WFM specialists plan and manage the work shifts and scheduling for the customer service.

The final allocation of people to different work task is done as collaboration between WFM specialists and customer service unit managers.

When discussing with managers about data utilization in more detailed, diversified viewpoints started to emerge. The respondents were speculating about the role data currently has in the organization and how it could be utilized even better. As one manager pointed out, they feel they have all the necessary tools and all the necessary data, but the interpretation of the data and observing the weak signals in the data are missing today.

“Data is like an indicator. But data, without the story, the explanation when someone can say what is behind that number, is nothing. It's pointless if no one knows how to bring that content behind the data.” (Interview 8)

The importance to see behind data and understand what might be hidden behind the reported figures, is something that can enable additional customer value creation. The informant brought up that once some major change is visible in the key process indicators, the organization is already late on that change. On that point, organization can only react to the change. As one of the informants pointed out, the latest global game changers like Covid-19 and war in Ukraine have impacted both national legislation and customer behaviour in an unpredictable way, which can be also seen on the number of incoming digital customer cases. In an ideal situation, organization is able to sense and observe weak signals of change in interaction with customers and external environment. Based on that it can adjust its processes and functions proactively to stay ahead of the change. The informant emphasised the need to understand the data, analyse it in the context of the business environment and make conclusions how it will impact the business now and in the future. Continuous interaction between management and customer service agents working in the frontline is vital in order to have finger on the pulse of the business.

“When something happens, such as external changes, which are actually happening quite quickly now... for example, changes to national legislation or the operating environment usually come in a fairly quick timeframe, and then it is difficult to predict consumer behaviour. That consumer behaviour may change really quickly.” [sic] (Interview 8)

The informant said that use of data should be a neutral thing. Preferably in the near future all employees will consider data as an indicator or signal of change, not as a means of

control and discipline. To have data available transparently and using it widely in everyday operations can accelerate the DDM to be more mundane on every level in the organization.

“I don't think that leading of any company is that simple, that it would be just a matter of adding more data into IT systems. It is the understanding of the context and insight that makes it meaningful. Only then, in that way, a vision of the future is born.” (Interview 8)

Additionally, the interviewee wanted to highlight the inclusion of customer service agents in development work and interpreting the reported data. According to her, the business units should claim stronger ownership of their own data and work together with analysts and subject matter experts to understand what is observable in the data. As a result of diverse professionals' collaboration, new combinations of different type of data can produce new insights, knowledge and competitive advantage.

8.3 Knowledge management's role in service process management

When analysing the results of this research, it is essential to understand that cases, which end up to customer service agents' work task queue are always complex. The case company utilizes automated customer case handling, which takes care of the easy and straight forward cases with no need of human interaction. Customer service agents handle only those cases that demand contextual understanding or new knowledge to be solved, which is only a part of the full stream of cases. Some of the cases are especially time consuming because of the complex or unique nature of the case. Current automatized handling system cannot make the necessary contribution to complete the cases, which demand human creativity to be solved. It became very clear already during the observations that there are no easy fixes available to speed up the process. All the low hanging fruits of automatized case handling are already picked. The challenges with the case handling are manifold and difficult to solve. That is why topics regarding KM practices in daily work were discussed widely with all informants.

8.3.1 Knowledge resources

IT systems were considered as one of the biggest factors of slowing down the digital customer case handling. Complexed architecture of different systems and missing integrations between systems are causing manual work and development of process automation was found to be uneven between business areas. Additionally, the lack of good search functionalities in the most commonly used knowledge repositories was brought up often. One of the central discoveries was that agents felt they have adequately information available but finding the right information at right time is a big problem. In general, the IT systems were not recognised to support digital customer case handling in omnichannel environment in best possible way. Knowledge processes like knowledge acquisition or retrieval slow down without proper support from the IT systems. Nonetheless, it was acknowledged to be unrealistic to wish for a quick replacement for all the core systems just to improve the capability of digital customer case handling. The magnitude of that kind of an investment is so huge that it will be done eventually in increments over the years. In this kind of a situation the importance of well-established KM practices amplifies. In the case company this became evident when discussing about daily management, practices of knowledge sharing and the effort that is put on enabling communication. Since the IT systems do not give ideal support for the knowledge processes, people management and communication compensate for that shortcoming in everyday work in the case company.

Even though IT systems were often experienced to slow down the work, contact center platform used in the case company gained recognition. Both agents and team managers were experiencing it to provide needed data and transparency to the operational situation. That in turn helps the managers to steer the daily work better. One of the interviewed customer service agents mentioned how she uses the data, provided by contact center platform, when she makes the decision on how to contact customer to ask further details for the case. Based on how long task queue there is, she decides which is the fastest way to handle the case and get it solved. This kind of system support helps the agent to provide immediate value to the customer in terms of better service. Agents were also feeling they have enough authority and mandate to serve the customers and make decisions to close the cases. That in turn shortens the case handling time when agents do not need to ask permissions from their superiors.

8.3.2 Knowledge process

Knowledge sharing and knowledge creation are key KM processes of customer case handling. All the interviewed agents were unanimous on good level of peer support in their work. Several informants were referring that pondering over a complex customer case with a peer is the first line of support they use when solving cases. The second line of support, which was mentioned often, are the experts working in the back office who have deeper and more detailed knowledge on certain areas.

“We are pretty good in taking care of each other, I think. When someone remembers something, he often makes sure that others remember the same thing.” (Interview 5)

Each team in every business unit has ongoing chat discussion (powered by the Microsoft Teams platform), which was named to be the most important source of information as well as the most important platform in knowledge exchange regarding work. It was described as the number one channel to provide new information and enable learning from colleagues.

