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Digitalization & Competence Management

A study of digitalization and competence management within the telecommunications industry

Master of Science Thesis in the Quality and Operations Management Programme

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Abstract

The interest concerning digitalization has grown with increasing speed in recent years, and although the concept is rather ambiguous it has been stated that it will change the entire business landscape for companies. Hence, to stay competitive it is important for an organization to create the prerequisites needed to operate and compete. This changing environment due to digitalization will require organizations to re-think what types of competence is necessary within the organization, but also how competence is managed.

Alpha Service Delivery is a functional area within the company Alpha which operates in the telecommunications industry. Within Alpha Service Delivery, competence management serves a twofold purpose, first to identify, structure, and develop competences of the workforce, but also to support the allocation of resources for customer projects. Hence, competence management is essential for the execution of Alpha Service Delivery's value proposition. However, the telecommunications industry has recently experienced a transformation that in many ways is caused by the current digital development. This has created a situation where Alpha and other companies in the same industry needs to alter their operations and organization to drive and manage digitalization. However, the area of how digitalization will affect competence need and competence management has not been explored. Hence, for Alpha and for the telecommunications industry in general it is interesting to gain insights into how digitalization will affect competence management and competence requirements, since it is a prerequisite to deliver customer value. Therefore, the purpose of this research project has been *to examine how digitalization affects the competence demands and competence management for a telecommunications company*. This purpose was fulfilled by conducting a thorough literature review, academic interviews as well as a case study with interviews. The study was performed as a qualitative study, with semi structured interviews as the main data collection method.

The research found several competence areas for telecommunications companies that will increase in importance, as well as several behavioural competences that are important to drive and manage digitalization and that needs to receive an increased focus. Regarding digitalization and its connection to competence management, it was concluded that depending on the structure of the competence management system and the overall goal with digitalization, an organization might need to change its competence management system to handle the ongoing digitalization. In this research competence management was exemplified using the case of Alpha Service Delivery and their competence management framework. For Alpha Service Delivery it becomes important to consider the level of detail on their Job Roles to gain flexibility, promote fast and continuous learning through collaborative communities, focus on future competences by monitoring trends of customers and competitors, as well as adapt their assessments to put focus on the right competences. To achieve all this, the right culture of change and collaboration is needed, both of which are important aspects to continuously develop and support.

Keywords: Competence Management, Digitalization, Competences, Competence Management Systems

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Gothenburg, January 2018

Filip Wahlund and Viktor Wåhlberg

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Nomenclature

Term	Explanation
Alpha	The company where the case of this research was conducted
CCM	Career and Competence Model
CMF	Competence management framework
CMS	Competence management system
IT	Information Technology
RM	Resource Management, a department within Alpha
SD	Service Delivery, a functional area within Alpha

1 Introduction

The following chapter aims to introduce the reader to the background as well as describe the purpose of this research. Furthermore, the purpose is broken down into three research questions, which are elaborated on. Lastly, the limitations and outline of this report are presented.

1.1 Background

The interest concerning digitalization has grown with increasing speed in recent years. Although the concept can still be stated to be rather ambiguous, it has been highlighted as a game changer for many companies both by academia and by the business sector. According to Venkatraman (2017), digitalization has just begun and is currently in an early stage, and it cannot be known exactly what the future holds in an increasingly digital economy. Although the existing uncertainty regarding the specific impact of digitalization, there exists consensus concerning the fact that digitalization will affect the entire business landscape indifferent of industry, spanning everything from re-shaping of existing business models to new competitors entering (Shimp, 2015). Therefore, to secure future growth in a digital economy it is important for an organization to create the prerequisites needed to operate and compete. This is further strengthened by Venkatraman (2017) stating that organizations will need to change and adapt to survive in a digital world.

As organizations must adapt to a digital economy to secure future prosperity, the requirements on the organization from a competence perspective will change accordingly. The changing environment due to digitalization will require organizations to re-think what types of competences are necessary within the organization, but also how competence is managed. Currently, several companies organize their competence in competence management systems (CMS), often structured around different principles and processes such as competence- profiles, models, identification, assessments etc. (Draganidis and Mentzas, 2006). A CMS can basically be stated to be one or several information systems that handle competence information for an organization including the above-mentioned processes (Hustad and Munkvold, 2005). According to Draganidis and Mentzas (2006) competence management serves the purpose to identify and specify the knowledge an employee or a company should possess to achieve a stated organizational goal.

Alpha is a company operating in the telecommunications industry with an extensive history of working with competence management. This is especially true for their service organization, providing customers with services in many different fields. Within this service organization competence management serves a twofold purpose, first to identify, structure, and develop competences of the workforce, but also to support the allocation of resources for current and future customer projects. Hence, competence management is essential for the delivery of customer value. However, the telecommunications industry has recently experienced a transformation triggered by the current digital development, as well as changes in customer behaviour – requiring an increased focus on development of services and solutions instead of systems and products (Kööhler and Söderqvist, 2016). This has created a situation where Alpha has taken several initiatives towards

becoming a service and solutions provider, but also endeavours to drive and manage digitalization internally - something which several actors on the market are also doing. However, the area of how digitalization will affect competence needs and competence handling has not been that extensively explored. Hence, for Alpha and for the telecommunications industry in general it is interesting to gain insights into how digitalization will affect competence management and competence requirements, since it is a prerequisite to deliver customer value and compete in a digital economy.

1.2 Purpose

Based on the above presented situation and context, both Alpha as well as the telecommunications industry has an interest to gain increased insights within the area of digitalization and its connection to competence management. Hence, the purpose of this master's thesis is to examine *how digitalization affects the competence demands and competence management for a telecommunications company.* This purpose will be fulfilled by investigating what digitalization implies for and how it affects Alpha, and examine what requirements this new digital environment will put on Alpha Service Delivery's competence management.

1.3 Problem Analysis and Research Questions

From the above presented background, it is evident that digitalization will affect a company's operations and business landscape, regardless of industry. Due to this, digitalization as a new paradigm implies new exciting opportunities and that a company needs to work with new business areas and build competence within these areas, hence increased competence demands. Therefore, as the first research question, it is interesting to investigate:

- *RQ1 – What competence areas will become important to work with considering digitalization?*

Furthermore, to drive and manage digitalization and operate with success in a digital economy an increased importance of certain behaviours within individuals will become necessary. Because of this, a second research question becomes:

- *RQ2 – What behavioural competence amongst individuals will become important considering digitalization?*

Apart from companies needing to equip themselves with competence to succeed with digitalization and operating in the digital age, it is also interesting to investigate how competence should be managed, organized, and developed. This is done, as described above, with practices of competence management in telecommunications companies. As digitalization might set new requirements on many organizational functions it is interesting to investigate how digitalization affects competence management but also if so and how competence management should operate to support telecommunications companies with digitalization. Thus, a third and final research questions is formulated as:

- *RQ3 – In what way will digitalization affect competence management?*

The above question is broadly formulated and the answer may differ between different industries. In this research a case study of a company forms the answer to the questions. The chosen case is a company within the telecommunications industry since this industry is particularly interesting considering digitalization, following the argumentation presented in Chapter 1.1.

1.4 Delimitations

Certain limitations are needed in this study to obtain a clear focus. One initial limitation is that this research does not cover the specific actions that Alpha Service Delivery (called henceforth Alpha SD) need to undertake to adapt its CMS to meet the requirements in a digital economy. Hence, this report rather outlines the new requirements that are put on competence management within Alpha due to digitalization. Since the thesis examines a connection previously unexplored within all industries, and digitalization as a topic is rather unresearched, the aim is to provide a high-level impact analysis, not focusing on exact details for improvement within the competence management in Alpha. Furthermore, the thesis will focus on investigating the implications on the CMS of the service organization within Alpha, named Alpha Service Delivery (Alpha SD). Accordingly, the findings may not be generalizable to the entire organization of Alpha, since the competence management framework examined is defined and utilized solely by the service organization.

1.5 Report Outline

Initially in this report, a literature review is presented which includes an examination of literature within the fields of: *competence*, *competence management*, and *digitalization.* Following the literature review is a presentation of the research strategy, design, methods, and process that has been utilized to conduct the research.

Next, a description of Alpha SD is presented that introduces the reader to the company and their CMS. After that, findings from the academic interviews are presented which is followed by a discussion where findings from Alpha employee interviews are synthesized with literature and academic interviews. Finally, a concluding discussion that highlights the most important findings from the synthesis are presented. Based on the research and the limitations, the last part in this report present some thoughts on further research ideas that can be developed into new research.

2 Literature Review

This chapter aims to introduce the reader to relevant literature on the topics of: competence, competence management, and digitalization. Common definitions of these subjects and terms are presented and discussed, especially focusing on the term digitalization and its connections to similar terminology.

2.1 Competence

The definition of competence has been widely discussed and it continues to be an ambiguous term within the academic world. The use of the term goes back several centuries and Draganidis and Mentzas (2006) discussed that even the early romans used a sort of competence profiling to control their legionaries. Within the corporate world, the usage of competence-based approaches to organize people was introduced during the 1970, and since then the development has accelerated, leading to a variety of different definitions (Ibid.).

According to Mulder (2001), the definitions of competence by different authors can be classified into four distinctive groups: *Competence as core competence, Job or task oriented competence, Competence as a capability of an employer,* and *Competence as an integral cluster of knowledge, skill, and attitudinal aspects.* Furthermore, Mulder (2001) also states that all definitions vary relatively based on several related dimensions, hence making them extremely individual even within the classifications. Therefore, achieving a universal definition and finding common ground on what could be defined as a competence is difficult. This was concluded earlier by Van Overveld and Van Goudoever (as mentioned in Mulder, 2001) when discussing that there is no clear definition of neither competence nor competence management. This was also suggested by Zemke in Shippmann (2000), stating that the word competence means nothing except to the individual one is speaking to and that specific definition. Mulder (2001) concludes that it is important to discuss the relative importance of different dimensions prior to adopting a definition of competence within an organization, indicating the importance to adjust the definition to the correct situation and context.

In accordance with the above discussion, it is important to adapt to the context when selecting a definition of what a competence is. Kööhler and Söderqvist (2016) utilized the following definition of competence, which according to them were aligned with scholars within the field:" *Competence is an individual capacity. It consists of a combination of skills, knowledge, and behavioural competencies. It enables a person to perform in a relevant and meaningful way for a given purpose in each role or situation."*. Skills represent the ability to perform something specific. To utilize skills, a person requires certain knowledge (Kööhler and Söderqvist, 2016). Knowledge represents cognition or theoretical comprehension of a subject. Behavioural competence characterises inner attributes of a person to behave in different ways depending on context (Kööhler and Söderqvist, 2016).

However, as stated by Janjua et al (2012) it is hard to conceptualize and obtain a common understanding of the concept of competence, without a classification framework resulting in a proper break-down. Also, without a proper framework, building development strategies of the workforce becomes increasingly difficult. Hence, in their article, Janjua et al (2012) present five competence classes which provide a structured, yet holistic, breakdown of competence. The competence classes are: *cognitive, functional, social, generic management,* and *personal*. The competences within these classes represent abilities and skills needed within them, ranging between all above mentioned areas. However, some of the classes derived by Janjua et al's (2012) framework focuses on managerial competence, which in the case of this research makes them rather redundant since it does not align with purpose of this thesis. Hence, although the framework serves as the main foundation of competence breakdown for this thesis, not all competence classes were examined in detail. Down below the main competence classes deemed relevant to this thesis are presented.

- **Cognitive Skills** - Refer to the ability for personnel to handle problems and handle issues. The main aspect refers to employees' abilities to identify and solve problems, by coming up with innovative creative solutions. Skills included here are often comprised to: analytical thinking, creativity, and visionary thinking.
- **Functional Competences** - Refer to skills, abilities and knowledge which relates to technical aspects of carrying out a job. This type of competence is often the output from education or similar.
- **Social Skills** - Comprises a person's ability to effectively communicate, and work with people in a team structure. Also included are abilities to network with people outside the ordinary job situation, and can maintain fruitful relationships with external parties.
- **Personal Characteristics** - The competences in this class can be distinguished from other classes in the sense that these represent the core values, self-image, and motives of a person. In its essence these competences define an individual's personality. Included within this class are an individual's willingness to learn, ambition and willingness to change.

2.2 Competence Management

Managing competence within a company is often referred to as competence management, and the purpose is to identify the key knowledge an employee or company must possess to achieve a stated goal (Draganidis and Mentzas, 2006). From an organizational point of view, competence management involves planning, evaluation, and implementation of initiatives to ensure competence of employees and the company to reach organizational objectives (Nordhaug, cited in Hustad and Munkvold 2005). According to Davenport and Prusak (cited in Hustad and Munkvold, 2005), managing competence have become increasingly important for companies that wants to stay innovative, and sustain a competitive advantage. Furthermore, Borghoff and Pareschi (cited in Hustad and Munkvold, 2005) suggests that the increase in globalization that has been observed in recent years implies more fierce competition on increasingly dynamic markets. However,

globalization also enables increased exploitation of competence within a global company's workforce. This implies increased collaboration opportunities as well as higher competence utilization rate within the organization (Borghoff and Pareschi, as cited in Hustad and Munkvold, 2005).

