

Shoemaker's Children

A qualitative study on digital disruption's effect on a multi-professional service firm's renewal initiative of digital knowledge

Louise Lundqvist (23245)

Abstract:

The fourth industrial revolution is here, causing digital disruption of knowledge-intensive firms including professional service firms. As a result, these firms need to strategically renew their digital knowledge base to remain a relevant actor on the market. This study aims to contribute to the two rather unexplored research silos of digitalization and professional service firms by combining the two and fill an identified knowledge gap. The gap refers to research on how multi-professional service firms renew their digital knowledge due to disruption and how it may differ across professions. An interdisciplinary framework that bridges multiple research fields deemed suitable. The theoretical fields include strategic renewal, service climate, human resource development, exploration versus exploitation and service intelligence. A case study on one of the Big Four Firms serves as empirical focus in this qualitative study. The reason for this choice is to provide deeper and more detailed understanding for this nascent research area. Through an interplay between theory and empirical data, my results suggest that a multi-professional service firm should engage in HRD activities and focus on the leaders, rewards and technological readiness to foster a service climate that renews the digital knowledge base. The results suggest that there is a discrepancy in prioritization of building knowledge depending on if it is for internal or external purposes. Furthermore, different professions adopt and prioritize knowledge building differently depending on their level of service intelligence and their experience of digital disruption. This in turn affects their sense of urgency for renewal of the digital knowledge base.

Number of words: 19,994

Keywords: Digital Disruption, Professional Service Firms, Strategic Renewal, Service Climate, Human Resource Development, Service Intelligence

Supervisor: Professor Frida Perner, Department of Management and Organization

Acknowledgements

Firstly, I would like to express gratitude to all people that have made this research possible.

I want to thank all participants for their immense collaboration and engagement throughout this process. Much appreciated that you took your time and shared your invaluable and fascinating insights and extensive industry experience that made this paper possible.

My study would have not been the same if it was not for my extremely helpful and supportive supervisor, Professor Frida Perner. You made the entire process much more enjoyable with your discussions, inspiration, feedback and involvement.

Lastly, I would like to thank Josefina Hagberg and my family for vital input throughout the process, feedback and proof-reading.

Table of Content

Acknowledgements	1
Table of Content	2
List of Figures	5
List of Tables	5
Definitions	6
1. Introduction	8
1.1 Background	8
1.2 Problem Discussion	9
1.3 Research Gap.....	10
1.4 Purpose and Research Question	11
1.5 Expected Contribution.....	11
1.6 Delimitation.....	12
1.7 Research Outline	12
2. Literature Review	14
2.1 Digitalization	14
2.2 PSFs.....	15
2.3 PSFs in a Digital Setting	18
2.4 Digitalization of Services	19
2.5 Synthesis of Literature Review	19
2.6 Identified Research Gap	19
3. Theoretical Framework	22
3.1 Strategic Renewal as a Response to Digital Disruption	22
3.1.1 Tension Between Exploration and Exploitation due to Strategic Renewal	23
3.2 Human Resource Development Concept.....	24
3.3 Service Climate	25
3.4 Interdisciplinary Framework: Bridging Research Fields.....	25
4. Methodology	28
4.1 Scientific Approach.....	28
4.1.1 Research Philosophy	28
4.1.2 Scientific Research Approach	28
4.1.3 Research Method	29
4.1.4 Research Design: Case Study	29
4.1.5 Choice of Company	29
4.2 Data Collection and Analysis	30
4.2.1 Initial Data Collection	30

4.2.2	Participant Sample.....	31
4.2.3	Semi-Structured Interviews.....	32
4.2.4	Interview Guide.....	32
4.2.5	Interview Setting.....	33
4.2.6	Data Processing and Analysis.....	33
4.3	Data Quality Assessment.....	35
4.3.1	Credibility.....	35
4.3.2	Transferability.....	35
4.3.3	Dependability and Conformability.....	36
4.3.4	Authenticity.....	36
5.	Empirical Results	38
5.1	How the PSF Renew Their Knowledge Base on an Organizational Level.....	38
5.1.1	New Digital Roles and Expert Groups Centered Around Digital Knowledge.....	38
5.1.2	Change in Recruitment Profiles to Include People with More Technical Backgrounds.....	39
5.1.3	External Knowledge Acquisitions and Alliances.....	39
5.1.4	Utilization of the Existing Career Development Channels to Broaden and Share Digital Knowledge.....	40
5.1.5	Change in Mandatory Training Agenda and New Digital Training Initiatives.....	40
5.1.6	Leader's Sense of Urgency on Digital Disruption as a Phenomenon.....	41
5.1.7	The Leader's Communication of Vision and Prioritization.....	41
5.1.8	The Partners' Need for Immediate Kick-Back on Investments.....	42
5.1.9	Younger People are Typically More Interested and Willing to Adopt New Digital Knowledge.....	42
5.1.10	High Occupancy Rate is Rewarded Over Digital Knowledge Building.....	42
5.1.11	The Mandatory Elements of Work is Prioritized.....	43
5.2	To What Extent Different Service Lines Adopt and Apply Digital Knowledge.....	43
5.2.1	The Client Demand and Digital Competitors Set the Knowledge Agenda.....	43
5.2.2	Prioritize Short-Term Gain from Cash-Cow Projects or Long-Term Investments for the Future.....	44
5.2.3	Prioritize Client's Knowledge Need Over Internal Knowledge Development.....	44
5.3	All Service Lines Have Different Abilities and Need to Adopt Digital Knowledge.....	45
6.	Analysis	47
6.1	Tailoring the HRD and Service Climate on a Firm Level to Build Digital Knowledge Expertise.....	47
6.1.1	Customized Initiatives Through Organizational Development and Training to Encourage Digital Competence Building.....	47
6.1.2	Service Climate Acts as Determinant for the Extent of Digital Knowledge Renewal.....	48
6.2	Affiliated Decision of Balancing Exploitation and Exploration in the Process Step of Strategic Renewal.....	50