[Information is shared] by asking a colleague or in our common chat. Often there might be someone there who knows where that information can be found or how to get there [to the source of information]. [sic] (Interview 4)

The role of own experience and gained tacit knowledge was considered as a key success factor in solving the customer cases efficiently. The more experienced agent is and the more tacit knowledge agent has gathered, the better prepared he or she is to solve complexed or multifaceted customer cases. That indicates knowledge sharing and new knowledge creation to be the key prerequisites for this kind of knowledge intensive customer service work.

It became evident that the case company has put a lot of effort to facilitate learning and knowledge transfer in everyday work by arranging regular meetings and providing different channels for people to meet and communicate.

“We have a status meetings on Tuesdays and Thursdays. They started as a corona crisis meetings [...] but then they remained. Now during this spring, we have shared experiences on successful coaching sessions among people. It [the meetings] is one forum that has been used.” (Interview 5)

The team managers referred to their own manager chats in which they exchange information with their colleagues and seek help in more complexed case. Customer service agents mentioned also different kind of experts working in the back office functions, who help them in their work if they need support for the cases they are working with. It was seen as an advantage if an agent had a longer working experience and wide networks both internally inside the case company as well as with the external business partners.

On the other hand, information exchange with customers was found troublesome at times. It was noted during the observations that one of the main reasons why some customer cases are pending is missing information either from customer or third party. The first hurdle with customer communication usually is how to establish it; what is the suitable channel to use in each case.

“Perhaps the most challenging thing is that it [the customer service request] doesn't always have all the sufficient information. So, the information is asked from customers either by calling or using the same means [same channel] the customer has approached us.” (Interview 2)

Sometimes customers are difficult to reach via phone or it takes long time to get a reply to an email. When discussing with managers about that issue, they reminded that there is no general rule of what channel to use and how the additional knowledge should be acquired, since each case is always unique. Sometimes time is wasted just by waiting the customer to pick up phone and answer the call. In some cases, customer service agents and customers are having difficulties to find common language when a customer does not speak local languages or English. Additionally, it was brought up in the discussions that the web form, which customer uses when initiating a case, is sometimes too general or unsuitable for the purpose. For certain type of cases, there are not enough or right kind of questions on the web form that would demand customer to write down more detailed description in the first place. That leads to a situation in which the customer service agent needs to contact the customer every time when receiving that type of a case and that in turn extends the handling time.

8.3.3 Knowledge management practices

It became clear in the interviews and also during observations that interaction, discussion, knowledge sharing and supporting others is in the backbone of all the people working in the studied business units.

“We share information in team meetings. We share it there face-to-face or then we share it in our Teams chat group like ‘Did you know about this? There is this X and then there is this Y. Just for your information’. Or then we if there are some news, changes or new information, we tell it to each other in a casual way at the office when we meet.”
(Interview 1)

It was mentioned several times in the interviews that support and guidance is always available either from peers, other experts or managers. It was referred as “just a matter of asking”. There seemed to be very little hierarchical boundaries between people with different roles in the studied business units. In this kind of working environment and culture new knowledge is created continuously in interaction between people. Sharing explicit and tacit knowledge is part of the daily work when people help each other and share information and their best practices. To enable knowledge sharing in wider groups, regular team meetings or shorter stand-up meetings are established. They aim to knowledge sharing from more experienced agents or back office experts to customer service agents working in the frontline - and vice versa. Meetings were also mentioned to be the places in which agents felt they could talk about their challenges regarding work tasks, development ideas or share best practices. However, the teams’ internal chat was found to be the most important place for information sharing and support. All things considering, it seemed that the organization has really invested in the KM practices emphasising the human-to-human knowledge distribution and interaction.

Nonetheless, in the interviews with managers, it was mentioned that variation on performance level between customer service agents are still big. Some agents manage to handle cases quicker and with better quality than others. The main goal for customer service is to provide more consistent and good quality service to all customers in all channels. Managers mentioned some coaching methods they were using to even out the differences. One of the methods is to put more experienced or better performing agent sit next to an agent who needs to improve on some areas. However, it was also said that

working with digital customer cases is little bit like handwriting: everybody has their own unique style, even if the model characters are the same for everybody. This figure of speech means that it is impossible to guarantee the same kind of service experience to every customer in every case, no matter how much coaching, mentoring or support is directed to customer service agents. Customer service situation is always unique human to human interaction.

8.3.4 Organization's knowledge management system in the case company

Based on the empirical findings, a summary of the case organization's OKMS was compiled into a matrix (Table 5). To reflect the comments and insights provided in the interviews regarding different OKMS components, the matrix has been colour-coded by using traffic light analogy. Components, which received most criticism are coloured red to indicate that there are strong development needs, and these elements were considered to slow down digital customer case handling. Components, which were mentioned being still under development or received contradictory comments (some informants regarded good, some regarded bad) are coloured yellow. Components marked with green colour were considered to be well established and well-functioning elements in everyday work that are used frequently, and people are generally happy with their state.

Table 5: Recognised components of OKMS in the case organization

Resources	Processes	KM practices
Adequate authorities to resolve customer cases and make decisions	Knowledge sharing with peers by using available tools	Senior to junior mentoring to share tacit knowledge, especially in induction
Contact center system that provides data in real time how cases are handled	Knowledge creation and exchange of tacit information (silent signals)	Interaction between team managers and customer service agents. Listening and discussing to hear the weak signals
Development of process automation at certain business areas	Ensuring adequate information supply from customers (web forms)	Meetings that enable knowledge sharing
IT system support for omnichannel customer service not adequate	Smart customer inquiries to ensure additional information is received efficiently	Networking inside company
Information retrieval is slow because of inadequate search functionalities	Efficient knowledge retrieval processes from repositories	Encourage to create, share and apply knowledge (meetings with specialists)
IT system architecture is complexed, integration between systems are missing and support for digital customer case handling is weak		Coaching knowledge workers in their work so that more consistent service quality can be provided in all channels to all customers
		Encouraging to develop ways of working continuously

As KM is defined to be an array of management activities enabling organization to deliver value from its knowledge resources (Andreeva & Kianto 2012), it can be seen as the glue between people, data and technology in knowledge intensive service process management. It became apparent in this study that even if the IT systems are not optimal in supporting digital customer case handling in full extent, continuously enhanced KM practices and processes enable value creation in customer service process and overcome the shortages of IT systems. The key finding of this study is that the case handling process can be enhanced by continuing to support customer service agents' work with robust KM practices that enable learning. With the help of advanced software facilitating faster information retrieval and KM practices, customer service agents can thrive in their demanding knowledge work.