Furthermore, applied to an individual, the aim of competence management is to diagnose the current competence and proficiency levels on employees and from there increase the competence within an individual (Draganidis and Mentzas, 2006). This is often done with a skill-gap analysis which defines the gap between competence of the employee and the competence required by the organization to perform according to their Job Role. Job Roles are often a central component in competence management and they describe what job an individual within an organization should carry out (Lawler and Ledford, 1992). What often motivates individuals to develop competence is according to Lindgren et al (2003) individuals' own interests and that this aspect is something that it is important to recognize from a competence management view.

Hustad and Munkvold (2005) state that competence management is generally handled through a competence management system, which commonly is facilitated through an information technology (IT) system. In many cases these systems involve functions spanning from distribution of information to automation of basic competence processes. This also enables self-service options for employees and potential recruits, e.g. assessments and maintaining CVs (Hustad and Munkvold, 2005). Building and utilizing flexible IT systems could extend the capabilities of competence management beyond the traditional storage and retrieval of information (Alavi and Leidner, 2001). Several authors have in their papers discussed different principles behind competence management systems (Lindgren et al, 2004; Simon, 2010; Draganidis and Mentzas, 2006). There exist several different competence management systems on the market (Draganidis and Mentzas, 2006), hence the exact configuration of a CMS of course depends on the organizational context where it is utilized. However, the following principles and processes stated by Draganidis and Mentzas (2006) constitute an example of what is often included in a CMS:

- **Competency identification** - What competences are necessary for successful performance.
- **Competency model** - Description of competences for a targeted job category, group, division, or other unit of analysis.
- **Competency assessment** - Comparing an individual's competence against the competency model.
- **Competency-based management** - Application of a set of competences to manage human resources so that performance contributes efficiently and effectively to organizational results.
- **Competency standard** - The essential skills and knowledge workers must have together with defined performance levels of those skills.
- **Competency profile** - Documentation of competences connected to a position/job.

Furthermore, competence management systems are of use also in other management applications such as Learning and Career development where competence gaps and thus learning opportunities can be identified (Draganidis and Mentzas 2006). Hence, even though learning is not a core component in competence management systems it is still an important area relating to competence management. This is not so strange, since knowledge after all is central for individual competence development (Van Krogh and Roos, 1995, as cited within Lindgren et al, 2004). Jansson and Andervin (2016) also supports this stating that competence is based on knowledge and environment and that companies need to have a long-term changeable competence plan as well as consciously develop the organization.

2.3 The Definition of Digitalization

In a world that is becoming increasingly connected, companies in almost every industry see possibilities to exploit new technology to maintain and create value for their customers. Digital technology has in several aspects affected the way business is conducted and it has resulted in several new opportunities. However, for executives, digital is still a rather ambiguous term that has different contextual meanings (Dörner and Edelman, 2015). Dörner and Edelman (2015) continue their report and offer an interesting view on what constitutes digital when stating that *"we believe that digital should be seen less as a thing and more a way of doing things"*. McDonald (2013) similarly emphasized this when discussing that digital should be viewed as increased information intensity and connection of physical resources. Connected to the term digital is the terminology of *digitization*, *digitalization*, and *digital transformation*. These terms have been used extensively during recent years and often they are used interchangeably amongst each other, even though they represent different aspects (Khan, 2017).

The term digitization is technically defined as the representation of signals, images and sounds generated as numbers and expressed as discrete values (Khan, 2016). It is often used to describe the conversion of something analog to digital (Gartner, 2017; Tapscott, 1996). The term digitalization on the other hand is a term referring to the actual process of change, driven by technology in industries (Khan, 2016). Hence, it could in simpler terms be defined as the process enabled by digitization, which transform companies to become increasingly digital. Finally, Khan (2016) defines digital transformation as the total and overall societal effect from the digitalization process. This was similarly described by Stolterman (2004), defining digital transformation as the changes that impact, cause, or influence all aspects of human life by digital technology.

Even though the terms clearly have different meanings when studied in detail, their exact definition is still rather ambiguous (Khan, 2016). Since this report strives to achieve a qualitative understanding of how digitalization will affect competence management it becomes vital to have a coherent understanding and use of terminology throughout the report as well as during the interviews. Hence, the terms digitalization and digital transformation will be used interchangeably during the discussions leading up to the findings of this report, and will represent the process of technology integration enabled through digitization. In simpler words described as the integration

process of digital technologies by digitizing all that would benefit from it (Business Dictionary, 2017). However, the term digitalization will be the primarily used terminology for this phenomena in the report.

2.4 The Impact of Digitalization

Digitalization is one of the strongest current ongoing trends and it is rapidly reshaping the global business environment (Kotarba, 2017). The drivers of utilizing new technology within a company vary heavily between industries and result in different competitive advantages (Andal-Ancion et al, 2003). Because of the variation of drivers and competitive edges that could be obtained, the degree of IT penetration between certain business varies (Bughin et al, 2017). The driving force behind this rapid evolution is the proven benefits within organizations such as increased performance and the creation of new exciting business opportunities. However, for companies to successfully manage this transition it is vital to formulate well thought strategies to handle the ongoing development (Matt et al, 2015). According to Fernández-Olano et al (2015), companies believe that the benefits of becoming digital are increased efficiency and more effective cost structures. Matt et al (2015) also discuss that digitization has the potential benefits of innovation within company, value creation, as well as creating new means to communicate with customers. This was similarly discussed by Carmichael (2016) stating that new technology introduction creates new and exciting possibilities for increased revenue at an unprecedented speed. However, Porter (2015) elaborates on this statement when discussing that the introduction of new technology and its exciting possibilities might not indicate a clear value proposition for customers just by its introduction. Instead, it is still important to consider customers' needs before adding features or utilize new technology (Bergman and Klefsjö, 2012).

Furthermore, Johansson (2017) discusses in his study that as digitalization emerges and products become increasingly connected and digital, this will lead to a heavy increase in the data collection possibilities for companies. Porter (2015) aligns with this stating that increasingly connected products provides opportunities for entirely new functions enabled through the staggering quantities of data. However, creating value from these large quantities of data requires extensive data analyses, which is not broadly utilized in business today (Lewis and McKone, 2016). According to Sathiyavathi (2014) the concept of data analytics can be applied and utilized to achieve a variety of outcomes, depending on context and purpose. Porter (2015) aligns with this view stating that the large data-sets collected can be studied with different methods to achieve different goals, with the most common methods falling under 4 categories, namely: *descriptive analytics, diagnostic analytics, predictive analytics,* and *prescriptive analytics*. All of which are utilized to draw different conclusions from data, increasing customer value and improving overall decision making.

However, as a consequence from increased data collection, organizations must increase their focus on keeping the collected data safe from breaches (Narayanan, 2017). There are evident risks if security measures are not taken to keep the collected data safe and the company's reputation might

suffer as well as create damages directly to the organizations capabilities. Furthermore, connected to the area of data collection are issues relating to data privacy (Porter, 2015). Data privacy often revolves around the legal issues of collection, storage, and usage of data (Klosek, 2000), and it has received significant political attention in recent years (Regeringen, 2016). One example of the political attention this area has received is the upcoming European Union General Data Protection Regulation (European Union, 2017). The main concerns often discussed are that data collection should be fair to customers, as well as adhere to laws and regulations. Hence, according to Porter (2015) it becomes increasingly important for companies to develop policies regarding data privacy.

Furthermore, Downes and Nunes (2013) implied that the introduction of IT and the increase in digitization could create a need to redefine or even replace a company's current business model, adjusting business operations to the ongoing rapid development. Venkatraman (2017) continues this when discussing business models and their reinvention, and that in the digital era companies must develop the necessary acumen to know when different technologies could enhance or challenge your business model. Venkatraman (2017) further continues and discusses that through digitalization the importance of ecosystem networks and the position companies choose to take in these ecosystems will increase. He introduces the concepts of orchestrator and participator within the ecosystems, as the two main positions. Orchestration is about pulling companies tighter together, connecting them across industry boundaries. Participation on the other hand is concerned with allowing others to link to you and connecting you to different companies, hence leveraging capabilities. However, as discussed by Johansson (2017) one aspect to consider when entering ecosystem networks is to decide and identify the suitable level of involvement, something that becomes important to achieve your own objectives and goals.

To succeed with digitalization, the right culture of collaborative relationships and freedom to experiment is important and needs to be embraced across all levels within an organization (McLaughlin, 2017). In this context, culture is defined as the values, behaviours, and social environment in the organization – which often displays itself in a company's ways-of-working and hierarchical structure (Business Dictionary, 2017). Porter (2015) mentions changing culture as an important action to secure success in a digital environment. For example, connected products and systems require more collaboration across functional borders which requires organizations to rethink structures and norms (Porter, 2015). According to a research by the management consultancy company McKinsey & Company, shortcomings in organizational culture is one of the main barriers to succeed in the digital age and executives who wait for organic culture change will move too slowly (Goran et al, 2017). According to Morris (2016) many organizations fail to establish the culture needed to succeed with digitalization, since the endeavours lack sufficient management support and understanding. In a recent report from the consultancy company Capgemini, the success of digital change management is dependent on leadership and guidance (Karna, 2017). Heathfield (2016) observes similar aspects, stating that successful change management requires management support in the form of commitment from senior managers and

executives and that this is the case regardless of whether the change happens on organizational function level or complete over the organization. It is similarly highlighted by Young and Jordan (2008) stating that management support is the most important factor for project success.

3 Method

In this chapter, the research methodology utilized for this project is presented. Initially, the research strategy and design is outlined and discussed. Following this, the methods utilized for this research are presented. The chapter ends with a discussion concerning the reliability and validity of the research.

3.1 Research Strategy and Design

Since the purpose of this study is to utilize theory from previous research as well as getting insights for new knowledge through a case at Alpha SD, this study requires both a deductive and inductive approach considering the relationship between theory and empirical findings. Deduction means a process where observations are made based on theory, whereas induction implies a process where new theory is formed based on observations (Bryman and Bell, 2015). This study sets out to investigate how digitalization will affect competence management and will therefore ground the study on existing theory within those subjects, thus deduction. However, the research also seeks to establish new insights within a previously unexplored field, by examining a specific case, which implies that inductive reasoning will also be utilized. Hence, it can be stated that a combination of these approaches is used, showed in Figure 1 below. According to Eisenhardt and Graebner (2007) by having a combined method the two approaches support each other with the inductive approach allowing for the observations to be tested against already existing theory derived deductively. Through this, theory and observations can be iterated back and forth to develop new theory within the research area (Dubois and Gadde, 2002).

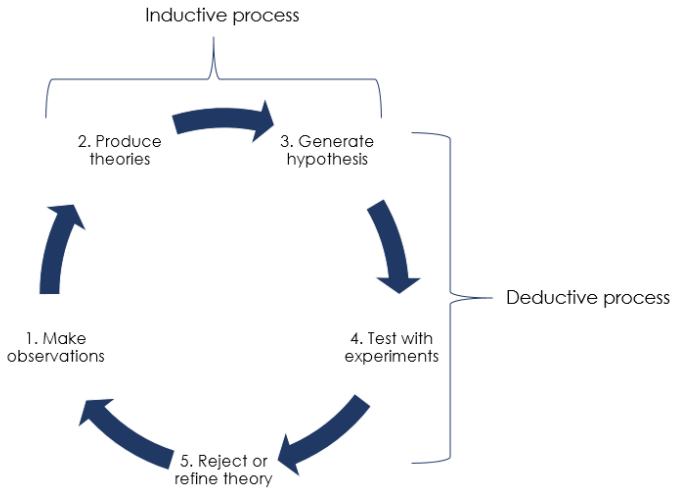

Figure 1 - The research process utilized in this research project is a combination of induction and deduction

The research has been conducted as a qualitative study as the focus has been to understand how digitalization affects competence management within a telecommunications company (Bryman

and Bell, 2015). According to Eriksson and Wiedersheim-Paul (2008) the reason to utilize a qualitative approach is to understand the details of a phenomenon, but also that the approach itself is beneficially when examining opinions and values within individuals. Denscombe (2014) on the other hand discusses that a quantitative method with examinations of statistics and large data sets could in many situations be considered more appropriate since it creates a more accurate, unbiased view. However, it is important to choose an appropriate approach basing it on the research purpose (Ibid.). Hence, for this research it was deemed that a qualitative approach would yield the best results. This since the research aims to answer how two concepts relate to each other, as well as the area of digitalization itself being a highly unchartered territory making the opinions of academics in the field valuable to gain further insights within the research topic.

As for research design, a case study was performed at Alpha SD, involving semi-structured interviews as primary data collection method. The case can be labelled as a critical case, which according to Bryman and Bell (2015) is when a case is chosen based on a hypothesis and that this case will allow a better understanding of the circumstances of this hypothesis. Concerning the case, Alpha was chosen because it was deemed to be a good case to explore given its industry and extensive work within competence management. The telecommunications industry is a technology-oriented industry currently experiencing digitalization. Competence management is important for the Service Delivery organization to carry out their value propositions, as discussed in Chapter 1.1. Furthermore, Alpha SD utilizes its competence management not only as an identifier of development opportunities, but also to support the allocation of resources to customer projects, hence making it vital for the delivery of customer value. However, there could exist a problem of generalizability concerning single case studies as they often cannot be representative so that the findings yielded can be applied more generally to other cases (Bryman and Bell, 2015). However, as stated by Flyvbjerg (2006) there is a common misconception that it is not possible to generalize from a single case. Further, he continues to discuss that a single case study may be vital for the scientific development within a field, serving either as complement to additional studies or as main fundament for new scientific development. The method of the report is visually displayed in Figure 2.