6.3 Different Prioritizations for Internal Versus External Knowledge Building.....	51
6.4 Different Professions' Service Intelligences Determines Their Degree of Adopting Digital Knowledge and Prioritization of Renewal	52
7. Discussion.....	54
7.1 Theoretical Implications.....	54
7.2 Conceptual Model	56
8. Conclusion.....	58
8.1 Key Findings	58
8.2 Managerial Implications.....	58
8.3 Theoretical Contributions.....	59
8.4 Limitations.....	60
8.5 Future Research.....	60
9. References	62
10. Appendix	74
Appendix 1: List of Interviewees	74
Appendix 2: Used Interview Guide.....	74
Appendix 3: Data Structure.....	76

List of Figures

Figure 1: Identified research gap.....	11
Figure 2: The four stages of digitalization.....	15
Figure 3: Characteristics of a PSF.....	17
Figure 4: Delimitation and scope of the paper.....	21
Figure 5: Strategic renewal and its sub-processes.....	23
Figure 6: HRD and its sub-areas.....	25
Figure 7: Theoretical framework.....	27
Figure 8: Abductive approach.....	29
Figure 9: Data collection process.....	30
Figure 10: Interview process.....	33
Figure 11: Data analysis process.....	34
Figure 12: Data structure.....	34
Figure 13: Link between empirical findings and HRD.....	48
Figure 14: Link between empirical findings and service climate.....	50
Figure 15: Link between empirical findings and strategic renewal.....	51
Figure 16: Link between empirical findings and internal versus external knowledge building.....	52
Figure 17: Link between empirical findings and service intelligence.....	53
Figure 18: Difference in adaptation and prioritization.....	54
Figure 19: Comprehensive conceptual framework.....	57

List of Tables

Table 1: Classic- versus neo-classic PSFs.....	18
--	----

Definitions

Data Analytics – Referred to “*the science of examining raw data to conclude information.*” This can be done by applying algorithmic processes to run through numerous data sets to obtain meaningful conclusions and correlations. (Monnappa, 2020)

Artificial Intelligence (AI) - “*Artificial intelligence is a computerized system that exhibits behavior that is commonly thought of as requiring intelligence.*” (van Duin & Bakhshi, 2017)

Machine learning – Refers to the process where a computer “*distill regularities from training data.*” Machine learning lays the foundation for most AI systems. (van Duin & Bakhshi, 2017)

Robot Process Automation (RPA) – Refers to one type of automation that uses software bots to automate routine tasks of repetitive nature that is usually performed by knowledge workers. (IBM, 2020)

Multi-PSFs – Refers to a professional service firm that has multiple professions in it.

Digital knowledge – Knowledge concerning digital tools and applications and how it might be used.

Internal knowledge – Expression used in this study for the knowledge that is needed to improve internal processes and how the professionals work is done. For instance, how the internal work procedures can be performed in an easier and faster way.

External knowledge – Expression used in this study for the knowledge that is required to deliver the service to the client. This typically refers to the knowledge that is needed in the service. For instance, knowledge on how AI can improve the product mix for a client.

Capital intensity – Von Nordenflycht (2010) associate PSFs with low capital intensity. Capital intensity is when the main output and service/product delivery is heavily dependent on non-human assets like inventory and equipment.

Knowledge intensity - Von Nordenflycht (2010) associate PSFs with high knowledge intensity. The term refers to when the delivered service/product is dependent on expertise and knowledge (Winch & Schneider, 1993).

Professionalized workforce - Von Nordenflycht (2010) characterizes PSFs as having a professionalized workforce. The term refers to having a specific knowledge base; that there is control and regulation over that knowledge; and an ideology associated with that profession exists (Torres, 1991).

Big Four - The Big Four Firms is a frequently used term for the four largest accounting and Professional Service Firms in Sweden; PwC, Deloitte, EY, and KPMG.

Service line – Refers to different lines of business in an organization, also referred to as division.

Finance – Generic collective name for divisions that works with corporate finance and transaction services.

Consulting – Generic name for a division that offers management consulting services.

Assurance – Generic collective name for divisions that provide accounting services.

Legal – Generic collective name for divisions that offer legal and tax services.

Digital Leader – Connotation for a person that have been chosen to work as a representative for their geographical region on digitalization.

1. Introduction

The digital age is here; causing a fourth industrial revolution that can fundamentally transform how business is done and ultimately challenge the very idea of humankind (Deloitte, 2017). This groundbreaking paradigm shift for humanity is likely to disrupt even large incumbent firms and how they provide professional services (Schwab, 2017; Mezghani & Aloulou, 2019). Yet, limited and fragmented research is done on this theme (Hausberg et al., 2019; Liu et al., 2018). Practitioners possess finite insights on how to adjust accordingly to remain relevant in a digital era centered around technology. As a result, additional research is merited.

The following chapter provides a background to this new phenomenon, problem discussion and an identified research gap. Additionally, the research questions, purpose and expected contribution, delimitation and outline of the thesis are explained.

1.1 Background

We are currently living in a digital age (Lorentz et al., 2015), where technology is shaping societies through enhancement of connectivity, changed educational focus, financial inclusion and job transformation (Mühleisen, 2018; UN, 2020). At the same time, businesses and organizations are becoming disrupted (Tihinen et al., 2016). One distinguishing characteristic of this time is the ubiquitous and omni-present force of digitalization that enables rapid transformation of technological capabilities. Another aspect is the force of globalization that is increasing competition by enabling disruptive new actors to penetrate the markets (Westerman et al., 2011). Both factors are challenging large organizations to rely more on technology to avoid competitive obsolescence (Murray, 2015; Fitzgerald et al., 2013). Consequently, companies are currently discovering new technologies such as artificial intelligence (AI), machine learning, and robotics at a rapid pace. Emerging technology is playing a central role in the digital revolution, penetrating unexpected industries, markets and businesses (Brynjolfsson & McAfee, 2011; Ebert & Duarte, 2016).

There is a debate amongst researchers as to whether this revolution can be seen as a benefit or a peril. Some researchers debate that it will increase productivity of labor, create new types of jobs (Brynjolfsson, 2017) and enable new services through innovation and scaled service delivery (The Telegraph, 2018). This in turn can free workers time to focus on more advanced and analytical tasks (World Economic Forum, 2017). On the other hand, some researchers reason that the technology will replace workforce and thus cause increased unemployment, stagnating wages and income inequality (Ford, 2015).