9 Discussion

This study was initiated by the real life need to research how to improve digital customer case handling to become more efficient on serving customers and create more value for the customers. The conducted research aimed to provide an answer to the formulated research question: *How to enhance and streamline knowledge intensive service process with KM and DDM?* This section reflects the findings towards the theoretical framework built for this study and makes conclusions based on the research findings.

The researcher chose case study as a research method, because of its ability to present and describe complex business problems in a practical and down-to earth format (Eriksson & Kovalainen 2016, 133). To be able answer to the research questions, the researcher needed to gain good understanding of the everyday life of digital customer case handling, form a perception of the IT landscape the customers service agents were working in, and built awareness of the network of stakeholders related to digital customer case handling. Main part of the empirical data was collected in the interviews, but the conducted observations proved to be very useful in terms of highlighting certain common practices, like asking and providing peer support in the customer agents' daily work. Purpose of this study was to make discoveries and help the case company to identify factors or elements which could enable improvements in digital customer case handling.

Customer service process is one of the major instruments how an organization can bring value to a customer. As Grönroos (2008) explains, customers feel they receive value when they are better off than before after they have been served. Customer service process could be viewed from diverse viewpoints or observed through different lenses. Thus, this study was set up to understand how DDM and KM can enhance case company's customer service process, since the case company is working on a knowledge intensive business. KBV claims that sustainable competitive advantage on the long term can be achieved only by leveraging knowledge residing inside organization (Grant 1996; Prusak 1996; Bhatt 2001). Spender (1996) states that competitive advantage arises from firm-specific knowledge, which creates unique added value once it is combined with tangible resources. If an organization is successful at providing value to a customer with the resources and

capabilities it has in its possession, it can achieve sustainable competitive advantage (Barney 1991).

9.1 Challenges in the digital customer case handling process

One of the central ideas of BPM is that company's processes demand continuous adaptation due to constantly evolving environment surrounding the organization. To satisfy the needs of customers and succeed in the market, organizations need to continuously advance and adapt their core processes according to the changes in the environment. (Smart et al. 2009) During the research, it became clear that the case company was already on quite an advanced level in the utilization of technology in customer service process and handling of digital customer cases. Automated handling processes were taking care of the straightforward cases, which could be solved fast. The cases which ended up to customer service agents' task queue were either too complexed for automatized handling or they were lacking some crucial information. Those type of cases needed human creativity and understanding of the business context to be solved. The core reason why solving those customer cases was more time and resource consuming was not the complexity of the handling process, but the complexity of the cases. One of the focal findings in this study was that there was no one single reason that slows down the handling process, but the reasons for long handling time were diversified. This finding gave a strong indication that adding more software or other tangible resources into customer service process will not alone accelerate it or provide increased customer value. To enhance the efficiency of the process, attention needs to be directed to KM practices like better knowledge availability and data utilization. Especially in KIBS, facilitation of knowledge transfer is in the core of all operations (Field 2016).

To understand the issues in the digital case handling process, customer service agents and their managers were interviewed about the challenges they experienced in their work. The customer service agents were referring to difficulties with current IT systems, problems of finding the right information to solve the case, and the lack of crucial information provided by customers. Xue & Field (2008) call the same phenomenon in their paper "sticky information flow" that slows down the customer service. Time was wasted on finding the correct information and on copy and paste -type of work, because the IT systems did not

support the digital case handling in an optimal way. Managers acknowledged the problems with the IT systems too. Thus, the bigger issue in the case handling process according to managers, was the cyclic nature of the business. That caused challenges in resourcing as the number of incoming customer cases fluctuates seasonally. Managing and coaching customer service agents in their multifaceted work was recognised as another big challenge by managers. The daily work in highly specialised customer service is so versatile that it is difficult to give straight forward guidelines on how the cases should be solved. Best practices and general guidance can be shared to some extent, but to master the digital customer case handling, an agent needs to have a lot of tacit knowledge, creativity and good networking skills to succeed in it.

These research findings were strongly aligned with the study of Ritala et al. (2013) about key capabilities in knowledge intensive service: Acquiring knowledge about customers or their needs or creating new knowledge to serve customers were identified as critical and highly valuable capabilities in knowledge intensive service. Results of this study showed that versatile nature of the daily work is requiring adaptation and continuous learning to enable customer value creation. The multifaceted nature of the customer service work, that makes the work versatile and interesting to customer service agents, challenges management practices. Ritala et al. (2013) stated that process management and relationship orchestration are also key capabilities of knowledge intensive service, since the service is delivered through a process and an employee is demanded to manage interactions between customer and other stakeholders to create customer value. Similar findings were made in this study too: Employees needed to be able to handle emerging issues beside the core case while delivering the service to a customer and thriving for best possible customer experience. In addition to customer interaction, customer service agents operate in a network of diverse subject matter experts, colleagues, managers and third-party vendors. That is why employees' good communication and collaboration skills are a prerequisite when the organization is aiming to provide efficient service and good customer experience.