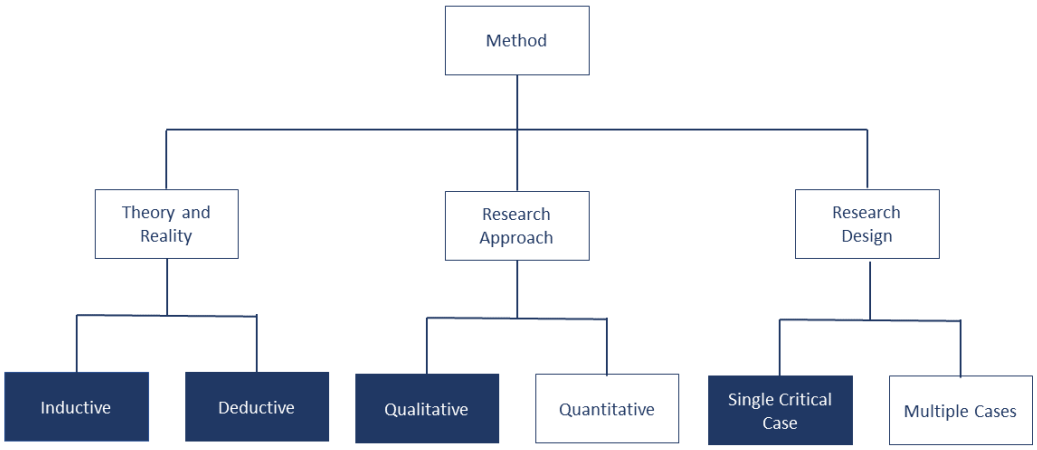

Figure 2 - The picture displays the structure of methodological components utilized in this research

3.2 Research Methods

In this segment the utilized research methods for this project are presented and discussed. Furthermore, the choices of respondents for interviews are introduced and the sampling process is discussed.

3.2.1 Literature Review

According to Eisenhardt and Graebner (2007), all trustworthy empirical research is grounded in related literature. For this research, an initial literature review was undertaken concerning the areas of *competence*, *competence management*, and *digitalization*. The purpose of this literature review was to investigate what was already known within the research areas, relevant theories, and appropriate methods to utilize (Patel and Davidson, 2016). Furthermore, this review permitted the researchers to identify an academic gap to be filled within the research area. Also, the literature review helped to revise the research questions. The literature review was conducted in a systematic way to increase the reliability of the research (Bryman and Bell, 2015). The review commenced with deciding what areas of interest to investigate concerning literature. For this research the subjects of *competence*, *competence management* and *digitalization* were chosen based on the research purpose and research question, to form a basis of theory for the researchers. The Chalmers Library search engine and Google Scholar were used with keywords relating to the subjects to obtain articles and books that would be relevant. The summary of each media was investigated to further screen the literature for relevance. A comprehensive list of literature was then created and

the authors started to digest the literature to produce a descriptive map of the subjects as well as how previous research related to each other.

3.2.2 Semi-structured Interviews

The main data collection for this research project consisted of semi-structured interviews. According to Eisenhardt and Graebner (2007) interviews as a data collection method are an efficient way to gather rich amounts of data, especially when the area examined is rather intermittent. The reason semi-structured interviews were chosen was because the authors desired a flexible process where interviewees' framing and understanding of issues and events were emphasized (Bryman and Bell, 2015). Also, since a specific focus had been established, namely, how digitalization affects competence management, semi-structured interviews were deemed more appropriate than unstructured interviewing (Bryman and Bell, 2015). However, Bryman and Bell (2015), also describe that unstructured interviewing has the purpose of gaining a genuine understanding of the world without presuppositions, which could be beneficial in many situations. Opposing to this, semi-structured interviewing addresses issues related specifically to the research focus, which was deemed necessary for the interviews within this study.

Initially, two interview-guides were created with several questions divided into categories on somewhat specific topics related to the research questions, see Appendix A and B. This was to ensure that the interviews followed a structure but also to allow for the interviewee to have freedom concerning how to answer the questions (Patel and Davidson, 2016). The reason two interview guides were created relates to the fact that interviews were to be carried out both with academics, as well as employees within Alpha. Hence, depending on the respondent of the interview, the correct corresponding interview guide was utilized. The interview guide utilized with academics mainly addressed topics relating to the overall concept of digitalization, with specific focus on competence management in general. The guide used for employee interviews on the other hand, addressed issues and concepts inherent to Alpha – to gain more in-depth insights concerning the research topics. The clustering of questions into categories were undertaken to simplify the upcoming analysis of data (Bryman and Bell, 2015). However, during the interviews several supplementary questions were asked as well, based on the nature of the interview. In all cases, one researcher acted as the interview leader, taking brief notes, while the other took extensive notes. The passive interviewer could therefore keep an overall track of the interviews and topics covered (Bechhofer et al, 1984. As cited within Bryman and Bell, 2015).

3.3 Research Process

After the literature review was conducted, it was deemed that academic interviews should be conducted to further strengthen the literature. From the literature review it was evident that the connection between digitalization and competence management was an unchartered territory and that the research would benefit from further exploring this area to build an extensive knowledge base prior to examining the case. Furthermore, since the formulated research questions put emphasis on what will be of concern for telecommunications companies looking forward,

interviews with people knowledgeable within digitalization was considered important to get the latest research on that subject.

Presented below is a list of the academic interviews conducted, see Table 1. The different interviewees were selected based upon the opinion and recommendation of the academic supervisor who had a contact network in the field of technology and management as well as information regarding in which institutions knowledgeable people could be located. The interviewees were chosen so that they collectively covered a broad spectrum of areas where digitalization impacts organizations. The interviews were conducted in a semi-structured setting, described in Chapter 3.2, and lasted for one hour. They were conducted face to face whenever possible, otherwise via Skype.

Interviewee	**Position**	**Type**	**Setting**
1	Professor, Head of Research Area	Academic	On-site
2	Professor of Information Systems and Management	Academic	Skype
3	Professor of Computing Science	Academic	On-site
4	Professor in Operations Management	Academic	On-site
5	Consultant on Digital Transformation	Industry	Skype
6	Professor Human Computer Interaction	Academic	Skype
7	Associate professor Applied Information Technology	Academic	On-site
8	Associate Professor in Business Administration, specialization Organisation.	Academic	Skype

Table 1 - Academic interviews conducted within the study

To capture all findings, all interviews both with academics and Alpha employees were recorded and transcribed after each session (Patel and Davidson, 2016). This allowed more thorough examination of what was said through repeated examinations of answers. Furthermore, these

recordings also helped the authors to avoid misinterpretations and to avoid having personal values affecting the answers (Bryman and Bell, 2015). If there were any confusion around the answers from respondents, these were clarified through email. The data were simultaneously collected and analysed according to the grounded theory approach, which describes that analysis and data collection are performed simultaneously (Bryman and Bell, 2015). By having this approach, the research obtains an iterative style where collected data can be used to further develop questions to be used in later interviews, hence achieving a more thorough data collection. After all interviews were conducted and transcribed, a more formal analysis method was utilized which implied reviewing the transcripts, labelling the content, and highlighting sections that were of theoretical significance. From this process, the academic interview findings were divided into the following categories: *Manage Digitalization, Impact of Digitalization, Competence Areas of Increased Importance Considering Digitalization, The Organization of Competence,* as well as *The Evaluation, Learning and Development Within Competence Management*. The findings within each category are presented in Chapter 5.

To proceed with the research and to gain a practical understanding of the findings within these categories, interviews with employees within Alpha were conducted to investigate the respective category in a telecommunications company context and setting. These interviews aimed to answer how Alpha as well as Alpha SD work within the field of digitalization as well as competence management. To supplement the interviews, several internal documents, processes, as well as intranet sites were examined to create a thorough understanding concerning the examined areas. From this accumulated information a description of the case company and their work within especially the field of competence management was created, which is presented in Chapter 4.

For the interviews within Alpha, a sample was chosen utilizing snowball sampling where an initial set of interviews were scheduled at first with people knowledgeable within the areas mentioned above, and then succeeding interviewees were identified from the initial interviewees (Bryman and Bell, 2015). The interviewee sample was picked from different areas and departments of Alpha such as: Competence Management, Strategy, Learning, Process Management, Product Management, IT Security, Program Management, Consultancy - to cover all topics from the research questions. Many of the interviewees had extensive experience from working within Alpha and several of them held managerial positions, hence providing credible answers. The method utilized was semi-structured interviews, as described in Chapter 3.2. In total 22 interviews, see Table 2 below, were conducted for one hour each, although several respondents were interviewed on multiple occasions. Approximately half of the interviews were conducted on-site while the other half were conducted via Skype. On-site interviews were preferred and booked for as many interviews as possible but in some cases, it was not possible because the interviewee was in another region or country. Furthermore, the researchers spent more than half of the research time working on-site at Alpha's office which led to several encounters and informal discussions in addition to the interviews. A high proportion of placement on-site also led to an increased general understanding of Alpha compared to if the research were to be conducted off-site.

Interviewee	Position	Setting
1	Manager	Skype
2	Manager	Skype
3	Manager	On-site
4	Business Developer	Skype
5	Manager	Skype
6	Manager	Skype
7	Head of Function	Skype
8	Head of Function	Skype
9	Head of Function	Skype
10	Head of Department	Skype
11	Head of Department	Skype
12	Manager	On-site
13	Manager	Skype
14	Manager	On-site
15	Manager	On-site
16	Head of Department	On-site
17	Manager	On-site
18	Consultant	Skype
19	Head of Function	On-site
20	Head of Department	Skype
21	Head of Function	On-site
22	Manager	On-site

Table 2 - Employee interviews conducted within the study

To build arguments to answer the research questions, the findings from the employee interviews together with internal documents and processes were synthesized against the academic interviews and the literature review, see Figure 3. This synthesis is presented in Chapter 6. Here, the findings from the Alpha interviews were synthesised with the academic findings and the literature review. The findings were synthesized and analysed within two different categories namely *Important Competence Areas* and *Digitalization and Competence Management*, both based on the research

questions. Within the second category the findings are analysed according to the competence management framework utilized within Alpha SD, which is described more in detail in Chapter 4.

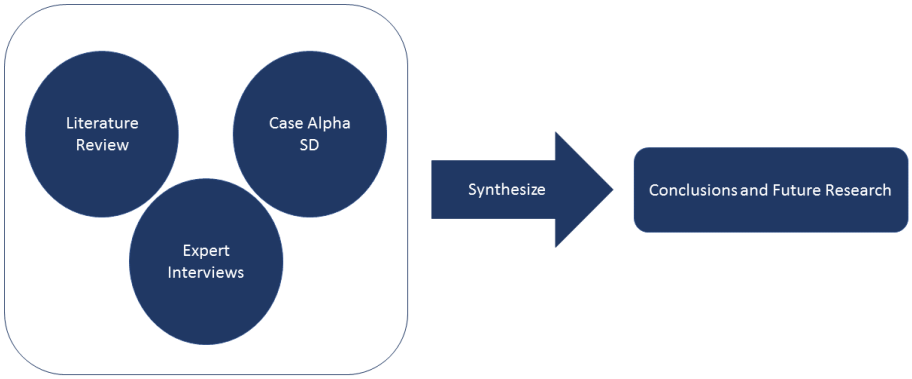

Figure 3 - Visual description over research process

3.4 Validity and Reliability

To ensure and evaluate the trustworthiness of the research, the concepts of validity and reliability needs to be consider throughout the process (Bryman and Bell, 2015). However, according to Patel and Davidson (2011) the concepts of validity and reliability become significant in a different way in a qualitatively study. Bryman and Bell (2015) recognize this, and describes the views of Guba and Lincoln (1998) that utilize different criteria for the evaluation of trustworthiness in a study. The criteria are *credibility*, *transferability*, *dependability*, and *confirmability*. The criteria must be considered in all the research methods utilized, to secure this trustworthiness. To ensure credibility the researchers submitted findings for review by the studied organizations and people on a continual basis for possibility of confirmation of findings. To increase the transferability of the study, the researchers did thorough documentation of findings and method execution. The researchers also kept records in an extensive manner for all projects phases to ensure that proper procedures had been followed, since this ensures dependability (Bryman and Bell, 2015). Even though complete objectivity is not possible in business research, the researchers ensured confirmability by keeping in mind to not allow personal values to excessively sway the conduct of the interviews (Bryman and Bell, 2015). The concept of triangulation was used in the research which implied using multiple methods and sources of data, including: literature review, interviews, and case. This enabled the researchers to gain greater confidence in the findings. Concerning the aspect that several interviews were carried out via Skype it was deemed not to have impacted the research's trustworthiness. This since the same type of recording devices, questions and follow up processes were utilized as during the on-site interviews.