This technological shift has already reached the work-intensive firms (Frey & Osborne, 2013) where standardized working tasks within manufacturing have been automated by technology (Chui et al., 2017). Recently, also knowledge-intensive, expert-based and customized service firms have started to become affected (Chui et al., 2015; Autor & Dorn, 2013). The service industry is “*at an inflection point*” (Wirtz et al., 2018) wherein service industries will need to go through crucial transformations to meet this potential threat of disruption (van Doorn et al., 2017). One evident shift is that repetitive and predictable tasks within these professions are

becoming automated by technology. As a result, entire business models and revenue streams have changed within knowledge-intensive services (The Telegraph, 2018).

In fact, professional services are one of the industries that will be the most shaped by digitalization (Manyika et al., 2013). The professional service firms (henceforth PSFs) will be disrupted (Marsh, 2018; Brynjolfsson & McAfee, 2016) to different degrees. New digital competitors are entering the market and thereby imposing a challenge on the large incumbent firms that then have to deliver more value with less resources (SAP, 2017). Traditional PSFs are not generally innovative by nature, which forces them to change and renew themselves to stay relevant (Reihlen & Werr, 2012; Andersson & Rosenqvist, 2018).

To succeed, companies have to rethink their business to become digital and change their operations from being manpower-centric to technology-centric (CFB Bots, 2018; World Economic Forum, 2018). Large firms like the Big Four (PwC, EY, Deloitte, KPMG) also need to rethink their knowledge and talent base to become more technology-focused (Agnew, 2016). The question is how these large incumbent PSFs will manage to renew their knowledge and talent to remain relevant in a digital age that is currently causing a disruption of their profession.

1.2 Problem Discussion

One can conclude that the radical changes associated with the technological revolution such as a new competitive landscape, task automation and digitalization are likely to be inevitable (Manyika et al., 2017). Even the relationship with customers has changed, where clients demand faster and cheaper services as a result. Therefore, it is not a question *if* professional service firms and their knowledge will be disrupted, but *when* and *how* they will cope with it and transform (Schwab, 2017). Given that knowledge is the core resource in knowledge-intensive firm like PSFs, the primary challenge due to disruption lies in how they build and adopt new digital knowledges to remain relevant on the market (Verhoef et al., 2019). Especially, since research indicates that the large incumbent firms are struggling to incorporate and exploit these new emerging technologies compared to new entrants (Hill & Rothaermel, 2003; Tripsas & Gavetti, 2000). Indeed, adaptability and agility are two identified factors for high-achieving businesses in industries that are being digitally disrupted (World Economic Forum, 2017). As a result, it is becoming even more critical for PSFs to adapt and explore knowledge that is needed for these new technologies whilst exploiting existing knowledge required for their traditional services (Schwab, 2017).

Knowledge-intensive services represent an imperative part of the European economy (Muller & Doloreux, 2007). Moreover, PSF has embodied one of the most momentous, fast growing and profitable sectors in the global economy during the past three decades (Empson et al., 2015). According to Sharma (1997) “*business as we know it would come to a grinding halt*” if it was not for PSFs. They also play an imperative role as societal contributors with human capital, business services and setting the professional standards (Sharma, 1997). Any change in the professional service industry is consequently creating a substantial impact on multiple stakeholders and society at large. As a result, further research on PSFs is merited and interesting

given the extensive practical contribution to multiple stakeholders, being in the industry, society and the economy at large (World Economic Forum, 2017).

1.3 Research Gap

Given the fact that the fourth industrial revolution and digitalization are relatively new phenomenon that is unfolding just now (Schwab, 2015), there is limited research in this field. The nascent nature of the phenomenon has resulted in incompleteness of empirical studies that explore how this disruption unfolds in practice (Smets et al., 2017). Therefore, more research is necessitated to comprehend the technological paradigm shift that is likely to be inevitable and already on its way (Susskind & Susskind, 2015).

Researchers address the fact that the fourth industrial revolution is knowledge-based, disrupting predominantly knowledge-intensive actors like PSFs (Susskind and Susskind, 2015). This revolution will require companies to develop new technical knowledge and skills (MinHwa et al., 2018). Yet, the limitation of past research on digital disruption and its effects on knowledge is especially prevalent for large incumbent firms, like PSFs (Skjolsvik et al., 2018).

There is even more substantial lack of research that covers organizations with multiple professional services in one, called multi-PSFs, and their discrepancies in how different professions adopt new knowledge accordingly. The few prior studies on PSFs in a digitalization context focus primarily on mono-professional firms that includes one type of profession, for instance law firms (ibid; Kronblad, 2019). and accounting firms (Carlsson-Wall & Strömsten, 2018; Drott & Reinhold, 2019;). Therefore, further research on multi-professional firms is desirable to contribute with deeper and richer theoretical and practical implications on the reason for discrepancies across professions whilst being in the same organizational setting. The organizational setting creates the same overarching preconditions in terms of culture, values and brand, and can instead focus solely on the professional discrepancies.

In addition, a considerable amount of firms in other industries are also organized in a similar structure as multi-PSFs, with business areas and a so called matrix organization structure (Bazigos & Harter, 2016). All of these divisions in turn are affected differently by digitalization and hence react differently, which is something the leadership needs to consider and incorporate in their strategies for renewal.

To my knowledge, no previous management research has been conducted on how a large incumbent multi-PSFs renew themselves and their core competence (knowledge) due to digital disruption. Thus, this study aspires to synthesize coherence between theoretical research fields, fill the identified research gap and ultimately contribute with further empirical findings within the research area.