9.2 Better data utilization leads to improved service process

As knowledge is the key resource of the case company, this study wanted to gain understanding on how DDM could improve service process management: Would the

customer service process become more efficient if the service agents and their managers were provided more data or structured data reports? Were there problems in interpreting or utilizing currently available data? Results showed that availability of varied data types were experienced differently in the case company: Informants were happy with the level and availability of structured data like historical performance reports or KPIs of service process flow. The challenges were described to emerge regarding unstructured data. Emails or pictures from customers, guidebooks or other free text format data were experienced to be scattered in repositories with low availability. Unstructured data was described to be poorly available, or the accessibility was weak. Unstructured data was also sometimes found to be challenging to interpret. For example, written message from a customer might be difficult to understand due to language barriers or photo attached to an email could be bad in quality. As Intezari & Gressel (2017) state, organizations are used to handle structured data with fixed coded meaning and format. Data that appears unstructured like audio files or free text, which are commonly results of human actions, is much more challenging to refine and transform into more manageable data (Kiron 2013; Intezari & Gressel 2017).

Ferraris et al. (2019) assert that cross functional collaboration enables the organization to gain the greatest value from data. Once people who understand the problem, right data and people with problem solving techniques are united, organizations can exploit the full potential of their data (Ferraris et al. 2019). Findings of this research support that view. The case company has skilled people, who understand the business problem and have means and mandate to solve the problem. However, their work was slowed down by inadequate or incorrect data regarding the case. Difficulties to access the needed data were also found to be common. The full potential of available data was lost because unstructured data was not easily accessible. For the case company all this meant that a lot of working time was used to searching the correct information while customers were waiting to get their case solved. As Kiron (2013) pointed out, most organizations struggle with data that is non-numerical and varied by type because it is difficult to integrate. It usually demands some type of transformation or refining before it can be computed (Intezari & Gressel, 2017). To improve and make the service process more efficient, customer service agents need more advanced solutions to bring needed information available. This would speed up the case handling process, but also improve knowledge distribution and learning in the customer service organization. Modern AI tools like

ChatGPT could enable the customer service agent to have all the relevant internal knowledge available in an easy way. As Ritala et al. (2023) mention in their paper, the instant success of ChatGPT lies in the simple user interface that everybody can use intuitively. That kind of a tool would revolutionize the information retrieval from company repositories in terms of speed and accuracy. It would also have a positive impact on the efficiency of customer case handling and therefore customer experience. Utilizing AI could also bring additional efficiency to the service process for example by assisting customer service agents in other mundane tasks like drafting email messages to customers (Ritala et al. 2023).

Another problem, which became evident in the study was the low level of collaboration between data specialists and people working in the customer service frontline. Organizations, which strive to become data driven, need to pay attention to organizational alignment between business and IT organizations (Kiron 2013). Software can produce reports, but people with necessary business insight are needed to interpret the results, analyse what the data reveals about the business situation and observe signs of emerging trends (Gupta & George 2016). According to the results of this study, customer service agents were considering reports as tools for managers with low impact on the daily work in customer frontline. Since the existing reports are concentrating on historical data, they were merely regarded as process indicators, which help to steer the service process. Nevertheless, one of the managerial informants brought up the latest development aiming to enforce the business unit's ownership of their own data. The purpose is to make all employees to consider data as neutral thing, not as a tool maintaining discipline. It was already understood in the case company that the people with contextual understanding of frontline of customer service can bring additional insight to data analysis. People working in frontline could help to discover the weak signals of emerging trends or upcoming changes in the business environment. As the business environment is turning more volatile, continuous learning based on data is a critical success factor for an organization (Gupta & George 2016; Intezari & Gressel 2017).

9.3 Power of knowledge sharing

The goal of KM is to promote knowledge utilization in the organization (Alavi & Leidner 2001). This study gathered information on types of KM processes, practices and resources used in the case organization. The goal was to understand what role KM had in the case organization's service process. The pivotal finding of this study was the significance of knowledge sharing culture in the knowledge intensive service delivery. The case company was able to compensate the deficiencies in their IT systems by facilitating interpersonal cooperation and promoting KM culture. The case company utilized variety of well acknowledged KM practices like senior-junior mentoring, knowledge sharing platforms, networking and regular meetings as tools to share and disseminate tacit and explicit knowledge among employees. All the informants were describing their workplace as a community in which knowledge is shared in social interactions between individuals, teams and business areas. Getting more information was described as a matter of "just asking".

Some customer service agents gave quite harsh feedback on the IT systems they use daily in their work. Alavi & Leidner (2001) consider IT systems to be a significant part of KM system since they are used to manage organizational knowledge. IT systems are supposed to support individual and group level knowledge creation as well as networking (Alavi & Leidner 2001), but in this study the IT systems were said to slow down the customer service at times and to create additional work. On the other hand, some IT systems were used very efficiently on information sharing and communication. One important finding made in this study was that even if some IT systems were not ideal for the work at hand, people were creative and found ways to create new knowledge. Tacit knowledge was shared through socialisation and externalisation, and explicit knowledge was converted into more complexed sets of explicit knowledge in the process of combination (Nonaka et al. 2000). The results support the socio-technical perspective of OKMS, which places the people in the core while technology resources, organizational infrastructure, corporate culture and knowledge surrounds that core (Meso & Smith 2000). In the case organization, KM practices like regular meetings and senior-junior mentoring were ensuring that customer service agents had the possibility to share knowledge with each other and create a culture that support knowledge sharing and transfer. It created trust among people and lowered the threshold to ask and get help from colleagues. Certain technology platforms,

like Microsoft Teams, were mentioned as channels for distributing knowledge to a wider audience and enabling tacit knowledge transformation into explicit knowledge. Some informants referred to their internal chat group in Microsoft Teams as be the best source of information regarding their work.