4 Description of the Company Alpha

The following chapter introduces the reader to the case conducted at Alpha, which is a global company operating in the telecommunications industry. Initially, general information concerning Alpha and Alpha Service Delivery is presented, followed by Alpha Service Delivery's work within competence management. Lastly, the competence management framework utilized within Alpha Service Delivery is outlined.

4.1 Alpha

Alpha is working within the telecommunications industry and has traditionally been categorized as a hardware supplying company. However, lately an increased focus has been diverted towards delivering services and customer solutions. This transition has made Alpha evolve their view on competence management, adjusting the way competence is handled. With a rich history of technology transitions Alpha currently facilitates a widespread product catalogue spanning several different markets as well as industries.

Within Alpha there are around 20 functional areas, throughout the company. A functional area can be described as groupings of individuals relating to the function that they perform within the global organization, i.e. Service Delivery, Administration, Sales etc. This research will be carried out within the Service Delivery area, and hence most attention will be diverted towards those frameworks and models utilized by this functional area. However, Service Delivery is one of the largest functional areas within Alpha concerning the number of employees, hence making it very important to the company. Alpha SD as an organization is responsible for the delivery of services to customers both regionally and globally.

Lastly, Alpha's initiatives regarding digital transformation should be addressed with regards to this report. Currently, Alpha has an ongoing digitalization initiative spearheaded by one senior executive. This initiative will drive digitalization enterprise wide, and will require a cross-functional effort spanning across all departments. As part of this effort, an online academy has been set up to inform of and educate employees to obtain digital skills. The main idea with this portal is to provide employees with the tools to participate in the ongoing transformation, but also provide information concerning the organization-wide initiative. Furthermore, Alpha is aware that culture is an important driver for change within all endeavours, especially digitalization. To handle this culture aspect, an online portal containing information for both employees and managers on how to work with cultural change within the company has been set-up recently, and will serve as a focal point for culture related work.

4.2 Competence Management Within Alpha Service Delivery

Within Alpha there is a companywide Career and Competence Model (CCM) that serves two purposes. The first one is to give employees an overall view on their future career opportunities and flows within the company, whereas the second one is to enable Alpha to efficiently build competence and skills to drive business forward.

Competence management at Alpha SD is facilitated through a competence management framework (CMF), see Figure 4 below, which is aligned to the overall company-wide Career and Competence Model and incorporates certain aspects of this model. The CMF consists of the following components: *Job Roles*, *Learning & Development*, *Assessments*, and *Competence Management Structures*, displayed in Figure 4. Based on this, Alpha SD's CMF can be considered to cover the principles and processes defined by Draganidis and Mentzas (2006) of being a CMS. This framework is facilitated through several different strategies, IT-systems, and processes. Down below in Figure 4, the four mentioned components that outline the main cornerstones of the framework are illustrated. As discussed in Chapter 1.1 competence management within Alpha serves a two-fold purpose, first to identify, structure, and develop competences of the workforce, but also to support the allocation of resources for current and future customer projects. The allocation of resources, supported by competence management, is carried out by the Resource Management (RM) department within Alpha. This department is responsible for the activities and processes relating to the operational planning and allocation of resources within SD, and is supported by competence management.

Figure 4 - The competence management framework of Alpha Service Delivery

4.2.1 Job Roles

The Job Roles component within the CMF is aligned to the CCM used by all functional areas within Alpha. The CCM was developed to make career opportunities and competence requirements in the entire organization clear to line managers and employees. The CCM is further broken down into four parts, that each are developed to facilitate the way Alpha works with career and competence development.

4.2.1.1 Job Role Descriptions

Job Role descriptions outline the characteristics of a specific position within the organization. Each Job Role description includes several competences associated with that role (Job Role Competence), as well competences of a more general kind (Alpha Wide Competence). The Job Role description describes what the holder of the role is responsible for, and what competences that are needed to perform those tasks to secure successful performance.

4.2.1.2 Job Stage

Job Stages are an addition to Job Roles, describing the level of seniority of a person holding the Job Role. Job Stages range between 1 to 9 and they are designed to manage career enhancements. Furthermore, the Job Stages state the different kinds of competence needed within a Job Role for a level. Also, competences are rated from T, A, B, C, D, and the Job Stages define what level the different competences must be on for specific Job Roles.

4.2.1.3 Competence Model

The competence model describes the different kinds of competence that exists within Alpha. Alpha has chosen to classify competence into three groups, spanning several different fields including: products, individual attributes as well as languages. The groups are: *Job Role Competence, Alpha Wide Competence,* and *Portfolio Competence.*

Job Role Competence

Job Role competence represents the abilities needed to perform the tasks that are defined for that Job Role. They are uniquely defined for each Job Role within Alpha. These competences are assessed when determining at what Job Stage the person holding the Job Role should be.

Alpha Wide Competence

These competences span the entire Alpha organization and can be further broken down into two different parts: *Knowledge & Skills* and *Behavioural Competence.*

- **Knowledge & Skills** – These are generic across the entire organization and can be described as a broader kind of competence. Examples include, languages and knowledge about the company. Some are applicable for each Job Role, but some are more specified.
- **Behavioural Competence** – These competences could be defined as sets of behaviours that drive performance, often linked to personal characteristics. These characteristics could be viewed as a combination of personality, interests, motivation, and knowledge. These are universal throughout Alpha, and can be applied to each Job Role. In total Alpha has 20 behavioural competences, and these have not been specified internally, but externally developed aligning to a global standard.

Portfolio Competence

These competences are not a part of a Job Role, but still important for Alpha as an organization. Instead of being included in certain Job Roles, they are added to a position or to an employee's

specific competence profile. These competences describe relevant knowledge on Alpha's products and solutions on the market.

4.2.1.4 Career

This aspect of CCM is used to ensure that employees could take active decisions about their future careers. Alpha advocates and supports proactive career planning for all their employees, and this part of CCM provides individuals with the tools and guidance needed to make these plans. Basically, this part of CCM focuses on three different steps, that can be broken down into sub-sets: *Explore* where you are today and where you want to go, *Evaluate* what you need to do to move in the desired direction, and *Engage* with others, with your development, and with your career. Within each of the steps there are multiple anecdotal stories and potential career flows.

4.2.2 Learning & Development

Learning & Development seeks to assure that the correct opportunities for developing employee competence are available and utilized throughout the organization. Within Alpha, the learning structure ensures that a baseline of foundational knowledge is available for all employees. Furthermore, by using a combination of structured learning methods, collaborations, as well as on-the-job learning ensures that this knowledge is further developed and utilized.

Currently, Alpha offers an online portal, known as “The Academy", where courses corresponding to all the above described competence areas is available. This portal mainly offers online, virtual, and instructor-led courses but also different collaboration forums integrated with internal communications and knowledge sharing communities

4.2.3 Assessments

Within the CMF at Alpha SD, there are three different kinds of assessments: *Competence assessments, Global Individual Assessment (GIAX), and Behavioural Assessment*. All of which are facilitated through several web-based tools. *Competence Assessments* are self-assessments performed by employees aiming to support the identification of competence gaps, and act as a foundation for competence development plans. Furthermore, these *Competence Assessments* work as an inventory for Alpha SD considering competence profiles, and are used to staff customer projects.

GIAX Assessments are used to determine if an individual meets the requirements of a Job Role on a higher stage then their current stage. The purpose of this assessment is to ensure that Alpha SD’s employees have the competence to deliver global consistent value for their customers, achieve reliable and trustworthy assessment results that are recognized by customers, ensure that all assessed employees are customer engaging and fulfils leadership responsibilities. The objective is to ensure that Alpha SD will meet and exceed customer expectations.

Behavioural Assessments are used to determine an employee's readiness for meeting the defined behavioural requirements for a new position. The assessment procedures ensure that the

competence among employees meets required levels. These assessments are currently only carried out within SD as a part of a *GIAX Assessment* for certain higher Job Stages.

4.2.4 Competence Management Structures

Competence management structures serve to ensure that Alpha SD always has the right information available for correct competence profiling. In its essence it is about having an effective information modelling within the competence management IT systems, as well as a composition of competence management that supports the overall goals of the organization. This serves to ensure that Alpha SD can effectively locate personnel, identify competence gaps, and allocate resources based on business needs.

5 Academic Interview Findings

The following chapter aims to present the reader with the findings from the academic interviews. Initially certain general findings concerning the concept of digitalization are presented, which is then followed by competence areas that will become increasingly important due to digitalization. Lastly, the academics' views on how digitalization will affect competence management are presented. The findings presented are based on responses collected from interviews with academics within the field of digitalization or related subjects. Hence, certain repetition of theory from the literature review could be evident, since the interviewed academics might base their responses on materials already discussed within the literature review chapter.

5.1 Manage Digitalization

Almost all academics agreed upon the fact that driving and managing digitalization is hard and depends heavily on context. Especially, this concerned the aspect of company culture, which according to several academics must be addressed to handle digitalization. The central issue when driving and managing digitalization is to achieve a culture that is open for change and allows questioning of previous ways-of-working. It is also important to create a sense of urgency within the organization concerning digitalization. Also, it was clear that companies must adjust their organizations to successfully drive and manage digitalization. Decentralized decision making and working in a team-based setting were some of the main aspects that were brought up during the interviews. Also, it was highlighted that different parts of the company that previously have had low interaction now would need to work more closely together to handle the rapid change, i.e. R&D and IT. Overall, due to digitalization, collaboration across department borders will need to increase. This was mainly since by combining different departments you could locate opportunities where increased customer value could be created, but it is also a necessity to succeed with the digitalization efforts. By collaboration internally it was discussed that it creates increased opportunities for innovation.

Certain academics also brought up an aspect of increased need to collaborate across company borders due to digitalization. This will support companies to access competence that they themselves do not have in-house currently, which could become very relevant as technology development speed increased. Also, it was discussed that by having external collaboration an organization might discover and find opportunities to create increased value for customers by teaming up with other parties creating more attractive products or services.

Several academics argued that there exists a difference between newly established companies and long-established companies concerning the embracing of digitalization. It was stated that long-established companies, like Alpha, often have a harder time embracing digital transformation. This was mainly since culture was stated as the key element in managing the digital transformation and as stated by one academic *"you don't change the culture of a company in one night"*. Long-established companies have several layers and sediments consisting of technology, behaviours,

ways-of-working, and organizational politics, all of which are important to acknowledge when driving change.

According to some academics, the first aspect to consider when discussing digitalization within a company is the semantics, e.g. the meaning of the word digitalization. In an organization where, different departments (i.e. R&D, HR, Production etc.) have different opinions concerning the term digitalization, achieving a joint understanding becomes vital to secure success with the endeavour on becoming increasingly digital. Concerning employees, it was argued by several academics that organizations must develop a higher trust in their employees, and divert decision making to lower hierarchical levels of the organization. Through this, an agile response to changes in the environment may be achieved which is important to handle the rapid development. Furthermore, management support was brought up as one key aspect to successfully drive and manage digitalization. Commitment from the organization's executive management and an integrative approach through several departments ensures an organizational wide engagement for the endeavour.

5.2 Impact of Digitalization

Concerning this area, it was emphasized that the amount of data to facilitate and manage could increase due to increasingly connected products and IT usage, and that both automation and increased data generation creates new business opportunities. Concerning the degree of increased automation of tasks within an organization, it was a bit ambiguous from the interviews what implications for employees this could imply, since it was highly contextualized. Several academics argued that the content of employments will probably change. The following quote exemplifies this *"…we will probably observe a change in work content, but not rationalization of jobs"*. However, for certain types of tasks within employments classified as routine-based there existed some unity in the opinion that these might be redundant in the upcoming years as the introduction of digital concepts such as machine learning and robotics become more widespread. To manage this change in work content it becomes important for companies to locate individuals within the organization that have the highest willingness to change, and that are open to learn new skills. By combining the re-skilling of current employees with hiring new individuals with different mindsets and skills more in line with digitalization, it was implied by several academics that a company would be able to successfully follow through with digitalization and thrive in a digital environment.

Furthermore, for employees, digitalization means working increasingly with systems and interfaces, since the amount of IT in the work environment will increase. For a company's operations, several academics stated that the overall operational efficiency would increase due to digitalization, and that the introduction of new technology would increase the speed of businesses. The underlying arguments for this was mainly due to the increased level of automation, decreasing the variations within operations, as well as the more detailed analyses made possible through the increase of data.

5.3 Competence Areas of Increased Importance Considering Digitalization

Academics mentioned that competence within software development will become increasingly important since digitalization requires the technical knowledge of digitization, that is turning something analog into digital. Therefore, competence within this technical domain will become important for organizations to possess. It was stated by some academics that adding digital skills to an already existing competence domain could create benefits for an individual in a digital economy, since it creates new possibilities for employment and responsibility. Also, another competence that was highlighted concerned data and information analytics. It was stated that organizations could improve upon data analysis and more specifically become better at understanding what data they need to capture as well as develop models to capture the data. Thus, competence within data analytics and data modelling will become important. Furthermore, many academics highlighted that competence on business model reinvention and innovation will be equally important to technological development for a company. The main reason for this is since digitalization opens up for new exciting possibilities, hence making competence regarding how to make it commercially viable important. One academic exemplified this stating: "*What will the business model for an autonomous vehicle look like? How should automotive manufacturers charge for it? It will generate a lot of data, how will that be managed and who owns it?"*

Furthermore, it was also discussed by academics that competence concerning digital security will become a major aspect to manage for organizations considering digitalization. The main aspects discussed were concerning that as usage of IT increases within the company, an increased security focus must also be evident. Many academics talked about the concept of Internet of Things (IoT), and issues that arises concerning increasingly connected devices and process. Furthermore, several academics also mentioned the human factor as a big risk. The main concern was that as employees interact more with digital technology, the risks concerning security breaches increases.