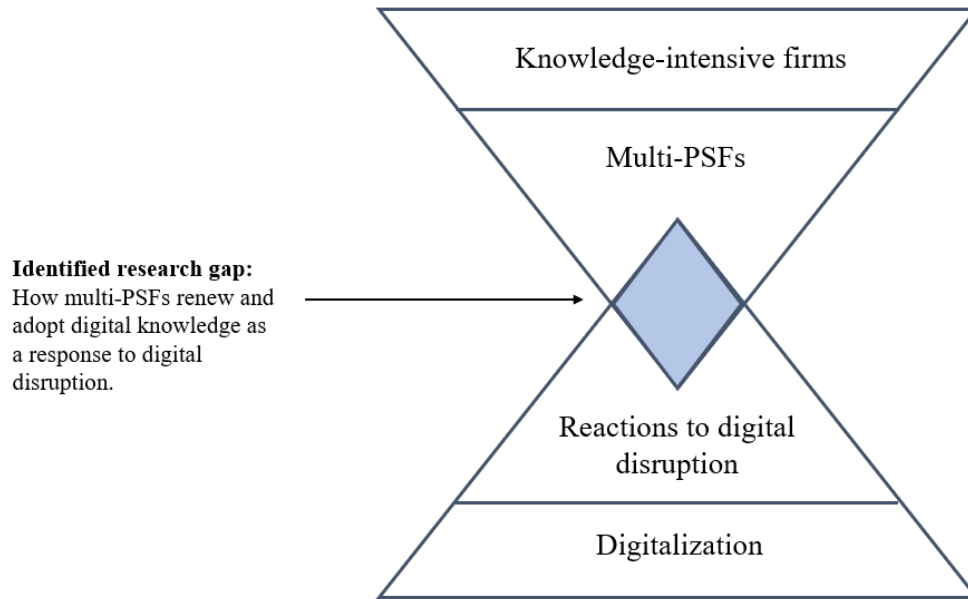


Figure 1: Identified research gap.

1.4 Purpose and Research Question

With regards to the identified research gap above, the purpose of this study is two-folded. Firstly, to examine how a multi-PSF renew its digital knowledge base as a response to the digital disruption that is taking place in the industry. However, there might be discrepancies in adoption and prioritization of digital knowledge between professions. Therefore, the second purpose is to realize how different professions prioritize and adopt new digital knowledge. Therefore, the primary aspect takes a macro-perspective on the firm at large whilst the second part analyzes discrepancies between professions on a meso-level through an intra-company perspective. In this context, the purpose of this study is to answer the following research questions:

1. *How does a multi-PSF renew its digital knowledge base as a response to digital disruption and what determines how it is being renewed?*
2. *What determines how different professions prioritize and adopt digital knowledge building as a response to digital disruption?*

1.5 Expected Contribution

Given the rather rudimental nature of existing literature, additional empirical research is needed to understand how PSFs ensure competitive relevance at a time of digital disruption (Volberda et al., 2014). Consequently, my study envisages to contribute with comprehension in academia by providing additional insights and analysis to the incomplete literature on PSFs reaction and adaptation to digital disruption. In addition, my findings aim to synthesize coherence between research fields to find explanatory value. This in turn seeks to encourage and guide other researchers to elaborate on my empirical discoveries further.

The research features multiple types of professions and services within one firm to provide a multifaceted contribution through a meso- and macro-perspective. Even though not all types of professional services are represented, professionals can still learn and draw parallels to one another and their area of expertise (Susskind & Susskind, 2015). Notably, different professions (e.g. management consultants versus accountants) are in different stages of disruption (Blix, 2015; World Economic Forum, 2017). Therefore, a multi-PSF includes several digital phenomena and reactions in the same setting, which can provide richer and deeper findings. Potential discrepancies in prioritization and adoption of digital knowledge will be explored to provide deeper understanding for practitioners and academia. Even leaders in firms from other industries with multiple professional divisions can potentially gain understanding for how to strategically renew their knowledge.

PSFs are of great economic value for the world economy (Susskind & Susskind, 2015) and have a fundamental role as societal contributors (Sharma, 1997). Academics are referring to PSF to gain comprehension on how to manage knowledge and human capital in firms generally (Donaldson 2001). Consequently, the aim of this study is also to inform a broader group of practitioners in society about the digital disruption that is taking place in one of their significant industries.

Even though the focus is on multi-PSFs, the conclusions also have broader implications for other knowledge-intensive firms (Werr & Stjernberg, 2003). From a practical standpoint, this study can provide insights on adoption to the strategic challenge of digitalization. Multiple stakeholders could therefore benefit from this study, ranging from other actors in the “knowledge economy” (Empson et al., 2015), to future recruits and talents, employees and leaders of PSFs or firms with different business areas.

1.6 Delimitation

Worth addressing is the fact that this research is limited to studying solely one case of a multi-PSF, being one of the Big Four Firms and its service lines - Consulting, Assurance, Legal and Finance. Likewise, the participants are limited to Directors, Partners and Managers with knowledge in the firms’ digital strategic initiatives or digital knowledge level. The empirical data covers solely participants from the Nordic region, making it subject to change for other regions. However, some global strategic knowledge initiatives are emphasized since they affect the local adoption and process of digital knowledge building. Moreover, the study focuses on the digital disruption stage of digitalization since that is where the knowledge-industry currently find itself in.

1.7 Research Outline

The disposition of this study aims to guide the reader through relevant sections to answer the identified research questions. So far, part 1 has presented a brief introduction to the topic. Thereafter, the research questions and its practical and theoretical contributions and delimitation were presented.

Part 2 presents a literature review on PSFs, digitalization and lastly merging the two with the aim to identify a research gap where additional research is needed. Section 3 presents a synthesized theoretical framework that will lay the foundation for the empirical research. The framework will be based on multiple research areas that were deemed suitable to answer the research questions. Part 4 justifies the methodological considerations, explains the choice of method, data collection and analysis process. Subsequently, a critical assessment of the trustworthiness of the study will be presented. Part 5 presents the collected empirical results from 24 interviews from one large multi-PSF. Part 6 analyzes the empirical data and how the firm renew its knowledge base and how the different professions adopt and prioritize it differently. The subsequent part discusses this study's theoretical contribution and derives at a conceptual model based on literature and the empirical data. The last part concludes with a summary of the findings, contributions and addresses the managerial and theoretical implications. Finally, limitations and suggestions on further research are presented.

2. Literature Review

This section presents a theoretical review of existing literature within the delimited research field of this paper. The purpose of this review is to map out and critically assess past research on digitalization and PSFs. The interconnectedness between research fields will also be presented to show evident gaps. Part 2.1 addresses the fairly nascent research topic of digitalization and digitalized services. The second part (2.2) elaborates on past PSFs research. Lastly, the integration of the two together with a literature synthesis will be presented to indicate a research gap. Thus, the purpose of this review is to derive the identified research gap that will be saturated through this study.