It has been brought up frequently in the academic discussion that organizations need to have data driven culture and invest on softer skills like leadership and talent management if they wish to gain competitive advantage from data resources. (McAfee & Brynjolfsson 2012; Ferraris et al. 2019; Wamba et al. 2017) Data, or raw facts in other words, is not supporting value creation as such (Bhatt 2001). Data gains relevance and becomes valuable information when it is organised, given meaning, and contextualized (Rowley 2007). In this study, it became evident that available structured data, like existing reports and KPIs, did not have relevance regarding to the work at hand. Therefore, the data had no value to customer service agents. Customer service agents had online access to the numerical data regarding the number of tasks in the task handling queue, but very few of the respondents utilized the data as it had no impact to their work. Historical data regarding process flow, like for example how many cases were handled during a certain period of time, did not help the agents either to make better decisions or solve cases more efficiently. The agents were lacking data and information related to the content of their customer cases. To be able to make data driven decisions, customer service agents need to get access to data regarding the customer cases and interpret it before it can be utilised. Hence, raw data leaves room for diversified interpretations and misunderstandings, which effects the quality of case handling process. Due to that, it is very important to continue to invest in KM practices that enable tacit information sharing and creation of mutual understanding of the available data. When the customer service agents get opportunities to share their views regarding available data and information, they are able to form common understanding of the topic, create new knowledge and provide unified and high-quality solutions to customer cases in the future.

9.4 Information driven culture accelerates value creation

When customer service agents utilize relevant information which is interconnected to solving customer cases, their decision making can be called information driven. As stated

earlier, raw facts like figures, have no impact to the work, but contextual information is very valuable for the customer service agents. Information becomes knowledge when applied into use or shared with others. (Bhatt 2001; Rowley 2007) Instead of seeking to create a data driven culture, organization should strive towards information driven culture that enables employees to have relevant information at hand effortlessly. The problem with data driven approach is the accessibility of the data. Before data can produce any value, it needs to be found, refined and interpreted which requires time and resources. In information driven approach employees have access to relevant data across the organization and it is already provided in relevant context. Information driven culture emphasizes the need to extract the valuable information from the data, accelerate knowledge distribution and facilitate new knowledge creation.

Information driven culture is created in an interaction between KM, organization's resources and key business processes. (Figure 7) Business processes facilitate the utilization of organization's tangible and non-tangible resources. Knowledge itself is a key resource for an organization and if it is not utilised it becomes worthless (Grant, 1996; Inkinen, 2016). Thus, leveraging knowledge organization requires to have other type of resources too, like skilful people, suitable technology and corporation culture that supports the utilization of data (McAfee & Brynjolfsson 2012). KM processes and practices accelerate and orchestrate the usage of those resources. KM combines soft factors like organizational dimension, culture and strategy with more tangible resources like IT systems in value creation process. (Tian 2017) Business processes are the means to get things done in an organization and they provide a framework for KM and learning (Armistead et al. 1999). The interplay between KM processes and BPM constructs the unique way the organization creates value to its customers (Andreeva & Kianto 2012). Based on this it can be said that in an information driven culture customer value creation happens in the intersection of resources, KM and BPM.

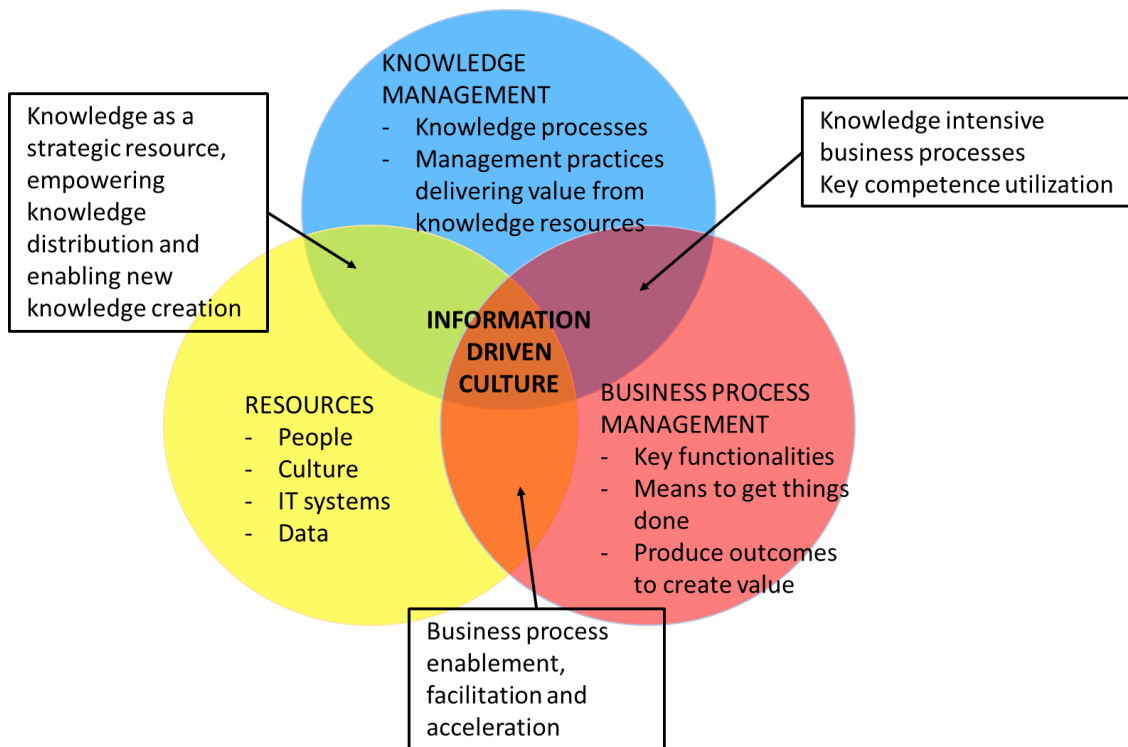


Figure 7: Elements of information driven culture

Organization needs sufficient resources, continuously developed business processes and deeply rooted KM discipline to produce KIBS. None of those elements alone is able to create superior customer value. Thus, together they create unique, information driven culture, which is imperfectly imitable strategic asset enabling sustainable competitive advantage for the company.