Furthermore, several academics discussed that data collection and facilitation possibilities will increase through digitalization. This implies that organizations should focus on developing competence within the areas of data security and data privacy. Security of data often concerns areas such as: having secure storing and appropriate processes for data retention. Data privacy was mostly concerned with issues regarding adherence to laws and regulations, but also how data should be categorized to be used properly within the organization.

Due to digitalization there will be, according to academics, a need for an increased focus on competence that relates to behaviours and individual characteristics. Many academics argued that the ability to see new opportunities, to think independently, to utilize one's creativity and curiosity are attributes that will become valuable considering driving and managing digitalization. The academics discussed that digitalization will lead to increased business opportunities, as stated above, and the right behaviour is needed within employees to embrace these opportunities. The ability to cope with and drive change was also highlighted by academics as important. The reason

for the importance of this attribute was according to academics that digitalization will drive more rapid change than ever before, which will affect the work situation of most individuals. This requires people to be open to managing change. The ability to handle relations was also highlighted as an attribute that will be important to possess. This is because work will be conducted in a more agile way in a close collaborative way with other company functions, partner-companies, as well as customers. Some academics argued that behaviours and individual characteristics might become even more important to consider than functional competence in certain situations, as attributes are more permanent than a functional competence. Another argument from academics was that functional competences can be trained, given that an individual has the right mindset, whereas the mindset itself can be hard to develop. To mitigate this, academics further stated that companies should focus on hiring people with the right attributes and mindsets rather than people with perfectly matching skills.

5.4 The Impact of Digitalization on Competence Management

The following segment introduces findings on how digitalization affects the way competence is managed, structured, and developed within an organization.

5.4.1 The Organization of Competence

Concerning the aspect of competence profiles and Job Roles, several academics argued that these will remain important in a digitalized environment. This was because these profiles create structure and allow for organizations to locate individuals with correct competence to perform desired tasks. However, certain ambiguity existed because some academics argued that too rigid definitions of Job Roles creates inflexibility within an organization, which is something not desirable in times of change, e.g. digital transformation. According to these academics, certain levels of flexibility is desirable within an organization, which may be hindered by having too rigid job descriptions. It was introduced that some companies have utilized the concept of self-organized and de-centralized teams as a way to cope with increased flexibility and structure work without job roles. Furthermore, it was stated by several academics that organizations need to review the level of detail in their Job Roles. This is because very detailed Job Roles hinder the ability to respond quickly to changes in the environment as well as implies administrational work maintaining the Job Roles.

One aspect that was brought up by several academics was the content in current competence management systems. Many academics argued that these systems are too focused on past competence, meaning competence that already exists within the company. That implies that the systems are mainly used as a tracking device of current competences within the company. The problem with this is that when digitalization drives rapid change, the need for new competence will increase, but these systems are currently not equipped to handle this change. One academic explained that competence management systems often contain information on current and historical competence of importance and which employees that possess these. However, these

systems are needed the most for organizations in times of great change regarding the future, but then they only contain information about the past.

To handle this, some academics suggested to consider future trends of customers and the market, and translate these trends into competence areas of importance. In this way it is possible to include these aspects in the CMS, hence highlighting competence areas that organizations need to focus on. Furthermore, some academics also stated the need to include individual interests of employees in their competence profiles, and allow them to develop these as a part of their competence development. It is asserted that having competence management systems only focusing on past competence drives individuals into similar projects and performing similar tasks. This, according to academics, hinders competence development and hence does not allow for new competence to flourish within an organization. As stated by one academic: *"Employees often enjoy developing competence within areas that interest them, which current competence management systems do not encourage"*. Furthermore, it was also discussed that by assembling a team of individuals with a lot of competence within an area combined with individuals very interested in the same area, you create a dynamic, powerful team, as well as stimulating the growth of new competence within the organization. However, the interests of individuals should be related to the overall company goals.

5.4.2 The Evaluation, Learning and Development within Competence Management

Learning was one of the most prominent areas discussed during the academic interviews, and it was highlighted as one of main focuses for organizations currently undergoing digital transformation considering competence management. Initially, it can be stated that several interviewees highlighted the fact that due to the increased speed of development and technology invention, it will become increasingly important for individuals to learn new skills at a faster pace than previously. The following quote demonstrates this aspect: *"In the future, it's not about knowing the most, it is about having the ability to learn the fastest. It's about building the ability to capture knowledge quickly".* Furthermore, several academics agreed that continuous learning throughout one's career will become increasingly important to achieve continuous competence development. However, to achieve this, several academics discussed the need to redefine what may be characterized as learning. According to one academic, learning is often mixed up with education, although they are very different. Learning in organizations has often implied classroom courses and formal education but learning is often driven by individuals' curiosity and interest which is not always embraced in a formal learning setting. Several academics continued by stating that most learning takes place through informal gatherings and on-the-job experience, which in many aspects is intangible and harder to quantify in comparison to formal education (e.g. courses, videos etc.). However, to achieve continuous learning, it was brought up by several academics the need to have a culture that promotes knowledge sharing and an environment that allows for the practice of new skills. Some academics stated that to achieve this environment of allowing

individuals to practice new skills, organizations must allow employees time within their working hours to devote to competence development.

One academic introduced the concept of unlearning. The concept of unlearning was explained to be that employees in an organization must continuously question previous ways-of-working to come up with new innovative procedures, choosing different ways to performed previous tasks. This becomes increasingly important due to digitalization, as old methods and ways-of-working become redundant at a quicker pace than previously. However, the concept of unlearning was stated as being hard to achieve and taking significant time within an organization. This is because it requires developing a culture within the organization that allows for questioning of old habits, as well as allows utilization of new ways to solve problems.

Considering evaluation and assessments of competence, it was a bit ambiguous, according to academics, how it would be affected by digitalization. The main concern was that it was hard to determine since it depends on the purpose to perform the specific evaluation or assessments. However, one academic discussed the fact that assessments will remain relevant for employees with external customer contacts, securing the quality of employee performance. The competence mainly to be assessed was stated to be so called functional competence, making sure that they comply to customer demands. Furthermore, it was implied by some academics that as the behavioural competences increase in importance, the need to evaluate these across all levels of a company will increase as a way to put more focus on behavioural competences. Lastly, many academics discussed the fact that the actual assessment tool could benefit from becoming digital to increase speed, transparency, and flexibility. This also applies to other tools within the competence management domain.

6 Synthesis

In this chapter, insights from the interviews with Alpha employees and case material are synthesized with the literature review and findings from the academic interviews. Initially, important competence areas that became evident are presented and outlined. Then, two topics closely related to this research but not directly connected to the primary scope are introduced and discussed. Finally, it is outlined and discussed how digitalization will affect the different parts within Alpha SD's competency management framework.

6.1 Important Competence Areas

Initially, it may be stated that digitalization will require organizations to develop competence within software development. This is mainly since digitalization implies increasingly connected offers and products and more utilization of information technology. For Alpha this is a relevant aspect to consider but as stated by several employees within Alpha, the technical aspects of digitalization will not be an issue since the organization is a technology-oriented company, that has a lot of competence within this area and constantly works to develop these. Furthermore, software development contains many components such as computer programming and coding languages which get developed and replaced over time (Bisyandé et al, 2013). These components are also very contextually dependent, which makes it hard to determine what specific competence within this area that is needed for Alpha SD. Hence, the analysis will focus on the competence areas that Alpha SD could benefit from developing considering digitalization. However, it should be emphasized that in Chapter 6.1.2 it is highlighted that for Alpha to drive and manage digitalization it is more important to have people that are able to continuously learn a new specific area, than having the correct functional competence.

Furthermore, as discussed in Chapter 5.3.2, academics highlighted that an increased focus on certain behaviours and individual characteristics will be needed to drive and manage digitalization. In Chapter 6.1.2-6.1.4, these behaviours and characteristics are clustered into the following competences that from the authors' point of view, with support from academic interview findings, will be important to drive and manage digitalization, namely, *Willingness to change*, *Creativity*, and *Ability to handle relations*, which are visually displayed in Figure 6. Furthermore, these competences are also categorized following the already established view on competence break-down highlighted in Chapter 2, following the model from Janjua et al (2012).

6.1.1 Functional Competence Areas

The following segment present certain Functional Competence Areas that will increase in importance due to digitalization. Furthermore, the competence areas presented should be viewed as a cluster of several competences, which is mainly since specific functional competences are highly contextually dependent and hard to generalize for a specific industry and company. The competence areas are visually displayed in Figure 5.

6.1.1.1 Analytics Competence

Academics argued that through digitalization the opportunities for a company to collect and manage data will increase rapidly. With products, services, and solutions becoming connected, it is possible to obtain real time measurements and data which could result in more accurate decision materials for managers. According to academics, this creates an opportunity for companies to withdraw vital information from that data and make in-depth analyses of customers and internal business processes. This gives a possibility to achieve increased efficiency and customer focus as discussed by Kotarba (2017). Several academics had a similar view on the increased importance of data analytics, but also highlighted the fact that many companies have failed to grasp this important aspect of digitalization. This is clearly exemplified by the following quote from one academic: *"Few large Swedish companies are good at data analytics. In many cases, they don't even know what data to collect, and this makes improvement through analytics impossible".* This implies that many large Swedish companies have not yet fully embraced digitalization, which aligns with a study performed by the management and IT company BearingPoint, stating that Swedish enterprises are behind compared to international organizations in digital maturity (von Blixen-Finecke et al, 2017).

It is argued by Sathiyavathi (2014) that analytics can be applied and utilized to achieve a variety of outcomes. For Alpha, one employee introduced the concept of viewing analytics as a toolbox, containing tools such as classical statistical methods and newer concepts, such as machine learning and artificial intelligence. From this it can be stated that by having the competence of analytics, an employee would be familiar with the toolbox, and know when to apply the correct tool to extract the necessary information from large data sets to obtain the desired result.

From employee interviews within Alpha it was deemed that for Alpha SD, analytics as an area, will increase in importance. It was discussed that for Alpha SD there exists an opportunity to apply analytics both to extract information from large datasets collected, as well as include analytic methods directly into services or solutions. The incorporation of especially machine intelligence into solutions would generate an opportunity for Alpha to develop more intelligent offerings, according to one employee. Machine intelligence was described as a term used to define both concepts of machine learning and artificial intelligence, providing a joint description of both to enable an easier conversation between parties. Within the research department of Alpha, the concept of incorporating analytics, especially machine intelligence, into offerings has been examined in recent years. The goal is ultimately to create more intelligent solutions, improve decision making, as well as enable new product development (Porter, 2015).

For Alpha SD there has been a recent initiative to develop a Job Role that will be able to handle complex analysis of data, and incorporate analytics into solutions. The role has been labelled as Data Scientist, and although there is no standard definition on the market, common areas of knowledge to be included in this role are: statistics, applied mathematics, and programming (Hansen, 2016). Data Scientists utilize their skills within statistics and modelling to convert large

quantities of datasets into tangible insights about almost everything that is examined. The Data Scientist develops scientific methods, systems, and processes to extract knowledge from large data sets, as well as working with the implementation of analytics into solutions and products.

Several employees within Alpha SD were very excited about the introduction of this new Job Role as they saw it to be very beneficial and increasing the understanding of customer needs. However, a concern was raised about the need for these Data Scientists to also have knowledge about the domains in which their knowledge would be applied. One employee stated, *"For a Data Scientist it is important to be knowledgeable about how the data relates to the area/domain in which the analytics are applied"*. For example, if analytics are applied to a specific product or solution then it would be beneficial for the Data Scientist to have knowledge about the technology. This aligns with the view of academics discussing that combinations between digital skills and already existing competence within a different domain could serve as a competitive advantage for individuals, and in the end for companies as well. One way to achieve this combination was, according to one employee, to break down the role of Data Scientist into several sub-categories, having the lowest levels of Data Scientists as an add-on to another Job Role. By doing this, Alpha SD will secure employees with both an understanding of a specific area/domain as well as competence in analytics. In a recent report the technology research company Gartner drew a similar conclusion and introduced a job title called citizen Data Scientist (Gartner, 2017). The definition of a citizen Data Scientist is a person who applies analytics but whose primary job function is outside the analytics area. Gartner (2017) continues, arguing that citizen Data Scientists could help to introduce advanced analytics into different functions of the organization, without having all the excessive skills of Data Scientists. Moreover, Press (2015) argues that pure Data Scientists, being a highly complex and advanced position, are scarce on the market. Hence, making the approach of introducing Citizen Data Scientists an interesting approach.