2.1 Digitalization

In order to understand the adoption of new digital competences and skills in PSFs, the digital paradigm including digitalization needs to be elaborated on. Organizing structures, business logics and society have been pervasively impacted by digitalization (Nylén, 2015). Due to the nascent and elusive nature of digitalization, there is ambiguity amongst researchers regarding the exact definition of the term (Srai & Lorentz, 2019). Therefore, a lot of extant literature focuses primarily on clarifying the concept. Rachinger et al. (2018) defines the term as a process that opens up for creation of fundamentally new products, services and business models by combining different technologies such as 3D printing, big data etc. Schumacher et al. (2016) state that digitalization refers to the social and cultural outcomes that is derived from having increased availability of and access to digital elements and information. Moreover, the emerging digital technologies create value-producing opportunities for organizations (Gartner Glossary, 2018) and concurrently increase the industry competition (Porter & Heppelmann, 2014). As a result, there is a new era of competition where the competitive advantages are being redefined (ibid).

Another area of the research accentuates the different stages of digitalization. There are four phases, i) *digitization*, ii) *digital automation*, iii) *digital transformation* and iv) *digital disruption* (Loebbecke & Picto, 2015). The first one, digitization is the “*straightforward process of converting analog information to digital*” (Gobble, 2018). The second aspect; digital automation refers to the usage of software and technology to achieve a procedural result without human assistance (Groover, 2001). Often automation improves inefficient manual handling and increase consistency and accuracy by automating processes (Schumacher et al., 2016). Thirdly, the digital transformation stage refers to the change of business models and businesses (Andal-Ancion et al., 2003). The usage of new digital technologies is a key enabler to seize additional business opportunities (Ramaswamy & Ozcan, 2016). Moreover, it leads to major business improvements such as more streamlined operational functions and improved customer experiences (Fitzgerald et al., 2013). Transformation however is a pervasive concept with “*combined effects of several digital innovations*” including digital disruption (Hinings et al., 2018). Finally, digital disruption is when there is a vast change in competition and market structure. More importantly, it is when existing market players need to embrace new

technologies and innovations or otherwise become replaced by new companies (Christensen, 1997; Bradley et al., 2015).

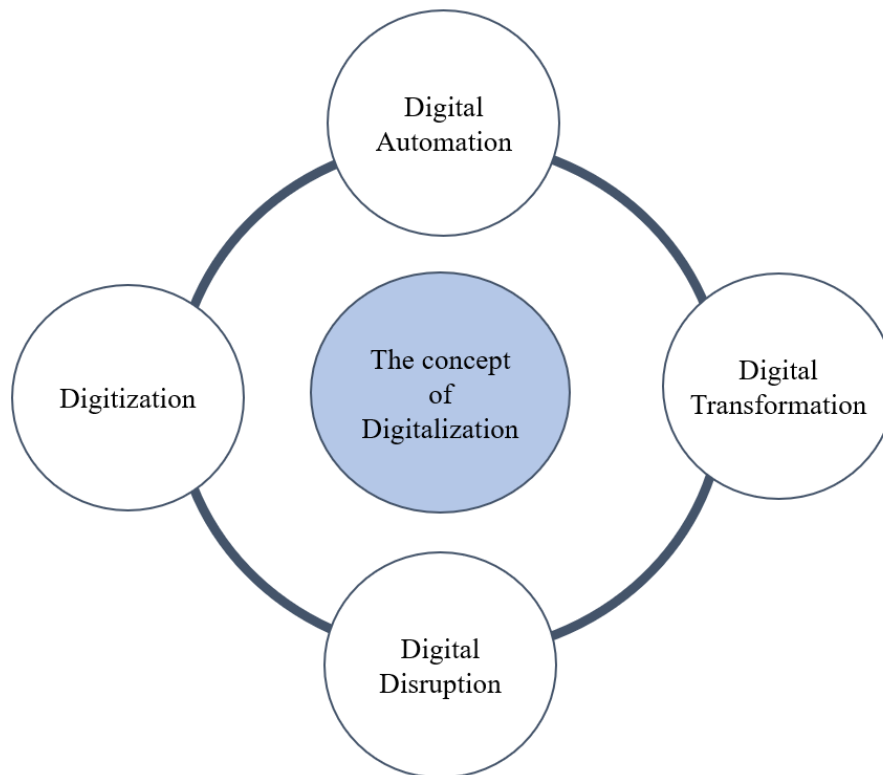


Figure 2: The four stages of digitalization.

2.2 PSFs

PSFs have been a relatively unexplored research subject in the past due to the unclear definition and scale of the industry (Empson et al., 2015). Scholars have had difficulties agreeing on a unified definition and have used the term to explain organizations in over 30 knowledge-based sectors (Von Nordenflycht, 2010). Some examples of PSFs are management consulting, technology firms, law, accounting and advertising agencies (Greenwood et al., 2006). Eventually, once the prevalence of knowledge-intensive firms started to take shape and the management consulting industry rapidly expanded, the attention for PSFs in academia followed (Von Nordenflycht, 2010). In addition, PSFs clear societal and economical significance increased the research interest further since the industry contributed with an amassed part of the value creation and employment in Western economies (Löwendahl, 1997). As a result, PSFs as research object gained momentum from scholars within the management field from the 1990s and onwards (Cooper et al., 1996; Hinings et al., 1991; Maister, 1993). During the past three decades, PSFs have developed into one of the most significant, profitable and fast-growing sectors in the global economy (Empson et al., 2015). As a result, academics are addressing PSFs as a research object to understand the increasing significance that human capital has on organizations (Blair & Kochan, 2000; Rajan & Zingales, 2000).

One significant PSF research area within organization and management theory is the discussion of the organizational form and ownership. Most common in the past has been the professional partnership model, also called P2 (Greenwood et al., 1990) wherein PSFs are systematized under a distinctive set of governance arrangements independent of legal form (Empson &

Chapman 2006; Lorsch & Tierney, 2002). The Partners are leaders and own stakes in the firm (Baaij, 2013). The P2 setting allows the leaders to independently decide how work should be conducted (Greenwood & Suddaby, 2006).