9.5 Conclusions

The key question of this study was to understand whether customer service process can be enhanced by steering it with more data and what is the role of human interaction in the process. The central finding was that to make digital customer case handling more efficient, customer service agents need to get improved access to the relevant data. Generating or acquiring more data in order to the steer the process better was not found to be relevant. In addition, adding more raw data (like news feed) to the process without

connection to customer cases, or fine tuning the current business process flow were found to be less efficient ways to improve digital customer case handling. Customer service work in the case company, performed by the customer service agents, is highly dependent on knowledge exchange and agents' own skillsets and capabilities. By providing better access to relevant information and supporting customer service agents' work of handling unstructured data, would speed up the process and shorten the case handling times. The organisation should continue developing and maintaining KM processes and practices like for example mentoring, which supports knowledge sharing and learning among the customer service agents. Continuous learning is a prerequisite for faster case solving and boosting the level of first contact resolutions. In other words, the organization should proceed from aiming to have data driven process and pursue to implement information driven culture in customer case handling.

Maintaining good KM processes and applying KM practices in everyday work, were found to be having the biggest impact on enhancing the customer case handling in the case company's current business process landscape. Continuous learning, efficient knowledge distribution and sharing of tacit knowledge were found to be the key factors enabling great performance in digital customer case handling. The more knowledgeable the service agents were, the better service they were able to provide to the customers. Technological solutions like ChatGPT, providing easy access to unstructured data, would most probably benefit the customer case handlers work and speed up the customer service. If the organization decides to utilize AI based tools, they can also gain additional benefits in the form of assistance in the most mundane and simple tasks like email writing. These new extends of technological aid would take the service efficiency into a next level with high probability. However, the focal requirement is that the tools supporting information retrieval are secure, efficient, easy to use and have access to organization's data bases. Especially the requirements concerning data security and compliancy in the highly regulated financial business are massive, which might slow down the implementation of the new AI based tools.

The results gave a clear indication that customer service agents are able to minimize the loss of time and resources in the service process and provide better customer service if they are empowered by correct information. Based on the results, it can be stated that people, who have the contextual understanding of the business problem, combined with easy

access to relevant information and mandate to make decisions are a strategic asset to the company. They cannot be replaced or copied with ease. By equipping these people with right tools and supporting their work with suitable KM practices, organization can provide great service to its customers and create customer value in knowledge intensive service business.

This study contributed to the academic discussion by broadening understanding of the interplay between BPM, KM and DDM in the field of KIBS. It underlined the importance of managerial and cultural support for learning and knowledge sharing in an organization that seeks to be competitive in KIBS. Organizational culture that favors learning and knowledge sharing can help to overcome the impediments caused by less optimal technology solutions. Based on the results, this study presented a concept of information driven culture which is born in the intersection of KM, resources and BPM. Information driven culture emphasizes the importance of easy access to organization's information resources. When knowledge workers have relevant information in the right context available, it accelerates business processes, enables better usage of resources, and facilitates greater customer value creation.

9.6 Managerial implications

Although this research was conducted as a single case study, the findings can work as a benchmark for other companies working in the field of KIBS. The central finding of this study was that the case company's service process will not be enhanced by collecting and analysing more historical data of the process or adding more KPIs.

The customer service process was found to be clear and well-functioning. However, as it was mentioned in the introduction section, each digital customer case that requires human interaction is unique. The reasons, why the case cannot be handled by robots or automated systems, vary on a large range. Current reports, regarding customer service process flow, presented handling time data but did not reveal what were the reasons for fast or slow case handling. After delving into the customer service agents' daily work, it became clear that the problem was not the lack of data regarding the process. On the contrary, the overwhelming amount of data, especially unstructured data like photos, written notes or customer emails were causing the slowness in the case handling. Customer service agents

were struggling to find the relevant information from internal and external repositories or waiting the customer to send them additional information to solve the case.

Purpose of the service process is to create value to customers. A customer perceives getting value if he is better off after the service interaction than what he was before. (Grönroos 2008) Companies that are unable to deliver value to customers are at risk of losing their customers, revenue and finally their market position. In KIBS this requirement challenges the customer service agents as they are primarily considered to be the ultimate subject matter experts by customers. Customers demand to have a solution, preferably immediately once they have contacted the service provider. Customers are never objective when judging good and bad service: They are comparing all service experiences with the latest good service experience they have had. In practice it means that customer can for example compare experiences from online food delivery with experiences in applying housing loan in a web service. In a customer's mind, it does not play any role that these two differ from each other in terms of knowledge intensity and complexity of the service. This means that creating customer value in KIBS, and especially in digital service, is very challenging. If the customer service agent does not have the needed information available to solve the customer case efficiently, it has immediate impact on the experienced level of service. Customer expectation is to have their case solved with first contact.