Lastly, concerning the area of analytics several Alpha employees stressed the need for management to understand this competence area and its increased importance. One employee discussed that management must understand the importance of analytics, but also the fundamentals of the area itself and implied a need for all senior staff members to take a course on the subject. The following quote exemplifies the general feelings: *"More important than just hiring a bunch of Data Scientists, is to assure that the persons in charge learn and understand the fundamentals of analytics".*

6.1.1.2 Business Model Competence

Through digitalization the need for new and innovative business models is emerging. This was a common statement amongst both academics, as well as earlier literature on the subject (Downs and Nunes, 2013). The main reason for this is due to the changing environment of organizations occurring due to increased technology introduction, but also the increased amounts of data enabling new value creation opportunities for customers, as discussed above earlier in this chapter. This aligns with and is elaborated on by Carmichael (2016) in her Harvard Business Review (HBR)

recording, stating that *"The rapid emergence and evolution of new technologies mean that new money-making opportunities emerge — and evaporate — with unprecedented speed"*. The implication is that companies need to seize these new opportunities in the fastest possible way. Furthermore, Shimp (2015) discussed that digital transformation is a force affecting all companies, and for some companies it will open for new opportunities, but for others it will mean playing catch-up. The difference is mostly due to the understanding within the organization on new business model creation, as well as establishing a culture of questioning and creativity. Several academics similarly argued that business model development will be equally important as technological development when a company undergoes digital transformation.

This mainly means that an enterprise must develop capabilities in new business model creation, but also increase the general knowledge of what constitutes a business model throughout the company. For Alpha, competence concerning new business model creation was highlighted by several employees as an area of increasing importance and it was stated that some initiatives within this area had been undertaken in recent years. This had been especially noticed within different company functions of Alpha experiencing rapid change due to new customer requirements. More customers are expecting X-as-a-service (XaaS) offers, in contrast to previously, according to one employee. This trend of having offers as-a-service is not the traditional way in which Alpha has operated, hence it has in recent years meant that several parts of the company have had to re-think how they structure their offerings and develop new business models. One employee argued that it is important for individuals to have a sense of commercial viability. Hence, it is important to have a holistic view concerning the components of a business model when developing offers to customers.

Another aspect concerning business models that was highlighted by academics was to increase the general competence on business models. For example, value propositions, revenue streams and key activities and how they apply to the specific situation, which is some of the components described by Osterwalder and Pigneur (2010) in their acknowledged Business Model Canvas. This was mainly to assure that employees focus on ideas and initiatives resulting in value for customers, as well as aligning them to company capabilities. This aligns with the view of Porter (2015) stating that *"just because a feature is now possible does not mean there is a clear value proposition for the customer",* indicating a need to always develop features fulfilling customer needs. One employee strengthened this stating that "*it is important for everyone to know our business models since we then can find where digitalization can strengthen our value propositions*".

For Alpha SD, it was deemed that the acumen of what constitutes a business model was low, and employees have not had a mindset of thinking in terms of customer value and potential revenue when pursuing initiatives. This is mainly due to the fact that Alpha has a legacy of being a technology-oriented organization where products are developed until market ready, which according to Bergman and Klefsjö (2010) could create a narrow focus on developing technology without customer involvement, hence, missing the opportunity to fulfil customer needs. Hence,

this was an area that could be beneficial for Alpha SD to further develop. One employee within Alpha SD argued that *"many ongoing projects have developed unique business models for specific customers, hence making them impossible to scale",* which indicates a need for further work within the area of increasing the general competence of Alpha SD's business models within the organization.

6.1.1.3 Security and Privacy Competence

Several academics discussed the issue of security as an implication of digitalization. Their main concern was that organizations undergoing digitalization must also be cautious when it comes to security and that competence within this area becomes increasingly important as IT usage increases within the company. For organizations undergoing digitalization it is easy to forget about the security of the newly digitized processes and products. Internet of Things (IoT) was one area often mentioned as a potential security flaw, since the number of connected products increases but the security of the products does not keep up with the development. Most of these discussions with academics concerned the security of technology, focusing both on products being connected (cars and smart watches), but also the security risks caused by human factor – that is when people interact with digital technology.

Internally at Alpha, IT security has been a hot topic in recent years, with many company-wide initiatives, as well as mandatory courses and educations to increase the general awareness of IT security. As stated by one employee, *"security is everyone's concern*", so it becomes increasingly important to assure that IT security awareness spreads to all company functions and that all employees adhere to centrally governed security guidelines that have been developed. IT security has been a priority for Alpha, since increasing amounts of work are being conducted in a connected way, according to employees. Also, more work is being done remotely, and products are becoming increasingly cloud-based, indicating a need for having a high IT security focus within the organization.

Additionally, as stated above in Chapter 6.1.1, digitalization enables companies to collect data in a previously non-experienced manner. This will, as discussed above, increase the amounts of data to be managed within the company. To handle this, organizations need to have successful models to structure and collect, but also store the data in a secure way. According to Narayanan (2017) the need for data security has grown in recent years as the amount of data breaches has increased. Also, according to Narayanan (2017), recent breaches have had direct effects on the customers' reliability of the company storing and managing their data. Hence, data security is of major importance for all companies facilitating large quantities of data. Working within the area of telecommunications, Alpha has had a tradition of facilitating large amounts of data from customers, according to employees. Currently, Alpha works with an integrative system concerning data security, complying to ISO-standards. Furthermore, Alpha has, according to several employees, implemented several control checkpoints assuring a high level of data security within their systems, whilst limiting the access as well as securing the retention.

Several academics argued that one of the major challenges concerning data collection is that of privacy issues, and there have recently been a lot of political engagements concerning the area (Regeringen, 2016), (European Union, 2017). When dealing with data containing sensitive information, competence on classification of data becomes important, but also competence concerning the legal aspects of data assembly and dissemination, aligning to Klosek's (2000) discussion on what constitutes Data Privacy. This is to assure proper adherence to current laws and regulations. Alpha has, according to employees, a long tradition of supporting and storing data for customers. Hence, Alpha has developed several processes and guidelines assuring compliance to stipulated laws and regulations. Furthermore, several positions exist within the company at a central level to manage current data privacy issues, but also regional functions working more integrated the different market areas within Alpha.

Figure 5 - Functional competence areas that will become increasingly important considering digitalization

6.1.2 Personal Characteristics - Willingness to change

As discussed in Chapter 5.3.2, academics highlighted that the *Willingness to change* is an important competence for individuals when driving and managing digitalization. Employees within Alpha similarly highlighted that the change-ability is an important individual competence to possess to drive and manage digitalization, but hard to achieve across the entire organization. One argument for this was stated to be the fact that driving digitalization within one's position could imply rationalization of one's tasks, hence creating an uncertainty regarding the effects of the change at hand. Furthermore, as discussed by Janjua et al (2012), this class of competence represents the core values and defines an individual's personality, hence it is difficult to achieve change regarding these. Hence, following the argumentation of academics concerning the management of digitalization, it could be beneficial to externally recruit people on different levels in the organization with this inherent mindset of driving and initiating change.

6.1.3 Cognitive Skills - Creativity

Another competence highlighted as important by both academics and employees was *Creativity*. As discussed in Chapter 6.1.1.2, digitalization implies a need for reinvention of current business models as well as development of new ones. This will also happen rapidly and opportunities will emerge and evaporate with great speed, indicating a need to be creative to capture these opportunities. Furthermore, *Creativity* will not only be needed in finding new business opportunities. As described in Chapter 6.1.1.1 digitalization opens up for possibilities to work with data through offers becoming increasingly connected and increased levels of technology utilized. However, *Creativity* is needed among people to see and harness opportunities that emerge due to digitalization.

6.1.4 Social Skills - Ability to handle relations

It becomes important for individuals when driving digitalization and operating in a digital economy to have *Ability to handle relations*. Academics said that being able to communicate, both internally within your organization as well as with third parties, such as customers and partners is important. The importance of being able to handle external relationships is strengthened in a recent report by the consultancy company Deloitte (2017) highlighting that in recent years there has been a significant increase in the number of jobs where customer contact has become more important. Furthermore, it was stated in Chapter 5.4 that functions need to work more closely and that digitalization puts pressures to perform projects in team-based settings to increase development speed. This is also discussed later in Chapter 6.2.2 where it is concluded that collaboration both internally and externally is required for success with digitalization.

6.1.5 Behavioural Competence within Alpha

As stated in Chapter 4.2.1.3, Alpha are working with behavioural competence by having six out of 20 predefined behavioural competences tied to each Job Role. Alpha SD then conducts behavioural assessments on customer facing Job Roles on Job Stage 7, 8, and 9. As described above, the importance of behavioural competence will increase and specifically the three elaborated on above will be important for all Job Roles across all company functions. It could therefore be argued that Alpha should consider putting the three behavioural competences above on all Job Roles since they are important to drive and manage digitalization. Since these three competences will become important for all Job Roles there could be room for improvements by assessing these three behavioural competences for all Job Roles and not only the customer facing ones as-is the situation today.

As described in Chapter 4.2, Alpha utilizes behavioural competences including them in their Job Roles. The fact that Alpha is addressing behavioural competences as important and have been working within this area for several years indicates that they have understood their importance. The competences elaborated on above (*Willingness to change*, *Creativity*, and *Ability to handle relations*) are covered in the four following Alpha Behavioural Competences: *Deciding & Initiating Action*, *Relating & Networking*, *Creating & Innovating*, and *Adapting & Responding to*

Change. Several employees stated that Alpha works with development of behavioural competence through feedback and personal mentoring. However, it was also implied that this aspect does not receive as much focus as it should be given. Furthermore, it was a shared view between employees and academics that behavioural competence need to be considered as early as in recruitment. One employee highlighted "*hire for attitude, train for skill*" explaining that it is easier to train and develop skills rather than behaviours. This aligned with an academic stating that it is more important to find the right talents and attributes in people rather than people with expertise.

Figure 6 - Behaviours and individual characteristics that will be important to drive and manage digitalization

6.2 Digitalization and Competence Management

The following segment aims to present how digitalization will affect competence management, using Alpha SD's competence management framework as an example. However, initially two factors not directly connected to the purpose of this report but important considering digitalization are highlighted and discussed. Then, a thorough discussion on the digitalization impact of the parts within the competence management framework is presented.

6.2.1 Culture

Although not exactly connected to the scope, it is the opinion of the authors of this report that the area of culture as an enabler for digitalization should be addressed. As stated in Chapter 2.5, culture is an important enabler for digitalization and several academics mentioned culture to be the most important factor to work with considering digitalization. For Alpha, several employees implied that the culture needed to embrace digitalization is currently not in place. This especially concerned the areas of: openness for change, questioning of previous ways of working, collaborative efforts, as well as freedom to experiment amongst the workforce. The main reasons to why the culture is not currently in place were that Alpha is a traditional technology oriented company, and that it

takes time to adjust the culture in such an organization. One employee stated that *"We currently don't have the culture of trying new things"*, indicating a need for cultural change to embrace digitalization. This aligns with the view of academics arguing that long-established companies have a lot of layers and sediments making it harder to embrace digitalization across the organization. However, since the digitalization and cultural initiatives just recently have been introduced at Alpha, it is natural that the cultural change is not evident yet.

As discussed by Morris (2016) many organizations fail to change their organizational culture due to lack of management support. This was the view shared by several academics, and it aligns with the view of several additional scholars and consultants (Young and Jordan 2008; Heathfield 2016). Even though Alpha has initiatives concerning digitalization, and is working on establishing the sought-after culture, several employees highlighted the fact that management support and understanding of digitalization is lacking, although the support is there on paper. "*Management says they are supporting, but people are not given the time to do the innovation",* was stated by one employee indicating a cognitive dissonance on achieving an innovative, questioning organization. One employee argued that to be successful with digitalization, *"we must obtain a sense of urgency to change, something which is not there now"*, and that these initiatives must come from top management. Academics also supported this, stating that management needs to divert decisions to lower levels of the organization, strengthening their trust in employees to succeed with digitalization. Within Alpha SD in contrast to other parts of Alpha, this works rather well already since most work is carried out as integrated team based projects.

Both academics as well as employees highlighted the fact that the semantics, the actual meaning of the word, of digitalization is of the essence when undertaking a digitalization initiative internally. Academics argued that it is important that the organization obtains a comprehensive view of what digitalization means for them at a high level and in their respective industries. Similarly, Alpha breaks down what digitalization means for them into different areas – including transformed offers, changing business models and intelligent solutions. However, several employees highlighted that it is currently hard to understand exactly what the word digitalization means. *"It is talked about a lot. People have different perceptions of what it means.",* was stated by one employee. It was also implied that the work on digitalization within Alpha would benefit greatly if the general knowledge of digitalization and its meaning was lifted across the organization as exemplified by the following quote: "*Some people just don't know what to do, but they want to … many are watching, but not driving the change".*

6.2.2 Collaborations

Several academics argued that an increased focus on external collaborations is a necessity for any organization operating in a digital environment. The main reasons were that external collaborations may support companies to access competence that they themselves do not have in-house, as well as offer opportunities to create increased value for customers by teaming up with other parties.