Given the unclear definition of the term, an extensive part of the management literature is focusing on defining the characteristics of PSFs (Empson et al., 2015). There are multiple definitions of the term, but one of the most widely referred to and recent ones is made by Empson et al. (2015). This definition incorporates previous researchers and their identified characteristics within the PSF research field, which is why this one is of interest. Empson et al. (2015) develops Von Nordenflycht's (2010) distinctive characteristics of a PSFs, being knowledge intensity, professionalized workforce and low capital intensity but adds identity, governance and customization.

i) Primary activity

According to Empson et al. (2015), the usage of specialist knowledge to offer customized resolutions to clients and their challenges is the foundation of a PSF. However, this aspect excludes financial service firms since they are contingent upon significant capital reserves and generic knowledge-intensive firms (offering software and pharma/biotech).

The service delivered by PSFs is an intangible and experiential one that often includes customer-tailored knowledge-rich and time-limited advice (Morris & Empson, 1998; Brivot, 2011). As a result, limited economies of scale and up-scale potential can be achieved (Castaldi & Giarratana, 2018). The reason being that these types of services are considered having *"higher relational embeddedness and context sensitivity"* than other more standardized service offerings (Empson et al., 2015).

ii) Knowledge

The primary resource in a PSF is the professionals in the firm with their specialist expertise, know-how and knowledge of their own clients. All of this enables co-production of knowledge between the clients and the professionals, the latter being able to share learnings by applying their technical expertise on the clients' firm.

iii) Governance

Individual autonomy and managerial authority are expected within a PSF together with a low degree of authority and intervention of others. The professionals in the firm can decide themselves how to best use their expert knowledge to offer a customized solution for their clients (Falconbridge & Muzio, 2008). A high level of teleological and technical autonomy (control over both ends and means) is therefore desirable.

iv) Identity

Empson et al. (2015) define the PSF as a place where professional identities are formed and shaped. Employees in a PSF acknowledge one another as professionals. This in turn is reinforced by the competitors and clients. The professionalism can be acquired through extensive education and training or through socialization into the professional standards of behavior. The service is delivered by extremely skilled employees (Castaldi & Giarratana,

2018). PSFs are usually recruiting highly professional and educated workforce from elite Universities and offer high salaries, making them preferred employers (Maister, 1993; Universum, 2018).

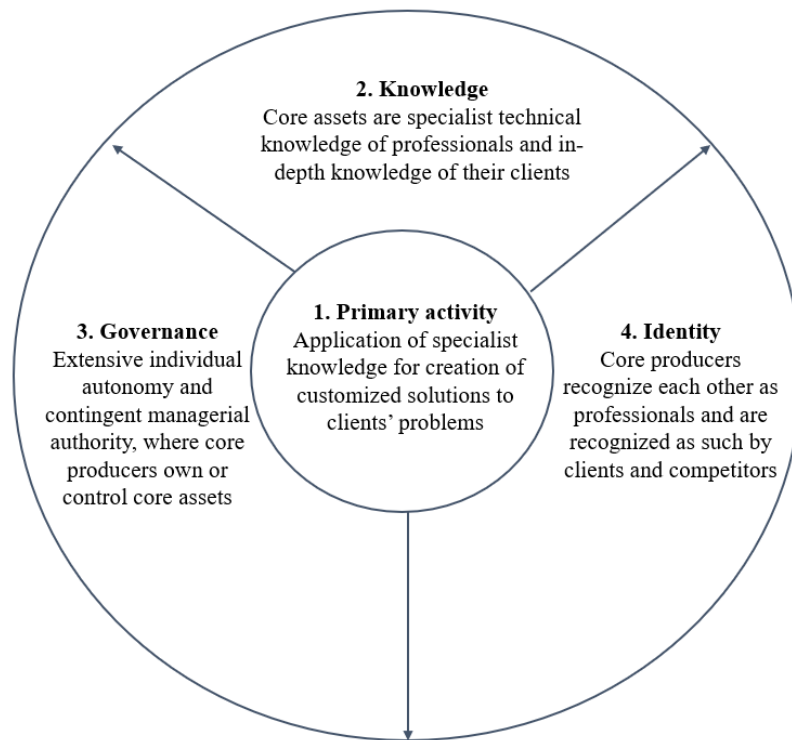


Figure 3: Characteristics of a PSF according to Empson et al. (2015).

Empson et al. (2015) acknowledge the heterogeneity and varying degrees of these characteristics depending on different types of PSFs. However, the authors argue that a PSF must have all four of them to some extent to be defined as a PSF.

v) Classic versus neo-classic PSFs

Von Nordenflycht (2010) goes beyond the definition and distinguishes between different types of PSFs with different degrees of intensity in the characteristics facing a firm. *Classic PSF* is the archetypical one with the highest degree of professional service intensity. This type of firm typically has high knowledge intensity, low capital intensity and a highly professionalized workforce. Some examples of this are law and accounting firms that are often regulated by well-developed institutions of professionalism (Reihlen & Werr, 2014). These firms have clearly defined knowledge standards being expressed by professional associations and mediated via educational programs. Consequently, they usually have more restricted discretionary freedom and creativity in their service delivery compared to other types of PSFs (Reihlen & Werr, 2014).

A *neo-classic PSF* on the other hand is identified as knowledge intensive, with low capital intensity and non-professionalized workforce. Some examples of professions in this category are management consultants and advertising agencies. The name represents the PSF literature shift from an era focusing on professionalism as a research topic to instead focus on knowledge intensity in broad terms. Unlike classic PSFs, this type usually lacks accepted academic

knowledge standards and practices and thus has more freedom to provide innovative services (Groß & Kieser, 2006).

	Characteristics		
Categories	Knowledge Intensity	Low Capital Intensity	Professionalized Workforce
Classic PSFs	X	X	X
Neo-classic PSFs	X	X	

Table 1: Depicting differences between classic- versus neo-classic PSFs in accordance with Nordenflycht's definition (2010).

2.3 PSFs in a Digital Setting

The digitalization that is happening in the knowledge-intensive industry is instant and rapid in its nature wherein the competitors' knowledge base and market is reshaped as a result. Of the four stages of digitalization that were identified in section 2.1, an extensive part of past literature identifies PSFs as becoming digitally disrupted (Christensen et al., 2013).