The low hanging fruits of automating customer case handling are already picked in the case company. In the study it became clear that tasks ending up to customer agents task queue cannot be delegated to robots or automated system handling. The cases require contextual understanding and human creativity to be solved. Agents need to find relevant information regarding the case, decide how to solve it and give response to the customer. In addition to being a subject matter expert and understanding the service products, customer service agent needs to have a set of other skills too, like for example customer relationship management capability, skills to orchestrate case handling in a network of stakeholders and capability to show empathy in interaction with customers. Performing in this type of highly specialised customer service requires the agent to have a lot of tacit knowledge. This means that onboarding new employees and getting additional resources into customer case handling is time consuming. There is a lot of explicit and tacit knowledge inside the organization that new customer service agent needs to comprehend before he or she can start to solve the cases by himself/herself. It takes time to learn new

things, to build trust with colleagues, to form a network of peers and understand from whom to ask when problems emerge. It is crucially important to create information driven culture that consists of open communication, continuous learning and information driven decision making. It prevents uneven knowledge dissemination and silo building between teams, while enabling easier onboarding for new employees, innovating, transparency in decision making and equality among employees. When employees feel comfortable to ask questions from their peers or to seek advice from larger network it fosters learning and new knowledge creation in the organization, which yields as more efficient and better customer service.

This study identified some shortcomings in the case company regarding tangible resources, especially IT systems. Nonetheless, efficient BPM and comprehensive KM were able to compensate the deficiencies and secure customer value creation. Especially soft skills like leadership, talent management and employee coaching were found to be empowering learning, knowledge sharing and creating information driven culture. If the case organization is able to support the information retrieval with suitable KM practices and modern technological solutions in the future, it will enhance the process further and eliminate time wasted in the information search.

This study gave a clear indication that the case organization should invest in technological solutions supporting information retrieval and knowledge dissemination but on the other hand also maintain KM processes and practices that enable fostering information driven culture in the organization. To empower customer service agents, organization needs to pay attention to soft factors like organizational culture, management practices and goal setting so that they are aligned with the primary goal of creating value to customers. As culture is created by people through shared values, behaviours and customs, it cannot be copied by competitors. Fostering an information driven culture the organization is building a unique combination of resources and capabilities that facilitates creation of competitive advantage.

As this research is based only on limited amount of collected qualitative data, it is challenging to make thorough, solid and comprehensive managerial implications. To build a more comprehensive study on enhancing case company's customer service process, larger sampling and further analysis of the findings would be needed. Especially the possibilities of generative AI to speed up the knowledge retrieval process would be interesting to

analyse further. As the enterprise solutions utilizing AI are becoming more common, there is high urgency to experiment its possibilities if the case company wishes to build competitive advantage with it.

9.7 Study limitations and suggestions for future research

As this research is performed as a single case study inside one company and that is why it has limitations regarding generalizability. Even if the research was conducted in two different business units, it would be interesting to widen up the sample and collect data from other customer service units in other business areas. The generalizability would improve further if there were data collected from different case companies or even from different field of business like for example IT service support. Overall, this study leaves room for further research on the influence of information driven culture among highly specialised knowledge workers. It would be interesting to understand what type of KM practices are appreciated and valued among customer service agents and whether something is considered to be outdated or less useful considering daily work. It would be also interesting to measure if KM activities like the coaching have real impact on resolution times and the value customers perceive to receive.

It was mentioned in the section 8.2. that case company has taken an initiative to involve customer service agents more into interpretation of data and observing the weak signals it might carry. Due to the nature of master thesis, it was not possible to conduct a longitudinal study and observe over time how it will impact the work of customer service agents and if it will accelerate customer service process somehow. Hence, the topic of “Business need to take ownership of their own data” seemed to be very topical and it would be interesting to study what benefits are gained as collaboration of subject matter experts and data analysts is encouraged further.

This study has concentrated on finding improvements on digital case handling in customer service function. Therefore, it does not discuss resourcing issues regarding employees. Finding the root cause for missing customer information or case information in the initiated customer cases was also limited out from this study. Thus, based on the observations and findings made in this study, it would be beneficial continuum to prepare an analysis of what type of data is most often missing and how the digital customer case

form could be enhanced to improve the intake of the data. That would probably help the case company to increase the number of customer cases with first time resolution.

Especially interesting area of further study is the generative AI and its utilization in customer service work. Chatbots and virtual assistants start to be familiar tools for customers, but how solutions empowered by AI help customer service agents in their work, is a less studied area. As Ritala et al. (2023) state, nobody knows how generative and conversational AI tools will impact on knowledge work: In what type of work it will overperform humans, where it can be utilized as an assistant and what tasks will remain completely in human mastery? Thus, it is already acknowledged that AI tools accommodate possibilities which can enable knowledge workers to provide greater value to customers more efficiently. The remaining question is, who manages to create the most innovative way to utilize it best and gain the biggest competitive advantage?

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Appendix 1: Interview frame to customer service agents

Teemahaastattelun runko vahinkokäsittelijöille

Haastattelun aloitus

- Tutkimuksen tarkoitus ja tutkijan esittely
- Haastateltavan esittely, tehtävä ja tausta yrityksessä

Vahinkokäsittelyprosessi ja sen haasteet

- Omat työtehtävät: mikä sähköisten vahinkojen käsittelyssä on helppoa, mikä vaikeaa?
- Mitkä asiat mielestäsi hidastavat sähköisten vahinkojen käsittelyä ja syövät siltä aikaa?
- Osaatko antaa jonkin esimerkin, millaisissa tilanteissa yhdestä sisään tulevasta tehtävästä tulee useampia tehtäviä?
 - o Kuinka kaikki tehtävät saadaan varmasti suljettua ja hoidettua loppuun?
 - o Kuka vastaa siitä?
- Nostatko tehtäviä ns. omaan työjonoon, jolloin ne eivät ole muiden saatavilla? jos kyllä, niin millaisissa tapauksissa?
 - o Onko omassa työjonossasi paljon tehtäviä?
 - o Koetko että töiden pitäminen ns. yleisessä työjonossa nopeuttaa vai hidastaa vahinkojen käsittelyprosessia?
- Osaatko mainita joitain sellaisia tehtäviä, jotka tulevat nyt työjonoon turhaan, jotka voit sulkea saman tien?
- Osaatko nimetä joitain sellaisia tehtäviä, jotka mielestäsi voitaisiin automatisoida?
- Kuinka paljon pystytte tiiminä vaikuttamaan sähköisten vahinkojen käsittelyprosessiin?
 - o Onko teidän mahdollista osallistua sen kehitykseen?