Considering external collaborations, several employees within Alpha highlighted this as an area not that extensively explored. The main reason for this is the legacy and tradition of Alpha, where the organization historically has developed everything in-house. This aligns with the view of several academics arguing that long-established technology-oriented organizations have a harder time changing their ways-of-working due to their legacies and sediments. However, as discussed by Johansson (2016), there are many advantages of establishing external relationships such as knowledge sharing and resource collaboration. Several employees within Alpha had realized these benefits and highlighted a belief that an increased focus on external collaborations would be beneficial in the long-run. However, it was implied that Alpha currently does not hold all necessary capabilities needed to successfully have extensive external collaborations. As stated by an employee working with strategy management "*A function that is missing currently is a partnering group that could discuss with external parties and locate opportunities",* implying a need for personnel skilled within this area, but also a wide focus across departments on external collaborations, as well as management support for this endeavour.

Furthermore, as stated by the same employee *"In the collaborations we wish to establish we don't have to be the major player in all of them, sometimes we could let other companies drive the development on behalf of us".* This aligns with the view of Venkatraman (2017), stating that in the digital age all companies must ask themselves:*" Are we seeking to orchestrate the ecosystem or simply participate?".* However, having their legacy of performing everything in-house it was implied internally that traditionally, Alpha has had the orchestrator role in external collaborations, thus, not deciding upon the most appropriate role for every individual project. This, according to Venkatraman (2017), is not the best way to approach it because it is important to match the role with your skills and capabilities, which vary depending on project. By doing this, organizations could better leverage their capabilities, and hence achieve more appropriate resource utilization within collaborations in the future.

6.2.3 Competence Management Framework

The following segments present how digitalization will affect the different parts within Alpha SD's competence management framework.

6.2.3.1 Job Roles

From the academics it was given that the concept of organizing people in Job Roles will still be relevant considering digitalization, as it clarifies responsibilities and act as a framework in which a company can organize. According to one academic, some organizations have tried to organize people without job descriptions, thus removing Job Roles, to create a more flexible workforce. This however, could create problems concerning responsibilities, and it was deemed that this approach works better for small technology intensive companies, often so-called Start-ups.

It was further discussed whether the increase in flexibility outweighs the loss in structure, and this becomes an important trade-off to consider for all companies. For Alpha, it was evident from employees that Job Roles are considered very important internally as they clearly specify

responsibilities and what tasks that are to be carried out. Furthermore, considering Alpha SD, Job Roles were deemed as especially important because projects are carried out in teams which often requires specified competence combinations. Thus, the concept of Job Roles could be considered to remain an important factor for organizing personnel in a digitalized environment within a telecommunications company's services organization.

However, as stated in Chapter 5.4.1, something that was argued by many academics was that too much detail ingrained in Job Roles might impair the flexibility you need in times of change. Some Alpha employees agreed upon this stating that the Job Roles within Alpha might be too detailed. They considered these perceived rigid Job Roles to hinder the flexibility within the organization, hence handling change, and making it hard to move internally within the company. Flexibility of the workforce and breaking down barriers between departments is of utmost importance considering digitalization, which was further enhanced by Jansson and Andervin (2016) stating that collaboration between different departments needs to increase due to digitalization.

6.2.3.2 Learning & Development

Learning and competence development were pinpointed by several academics as one of the most important areas considering digitalization. As mentioned in Chapter 5.4.2 the increased speed of development and technological invention forces individuals in an organization to learn at a faster pace than previously. It is similarly emphasized by Jansson and Andervin (2016) who state that organizations no longer can rely on their old long-term capabilities and need to shift to a strategy that is focused on speed and flexibility. Furthermore, Jansson and Andervin (2016) state that competence is based on knowledge and environment, and thus it is important for a telecommunications company to promote knowledge development in suitable environments.

From academics it was also understood that learning has traditionally within organizations implied classroom training and instructor-led courses. However, as stated in Chapter 5.4.2, most learning takes place in informal gatherings and on-the-job experience. Hence, through digitalization and its requirements to increase learning speed the view should change towards on-the-job training and informal learning. Furthermore, academics argued that continuous learning with re-skilling of individuals is an important aspect that companies must consider due to digitalization. Thus, for telecommunications companies to remain competitive in a growing digital environment it ultimately boils down to focusing on and promoting fast-, individually adjusted-, and continuous learning.

At Alpha SD, they are aware of the importance of learning and there are several opportunities to learn for employees such as instructor-led courses, e-learning, and videos. Furthermore, within Alpha SD there has been initiatives in recent time to speed up the learning curve of individuals, introducing more informal ways of learning, such as internal collaboration sites and self-service courses. According to one employee: "*This creates the ability for individuals to quickly embrace material, as they don't need to wait for a course*", thus implying that the development lead time of formal courses takes a long time and does not always fulfil the purpose of learning.

Alpha SD is aware that much learning takes place informally and through on-the-job training. However, some employees felt that this is not fully utilized and promoted within the company. One employee stated that for example the possibility to rotate between different functions is low, hence hindering on-the-job training within new areas. Another employee also highlighted that the culture of helping each other could be improved. If this is embraced, informal learning, as well as collaboration would increase.

Apart from offering structured learning opportunities there also needs to exist a culture within the organization where individuals take own responsibility for their learning, according to one employee, arguing that learning needs to be a shared responsibility between organization and individuals. The same employee felt that there sometimes are situations where people within Alpha do not take the initiative to pursue a learning opportunity because no one has told the individual to do so. To promote people to learn faster and learn continuously, the organization needs to employ the right environment and support individuals in exploring new projects and areas. Within Alpha SD, several employees argued that even though learning materials are available, there still exists a culture of relying on the organization to provide and point towards learning opportunities rather than employees taking own initiatives for their learning. One employee exemplified this stating: *"Internally, there exists a culture of waiting for and being handed a learning opportunity from your manager, rather than taking an own initiative for your continuous learning".* Internally, it was highlighted that to create this culture, management acknowledgment and support is of the essence. However, it was implied in some employee interviews that this has not been evident within Alpha.

As stated in Chapter 5.4.2, the concept of unlearning was introduced as an important aspect considering digitalization. In an article form 2016 the well-renowned journal Harvard Business Review defined the concept of unlearning as *"…the ability to choose an alternative mental model or paradigm... When we unlearn, we step outside the mental model in order to choose a different one"*, hence aligning to the view of academics (Boncheck, 2016). According to Boncheck (2016), the concept unlearning is a bigger challenge than learning for organizations. Furthermore, for unlearning to take place there needs to be a time of adaption in the process of letting old behaviours go, in order for new ones to be embraced (Ibid.). Considering unlearning within Alpha, most of the employees agreed upon the importance of being a learning organization as a key factor for surviving in a digitalized environment, but few had heard about the concept of unlearning. Although this lack of knowledge regarding the term unlearning, it was still evident that the concept of unlearning was considered important within parts of the organization. Several employees highlighted the importance of questioning previous ways-of-working and the need for the people within the organization to constantly adapt to the fast-moving environment they operate in. However, as stated by Boncheck (2016), to embrace new logic, unlearning must take place in every part of a business, spanning all departments. Hence, to achieve an organizational spread of the concept and practice of unlearning, extensive work should be put into promoting efforts that highlight the importance for employees to find new creative models to perform their tasks.

Some academics stated that organizations should reward individuals that actively seek continuous learning within different areas. The rewards that often were discussed were connected to increase in salary or other benefits. Several academics highlighted examples where organizations have successfully employed this. However, considering Alpha, there was a firm belief that rewards connected to continuous learning would not prove efficient. This was mainly since employees argued that individuals get accustomed to rewards which could turn into negative emotions if one does not get rewarded. Also, it was stated that motivation to learn must come intrinsically, not extrinsically.

Increased internal collaboration was a factor discussed at Alpha as important to succeed with digitalization, but also to increase the competence development within the organization. This aligns with the view of Porter (2015), stating that increased collaboration and knowledge sharing between different departments is a necessity for a digital company. However, many employees stated that the internal collaboration within the company is an issue, although the willingness to collaborate is there. It was highlighted that one obstacle to increased collaboration was the mobility within the organization. *"We have the people, but we must be better to move them around the company"*, was stated by one manager who also discussed mobility as a driver to really draw benefits of all competence present in the organization. Currently, some mobility initiatives exist within Alpha but these often implies long-term placements, which often could result in a permanent position.

Some initiatives have been undertaken in recent years, that have increased collaboration within Alpha directly or indirectly. One example is related to learning material, that is increasingly being diverted from static portals to communities where different employees from different parts of the company can support each other. The reason is two-fold, it is both to bring people together within the organization seeing new opportunities, but also serve as a competence development platform where very knowledgeable employee could help less knowledgeable. Furthermore, the recent introduction of internal social media sites has further contributed to the collaboration opportunities within Alpha, serving as platforms where people come together for different purposes. However, these initiatives set aside, it was evident that there exists a general feeling amongst certain employees that more effort should be put in to promote collaborations between functions and people.

6.2.3.3 Assessments

From academic interviews it was deemed that the area of assessments is hard to determine whether digitalization would affect it or not. Of course, several academics argued that the current assessment tools used in organizations will need to become more digital, but it was harder to determine whether their importance would increase or decrease due to digitalization. This could be based on the notion that assessments are an integrated part of a company's competence management (Draganidis and Mentzas, 2006). Hence, depending on how the other components of

a CMS are altered due to digitalization, assessments will need to adapt with regards to the other components.

As presented in Chapter 4, Alpha SD has three different assessments types: *Competence Assessment*, *GIAX Assessment*, and *Behavioural Assessment*. *Competence Assessments* within Alpha SD could be deemed to still be relevant considering digitalization, since Alpha SD requires updated competence profiles to successfully staff projects, as well as securing competence development for employees. Hence, updated competence profiles are a necessity to carry out the work within SD, but also for the employees themselves as it may give exposure to new opportunities and projects.

Concerning *GIAX Assessments*, it was stated in Chapter 4.2.3 that these are carried out to determine if an individual meets the requirements of a Job Role on a higher stage than their current stage. This is currently carried out only when it comes to Job Roles facing external customers, as it has been deemed to increase the quality of Alpha SD's value propositions, being a response to customer queries. As mentioned in Chapter 5.4.2, assessments will remain important considering digitalization for customer facing jobs, since they secure the quality of the employee performance. This aligns with the view of certain employees within Alpha SD, hence implying the continuous need and value for *GIAX Assessments*. Furthermore, The *GIAX Assessments* has in recent years introduced a platform to facilitate certain tasks within *GIAX Assessment* program. Through this platform the program has automated several aspects of the assessment process, making it highly digital, which was one of general requirements discussed by several academics when developing these systems.

Considering *Behavioural Assessments* these are used within the *GIAX Assessment* to determine whether the candidate fulfils the behavioural requirements stated for their Job Role, but only utilized for the higher Job Stages. The reason only the higher Job Stages are assessed is mainly since these are expected to have a higher focus on leadership and team management. Hence, behavioural competence has been deemed as highly important. However, *Behavioural Assessments* are also carried out in general within Alpha as a part of a recruitment process or to identify future development activities for a Job Role. As stated in Chapter 5.4.2, several academics argued the need for an increased focus on behavioural competence within organizations considering digitalization. Taking this into consideration, it may be discussed that the focus on *Behavioural Assessments* should also receive an increased focus within Alpha SD, to secure that the behaviours necessary to drive digitalization within the organization are accounted for.

6.2.3.4 Competence Management Structures

A part of the competence management framework within Alpha SD is competence management structures. This aspect concerns the processes, systems, and tools that Alpha SD needs to effectively and efficiently handle and manage the competence information. More specifically, it is about availability of quality competence profile information for efficient competence and resource management. The tools utilized within Alpha SD are almost exclusively cloud-stored and web-

based which is beneficial since it permits fast information sharing. Academics also highlighted this as important since it makes information more visible to all parties.

As brought up in Chapter 5.4.4, one aspect that was highlighted by academics was that competence management systems often focus on past competence. Lindgren et al (2003) supports this, stating that CMS's often focus on developing job descriptions and tries to fit individuals into them based on the competence they already possess. The problem with this is that when digitalization drives change, the need for new competence will increase, but these systems do not contain this information. According to academics, one way to overcome this is by putting more focus on the interests of individuals within competence management. For example, a person working within HR interested in analytics could be given the opportunity to participate in an analytics project in another department. Hence, this would increase that person's competence within the area. By letting people pursue projects in new areas, competence development is stimulated within an organization as well as creating more dynamic teams.

Within Alpha SD, employees felt that more focus could be put on individuals' interests within competence profiles. However, it was evident that Alpha SD works with the area of interests when it comes to their Individual Performance Management (IPM). IPM can be categorized as being performance review meetings between an employee and their immediate manager. These meetings are connected to salary, and measures an employee's yearly performance, as well as stipulating goals for upcoming years concerning both performance and development. The development goals are connected to the areas where the employee wishes to increase their knowledge and competence. However, these development goals must often be aligned to the department's strategic goals, according to one employee. Hence, it is not aligning exactly to the view of academics on how to overcome the focus on past competence.