An extensive part of the extant literature addresses the urgency and need for adaptation to more digital skills and tools to remain relevant. The PSF work environment is in a state of "flux" and the professionals in the firms need to be willing to learn and adopt new knowledge and skills. Researchers indicate that professionals in PSFs need to both embrace and become adroit users of new technology and extend their area of expertise. The latter can be done through learning how to master and handle large amount of data. Researchers have therefore identified the need and a general indication of what is needed to be changed, thereabout the knowledge base. However, less research is done on practical examples of how PSFs react and renew their knowledge base. (Susskind & Susskind, 2015)

Moreover, past PSF literature focuses typically on one type of profession and its strategic change efforts occurring due to digitalization and new technology. One example being Skjolsvik et al. (2018) addressing the benefits of virtual law firms that have been created due to new technologies like AI. Moreover, the paper emphasizes strategical change into focusing on unbundled scalable tasks that can be automated instead of solely offering high-priced bundled offerings. Another example being research on robotization of routine tasks in accounting firms (Carlsson-Wall & Strömsten, 2018). The authors identify how administrative/manual tasks that knowledge workers typically perform can instead be automated by using Robot Process Automation. Students at Stockholm School of Economics have explored the accounting industry by looking through a strategic management lens and how digitalization affects the development of knowledge resources in large incumbent accounting firms in Sweden (Drott & Reinhold, 2018). Specifically, the paper identifies accounting firm's digital transformation journey by analyzing changes in their dynamic capabilities.

2.4 Digitalization of Services

Due to digitalization, the nature and execution of services will drastically change for PSFs wherein services will to some extent be performed by robots (Wirtz et al., 2018). An extensive part of previous literature addresses AI and its enablement to automate some tasks done by highly skilled workers (Chui et al., 2015). In the past, service jobs have been considered more difficult to automate than manufacturing jobs due to their need of contextual understanding (Autor & Dorn, 2013). However, more recent research concludes that even service jobs such as portfolio managers and senior managers can be automated to different degrees through use of technology (Chui, Manyika & Miremadi, 2015).

Huang & Rust (2018) reflect on the change in how professional service work is performed by arguing that service work will be replaced by technology on a task level rather than job level. The researchers categorize different types of intelligences that professionals need for their service delivery. The four are; i) *mechanical*, ii) *analytical*, iii) *intuitive* and iv) *empathetic*. The four classifications are based on how complex it is for technology and digital tools to replace each of the intelligences. The authors conclude that AI can as of today replace a limited amount of tasks that only require mechanical intelligences with standardized and repetitive tasks. Awaited is having robots being able to deliver services that are based on the first three intelligences and that intuitive and social skills will become even more essential (Singh et al., 2017). Thereafter, the AI will be able to replace the tasks belonging to the higher level of intelligences (iii) and iv)) and ultimately human labor entirely. The implications from the research is that analytical skills will become less important since AI will be able to take on that and then the intuitive and empathetic tasks will be even more important since they are harder to automate and replicate.

2.5 Synthesis of Literature Review

To summarize, digitalization literature focuses primarily on defining the concept and identifying different stages of it depending on how it plays out. The research stream of digitalization indicates that technology enables automation of service tasks and skills that in the past have required humans' manual labor. The PSFs research stream elaborates on the characteristics and types of firms and ultimately derive at a distinction between neo-classic and classic PSFs (with the difference in professionalized workforce). Literature that is integrating PSFs in a digital setting addresses the urgency and need for adaptation and identifies *what* is needed to change due to digital disruption, which includes the knowledge base. Building on that, Huang & Rusts reflects on the "what", which is the low-level mechanical tasks that are easier to automate and replace by machine skills than tasks requiring advanced human traits. However, the research does not cover *how* the knowledge base will change and how the process of rebuilding the knowledge level in the firm will be done.

2.6 Identified Research Gap

Scholars in past literature have identified AI, machine learning and data analytics as all core technologies that are disrupting PSF in terms of performance and insight generation (World

Economic Forum Digital Transformation Initiative, 2017). In fact, these disruptive technologies accelerate the rudimentary changes in the PSF industry (World Economic Forum Digital Transformation Initiative, 2017). Notably, the nature and organization of PSF will most likely change due to digitalization (Malhotra & Morris, 2009), making it an area of interest to explore further in academia. Given the fact that the digital disruption of industries is unfolding at present, the academic research is advancing and taking shape continuously. However, past literature has had a silo-approach when it comes to digitalization's effect on PSFs and change efforts. The two research areas - *digitalization* and *PSFs* have been explored separately in academic research on the quest for congruence in a definition of the terms and processes associated with it.

As identified in past PSF literature, scholars focus solely on one type of profession across multiple firms and how the nature of their work has changed due to digitalization. The availability of research that incorporates both neo-classic and classic professions is constrained. As indicated by the literature review, there is also a lack of research analyzing how different professions in one and the same PSF react to digital disruption. As a result, further research on that matter is crucial to broaden the nascent research stream further.

When bridging the two academic silos, scholars have addressed an explicit need for adaptation of digitalization where professionals need to be willing to adjust their knowledge base and work procedures (Susskind & Susskind, 2015). Further, a multitude of academics address the fact that the need for digital knowledge will increase to grasp how organizations develop these competences (Hunton & Rose, 2010). How this digital knowledge building plays out in practice is not exhaustively addressed.

Also, scholars elaborate on how the service offerings and work tasks will change in nature, wherein mechanical tasks can be automated by technology, and thereby having the professionals focused more on the tasks that require higher service intelligences (Huang & Rust, 2018). Remarkably, there is a gap identified in how PSFs renew their core competence, knowledge, as a result of that task automation.

A research gap is therefore identified where existing theory cannot provide satisfactory answer as to how multi-PSFs renew their digital knowledge base as a result of disruption and how prioritization and adoption differ across professions in a multi-PSF, see Figure 4. The gap confirms the relevance and importance of research that elaborates both on a macro- and meso-level in a firm to better understand the effects of digital disruption.