Tietojohtaminen

- Mitkä työvälineet/järjestelmät ovat sinulle tärkeimpiä päivittäisessä työssä kun käsittelet digitaalisia vahinkoja?
- Onko käytössäsi jotain tietokantaa tai tietopankkia, jota hyödynnät usein?
- Mistä etsit tukea kun kohdallesi osuu hankala tapaus, jonka käsittelyä et osaa yksin edistää?
- Osaatko arvioida, kuinka paljon työajastasi kuluu tiedon etsimiseen?
- Miten mielestäsi työyhteisössä edistetään osaamisen ja tiedon jakamista?
- Osaatko arvioida, kuinka moni sähköinen tehtävä vaatii soiton asiakkaalle? Voitko kuvailla jonkun esimerkin?
 - o Jos sinun pitää ottaa yhteyttä asiakkaaseen, soitatko vai lähetätkö mieluummin sähköpostia?
 - o Kuinka varmistat, että asiakas ymmärtää mitä kysyt? (Ymmärryksen esteet, kielivaikeudet ym)
- Onko sinulla mielestäsi riittävät valtuudet työsi tekemiseen?
 - o Osaatko perustella vastaustasi miksi?

Datalla johtaminen

- Seuraatko päivittäin jotain raportteja, joissa näkyy esim. käsittelemättömien töiden määrä?
- Kaipaisitko työsi tueksi jonkinlaista raporttia tai seurantaä käsittelyprosessin etenemisestä?
- Tunnistatko jotain sellaista tietoa, jonka seuraamisesta olisi hyötyä työssäsi (uutiset, some, tilastot, mitä tahansa.)
- Millaiset asiat työssäsi ovat mielestäsi ns. hiljaista tietoa, joita ei voi koota esim. tietokantaan tai ohjeeksi?

Viimeinen kysymys: Millaista on mielestäsi asiakkaan näkökulmasta laadukas sähköisten vahinkojen käsittely?

Appendix 2: Interview frame to team managers and directors

Teemahaastattelun runko esimiehille ja johtajille

Haastattelun aloitus

- Tutkimuksen tarkoitus ja tutkijan esittely
- Haastateltavan esittely, tehtävä ja tausta yrityksessä

Vahinkokäsittelyprosessi ja sen haasteet

- Oman työn arviointi: mikä vahinkokäsittelyn päivittäisessä johtamisessa on helppoa, mikä erityisen vaikeaa?
- Mikä on mielestäsi tällä hetkellä suurin haaste sähköisten vahinkojen käsittelyssä?
- Mitkä ovat sinulle tärkeimmät työkalut sähköisen vahinkoprosessin johtamisessa?
- Mitkä asiat mielestäsi hidastavat sähköisten vahinkojen käsittelyä ja aiheuttavat käsittelyn ruuhkautumista?
 - o Osaatko antaa esimerkin?
 - o Mitä asialle pitäisi mielestäsi tehdä?
- Kuinka paljon pystyt vaikuttamaan sähköisten vahinkojen käsittelyprosessin kehittämiseen?

Tietojohtaminen

- Mitkä työvälineet/järjestelmät ovat sinulle tärkeimpiä päivittäisessä työssä kun johdat vahinkokäsittelyä?
 - o Entä mitä käytät harvoin?
- Puuttuuko vahinkojen käsittelystä mielestäsi joku oleellinen työväline tai onko joku työväline huono/vanhanaikainen/epäsopiva?
- Millaisia taitoja ja osaamista tarvitset työssäsi eniten? Miksi?
- Osaatko arvioida, kuinka paljon työajastasi kuluu tiedon etsimiseen?
- Jaatteko toisten esimiesten kanssa parhaita käytäntöjä tai teettekö muulla tavoin läheistä yhteistyötä?
- Miten mielestäsi työyhteisössä edistetään osaamisen ja tiedon jakamista?
 - o Miten sinä esimiehenä kannustat tiedon ja osaamisen jakamiseen?
 - o Miten huolehditte että uudet tulijat perehdytetään tehtäviinsä riittävästi?

Datalla johtaminen

- Seuraatko päivittäin jotain raportteja, joissa näkyy esim. käsittelemättömien töiden määrä?
- Kaipaisitko työsi tueksi lisää tietoa tai raportteja käsittelyprosessin etenemisestä?
- Pystytkö ennustamaan tai ennakoimaan tulevaa työkuormaa jotenkin? Jos kyllä niin miten?
- Tunnistatko jotain sellaista tietoa, jonka seuraamisesta olisi hyötyä työssäsi (uutiset, some, yhteistyökumppaneiden tiedotus, tilastot, mitä tahansa.) Kuinka hyödynnät sitä tällä hetkellä?

- Millaiset asiat työssäsi ovat mielestäsi ns. hiljaista tietoa, joita ei voi koota esim. tietokantaan tai ohjeksi?
- Osaatko nimetä joitain sellaisia tehtäviä, jotka mielestäsi voitaisiin vielä automatisoida?
- Jos prosessissa havaitaan joku automatisoitava asia tai datalla johdettava asia, onko organisaatiossa selkeät toimintatavat kuinka kehitysehdotusta lähdetään viemään eteenpäin.
 - o Keneen otat yhteyttä, jos kehitysidea syntyy?

Viimeinen kysymys: Millaista on mielestäsi asiakkaan näkökulmasta laadukas sähköisten vahinkojen käsittely?