Apart from recognizing individuals' interests as a way to overcome the focus on past competence, some academics also highlighted the need to work with monitoring of future trends. Today, Alpha SD discovers new competence mainly through development of new products or services. For example, the need for the Data Scientist Job Role with associated competences emerged from the need for Alpha SD to offer analytics services to their customers. The way Alpha SD explores competence today can be stated to be aligned with the view of Bergman and Klefsjö, (2012). Hence, focusing on the end customer. However, there are other ways to overcome the focus on past competence according to the academics. As described in Chapter 5.4.4, the academics argued that companies need to monitor future trends of customers, competitors, and markets. This could be done to discover what new competence areas that Alpha SD needs to start working with. One employee discussed that Alpha SD does not emphasize the work on strategic competence development currently, hence this could be considered as an area where Alpha SD could improve.

7 Concluding Discussion

The field of how digitalization affects competence management within a telecommunications company is an unexplored area with a low amount of literature and studies performed. Therefore, this research fills an important gap by investigating the connections between digitalization and competence management within telecommunications companies. Furthermore, the total amount of studies on how digitalization will affect telecommunications companies, in general, is also low. This is interesting since digitalization currently is a debated topic within telecommunications companies, both on employee and executive level. This indicates a gap between academia and industry and a possible explanation to this gap could be that digitalization has gained its big recognition within companies in recent time and academic studies have not yet been completed.

From this research it is evident that companies need to have both the technical as well as cultural aspects in place to succeed with digitalization. This research has revealed that the technical aspects regarding digitalization will not be an issue for telecommunications companies. This is mainly because they have inherently a lot of competence within the area of software development and similar fields. Thus, it can be concluded that telecommunications companies are well prepared with the technical prerequisites to manage and succeed with digitalization.

Culture was shown in this research to be an important underlying factor to embrace digitalization as well as to succeed with work within company functions such as competence management. It was also evident that Alpha had understood the importance of having the right culture and is currently working on this through company-wide initiatives. However, it was also evident that the sought-after culture has not yet become widespread throughout the entire organization, leading to Alpha not reaching its full potential in driving and managing digitalization. The reason for this was stated to be lack of sufficient management support and understanding, but mainly Alpha's legacy and traditions ingrained from many years of existence.

Furthermore, it was evident that for Alpha, an increased focus will need to be put on both internal and external collaborations to succeed in the digital age. Internal collaborations will increase the competence development within the organization as well as create opportunities for innovation. It can be concluded that Alpha has a focus on increasing the internal collaborations through the establishment of several online collaborations sites. However, amongst employees the general notion was that more focus on cross-department work should be encouraged and supported by management. External collaborations can also be concluded to be an important success factor in a digital age since digitalization will require organizations to obtain competence not available in-house, but also create increased value for customers by participating more in ecosystems networks. However, when entering different external collaborations, it is important for an organization to consider its role within the networks, adapting to the current circumstances and organizational capabilities. Telecommunications companies have historically had a tradition of developing products and solutions internally, not seeking extensive external collaborations. Hence,

competence regarding collaborations and network positioning should be an important aspect to work with considering digitalization.

It was evident in this research that some competences will become important due to digitalization. However, it is important to notice that they are very dependent on company context. In this research it was evident that for Alpha it will be important to harness competence within the areas of *Analytics, Business Models,* and *Security & Privacy.* Competence within *Analytics* is needed to work with the data that connected products and solutions will generate. Reshaped competitive landscapes require the company to have *Business Model* competence to repackage products and solutions, as well as create new innovative offers to customers. The increased quantities of data from connected solutions and more intelligent offers will also put requirements on Alpha to have competence within *Security and Privacy* to ensure that breaches and leakage of data does not occur. However, it was evident that this is something that Alpha is aware of and is working within due to their history of facilitating customer data. It can be concluded that employees in general will need to raise their general knowledge within these areas. Furthermore, as Alpha through digitalization will need to change, capture new opportunities, create collaborations over boarders as well as consider their role in partner networks, behavioural competences within the areas of *Willingness to change, Creativity* and, *Ability to handle relations* will become important. These are also important to consider when it comes to creating the sought-after culture needed to embrace digitalization.

Regarding digitalization and its connection to competence management, it is concluded that depending on the structure of the CMS and the overall goal with digitalization, an organization might need to change its CMS to handle the ongoing digitalization. In this research competence management was exemplified using the four components (*Job Roles, Assessments, Learning & Development, Competence Management Structures*) of the competence management framework within Alpha SD. From this it can be concluded that Alpha SD will need to adjust certain aspects of its CMF to create the right prerequisites to drive and manage digitalization.

It was evident that the concept of organizing and managing individuals in *Job Roles* and competence profiles will still be relevant. However, the level of detail in Job Roles needs to be considered since too much detail hinders flexibility which is considered important when managing digitalization. For *Learning & Development,* it can be concluded that a shift needs to occur where traditional learning such as classroom training or instructor-led courses need to be exchanged with new initiatives such as communities that promote fast learning. This is since digitalization puts the requirements on individuals to be able to learn the fastest to capture the opportunities that emerges in a higher frequency. Also, since digitalization implies a rapid change for companies, a conclusion evident is that organizations need to work with unlearning of old routines and ways-of-working in a more extensive manner than was evident today within Alpha. However, this requires cultural change, which aligns with the conclusions above on overall cultural change.

Concerning *Assessments*, it was evident in this research that behavioural assessments should receive an increased focus within Alpha SD. This is because the importance of certain behavioural competences will increase, and assessments work as a way to secure that the competences are accounted for internally. As for other assessments types it can be concluded that these will still be relevant for Alpha SD, since they function as a requisite for the company to carry out its value proposition. However, depending on how the overall change on competence management within Alpha looks like, the other assessments types might need to be adapted as well, this since assessments are an integrated part of competence management.

Considering *Competence Management Structures*, it can be concluded that a digital company should utilize digital systems for their competence management, something that was evident within Alpha SD. Furthermore, to drive competence development and to discover new competence needs, interests of employees should be included within competence profiles, as well as an increased focus on the external environment of the organization.

8 Future Research

As this research was limited to the context of a telecommunications company, a possible future research area would be to examine the correlation between digitalization and competence management in other industries than telecommunications. The context in which this research took place probably affected the findings and it can therefore be questioned whether the findings of this study can be generalized to other industries. Hence, one interesting topic for future research would be to conduct a similar research examining digitalization and competence management in other industries different from telecommunications. This could involve industries with limited experience within these areas, and limited amounts of digital knowledge amongst workforce. Similarly, a focus on other departments that do not work mainly within services could also be an interesting research topic.

Due to the limited amounts of literature within the field of digitalization and its connections to competence management, this thesis undertook several academic interviews with people experienced within the field to gather information. Also, stated in the limitations was that this research will provide a high-level impact analysis leaving out specific actions of improvement. Therefore, a future research area is to utilize this thesis as a basis and examine one aspect of a CMS more in detail for a specific industry, hence building best-practice knowledge and propose improvement suggestions to the existing system. Hence, a study concerning the specific actions to be undertaken to meet the new requirements of digitalization on competence management would be an interesting research focus.

Throughout this research, the area of learning was found to be the most affected component within competence management due to digitalization. The underlying arguments were that individuals in an organization must continuously learn, and learn faster due to digitalization and the increased speed of technology invention. Hence, an interesting topic for future research would be to examine what constitutes fast learning considering digitalization within the telecommunications industry, and how learning efforts should be organized. Furthermore, tightly connected to the area of learning is the concept of unlearning which was brought up by several academics, as well as discussed in the report. As a future research topic, it would be interesting to examine more in detail regarding the concept of un-learning, how it takes place and what an organization should promote to achieve a culture supporting this.

It was evident in this research that culture is one of the major aspects to consider for driving digitalization, and it was highlighted both internally at Alpha and externally by academics that cultural change within organization is a necessity to be successful with digitalization. Hence, it can be argued that the area of change management is tightly connected to any digitalization endeavour. Although touched upon in this thesis, an interesting topic for academia to consider would be to examine the process of digitalization within long-established technology-centred organizations, how it should be structured, and important aspects to consider.

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Appendix A – Interview Guide for Academic Interviews

Regarding the following interview guide, is was solely used for interviews with academics, as described in Chapter 3. The main purpose of having an interview guide was to provide a structure for the discussions, mainly assuring that the responses from the respondents were somewhat comparable, although the interviews themselves were kept as a flowing conversation. The interviews always started with an introduction of the thesis and its purpose, providing a context for the respondent.

Digitalization

- How would you define Digitalization?
- What does a company need to do to successfully drive and manage Digitalization?
- How will Digitalization impact a company?
- In what way will Digitalization impact the people within a company?

Competence Areas

- What competence areas do you think will be important considering Digitalization?
- Could there be any challenges in obtaining these?
- Will any competence areas become obsolete?
- Will any competence areas become valuable?
- If there exist any competence areas of increased importance considering Digitalization, how do you think that this need should be covered?

Competence Management

- Many companies organize their individuals using specific Job Roles and competence profiles. Do you think that Digitalization will drive a change that requires organizations to change this way to organize?
    - Why?
    - How should it be structured instead?
- Often included in Competence Management are the areas of Learning and Competence assessment. Do you think these will have change considering Digitalization?
    - Why?
    - How should it be structured instead?
- In general, what do you think about the area of Competence Management considering Digitalization?

Appendix B – Interview Guide for Alpha Employees

Regarding the following interview guide, is was solely used for interviews with employees of Alpha. The purpose of holding these interviews was to define how Digitalization would impact Alpha's Competence Management. The reason of having an interview guide was to provide a structure for the discussions, mainly assuring that the responses from the respondents were somewhat comparable, although the interviews themselves were kept as a flowing conversation. However, depending on the profile and field of employment of the respondent some questions were altered or left-out. The interviews always started with a brief introduction of the research scope and purpose, as well as general questions regarding digitalization within the company and current initiatives.

Competence Areas of Increased Importance

- From your perspective, what do you think will be important competence areas for Alpha Service Delivery, due to Digitalization?
- How do you think that new competence areas should be included in the organization?

Functional Competence

For this segment, we asked the following questions to people that were knowledgeable within some of the competence areas of either: analytics, business models, as well as security and privacy concerning data. Depending on the persons profile, the questions were altered to fit respective competence area.

- Can you describe what this area means for Alpha currently?
- What competence do you think will become important within this area for Alpha SD concerning Digitalization?
- How do you work to develop this area and the competence therein?
- What needs to be done long-term to ensure that Alpha SD has these competences?

Individual Attributes

For this segment the researchers explained briefly that from academic interviews it had been detected that certain individual attributes would increase in importance considering management of Digitalization. The following questions were therefore asked to gain understanding in how Alpha works within this competence area.

- How do Alpha SD manage and work with this type of competence currently within the organization?
- How could increase focus be achieved on these aspects throughout the whole organization?
- How can Alpha promote people to utilize their behavioural competences more?

Competence Management within Alpha

For this segment the focus was to achieve an understanding on how the competence management was currently organized within Alpha Service Delivery, but also understand what areas of improvement could be identified within this domain. Furthermore, depending on the interviewee the questions were adjusted between gaining a thorough understanding in the field, but also collect general opinions.

Job Roles and Competence Profiles

After an initial discussion presenting some key findings from academic interviews as well as the extensive literature review the following questions was asked to gain an understanding of the concept of Job Roles, level of detail, and focus of personal interests within the competence profiles.

- What do you think concerning the concept of organizing people with Job Roles and competence profiles?
- What do you think about the level of detail for Job Roles and competence today within Alpha SD?
- Is it easy/hard for Alpha SD's competence management framework to handle changes in the environment?
- Currently within Alpha, for an employee's competence profile and competence development. How much consideration is taken to the specific interests of the employee?
- Is it possible to highlight areas of interest and get opportunity to develop within them?

Learning

After an initial discussion presenting some key findings from academic interviews as well as the extensive literature review the following questions were asked to gain an understanding of how learning and development is organized and if there are alignments to the opinions of the academics. Initially, it was explained that two main concepts had been discovered through previous interviews and literature namely: Learning faster and unlearning, both important considering Digitalization.

General

- How is learning currently taking place within Alpha?
- What kind of different learning opportunities exists within the organization?

Increased Speed of Learning

- Do you feel that the culture promoting fast learning exists within Alpha?
- Is increased speed of learning something Alpha considers when developing new learning materials/courses?

Unlearning

Initially, the concept of unlearning was presented to the interviewee, followed by the following questions:

- Do you feel that the concept of unlearning is present within Alpha today?
- Do you consider this aspect important for Alpha to promote?

Learning Environment and Learning Incentives

- How does Alpha SD strive to create a learning environment promoting development of employees?
- In your opinion, how is such an environment developed?
- Are you working with any learning incentives currently within Alpha?

Competence Assessments

After an initial discussion presenting some key findings from academic interviews as well as the extensive literature review the following questions were asked to gain an understanding of the concept and opinions concerning competence assessments within Alpha.

- What do you think about the current assessments used within Alpha SD?
- In your opinion, considering what we just presented, what do you think it will imply for the assessment types?

Strategic Competence Management and Collaboration

After an initial discussion presenting some key findings from academic interviews as well as the extensive literature review the following questions were asked to gain an understanding of the concept and opinions concerning the strategic competence management within Alpha, as well as possibilities for external collaboration.

- How does Alpha SD define and detect what competence areas that will be needed in a long-term perspective?
- How much focus is within the organization of collaboration with external parties?