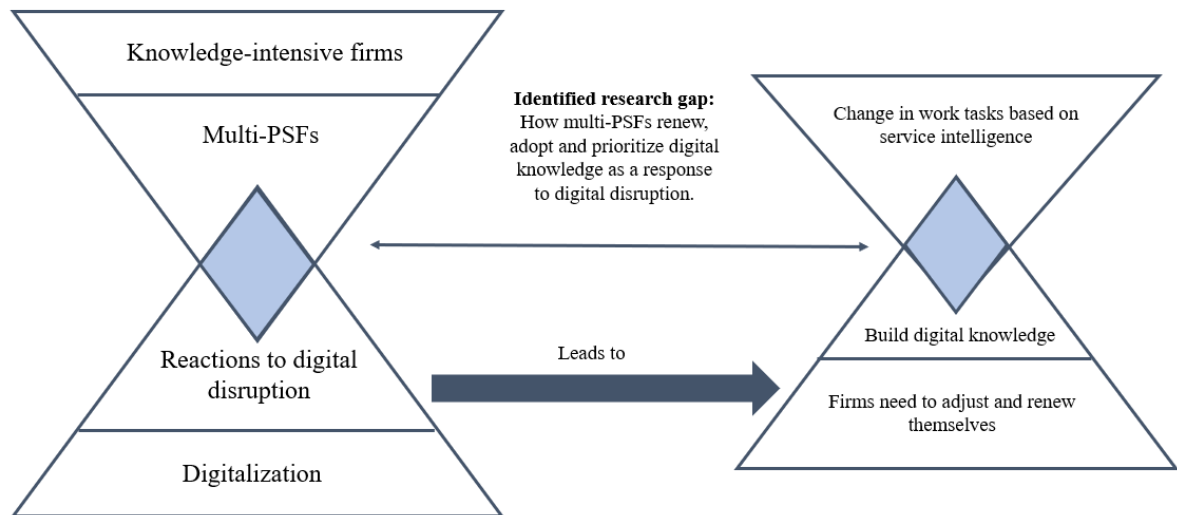


Figure 4: Illustrating the separate research approach in past literature, wherein the combined perspectives create a delimitation and scope for this paper.

3. Theoretical Framework

The following section presents a theoretical framework with the purpose of structuring the empirical findings and ultimately constitute the basis of the analysis. The interdisciplinary framework is based on past research from multiple research areas that are coherently synthesized. The theoretical concepts include strategic renewal, human resource development and service climate research. All of them have been bridged together with the aim to fill the knowledge gap and answer the research questions.

3.1 Strategic Renewal as a Response to Digital Disruption

When industries change due to digital disruption, firms need to rethink their processes, task division and how to strategically adapt to the new market conditions. In academia, some research fields explore how large incumbent firms react and reorient themselves to be able to meet the new technological behavior and market need. More importantly, a vast part of that literature links strategic renewal with digital disruption by taking an evolutionary perspective on process of change rather than a revolutionary one. (Floyd & Lane, 2000)

On a general level, the concept of strategic renewal is widely recognized across multiple research areas. However, there is a conceptual pluralism in terms of the definition of the term. One renowned definition used in this paper is referring to it as an “*evolutionary process associated with promoting, accommodating, and utilizing new knowledge and innovative behavior in order to bring about change in an organization’s core competences and/or a change in its product market domain*” (ibid). In other words, renewal refers to the idea of aligning companies’ strategic positions and core competences with the shifting environmental conditions and change in external circumstances.

Agarwal and Helfat (2009), explore the phenomenon further by dividing it into three areas, being *content*, *process* and *outcome* of renewal. The first aspect indicates *what* is being renewed. Second, focusing on the *process* of deciding and implementing the affiliated decisions of renewal. In other words, *how* the renewal initiative is done. Finally, the outcome shows what the desirable fallout and result of the renewal initiative will be.

Strategic renewal includes multiple dimensions of change including “*competition, firm resources and capabilities, organizational structure, and cognition, as well as routines and processes for decision making and implementation*”. Therefore, research on strategic renewal is likely to benefit from using multiple lenses and literature (Agarwal & Helfat, 2009).

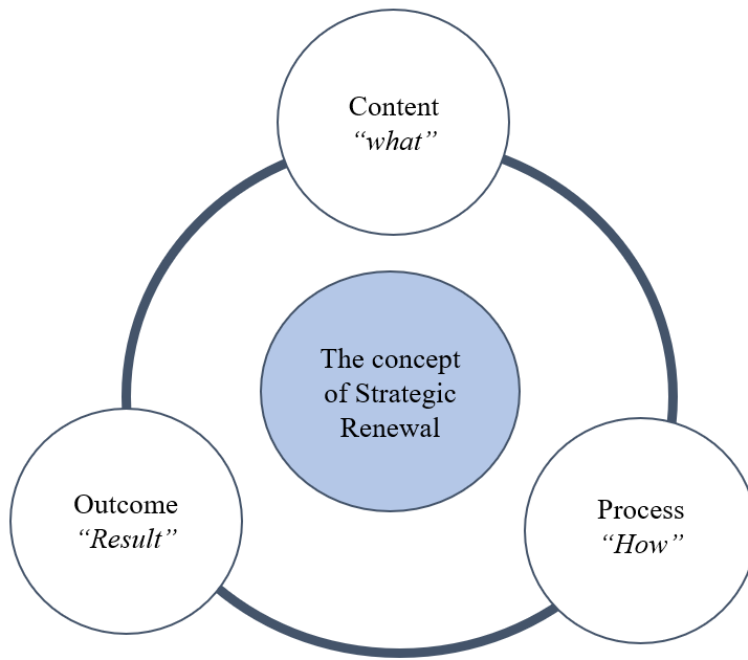


Figure 5: Strategic renewal and its sub-processes, according to Agarwal & Helfat (2009).

3.1.1 Tension Between Exploration and Exploitation due to Strategic Renewal

Multiple researchers address a critical challenge for firms going through strategic renewal. The challenge is the organizational tension of balancing exploration and exploitation of competences and resources as a result of technological development (Crossan et al., 1999). More importantly, the tension refers to the need to deploy existing competences and resources versus the need to be visionary by investing and experimenting to discover new ones for the future. March (1991) defines exploration as the experimentation, innovation and discovery of new resources. Exploitation on the other hand enhances productivity and efficiency through the usage of existing competences. Both activities are imperative for a firm's survival and prosperity (Tushman & O'Reilly, 1996). The challenge is to balance these two contradictory forces with the resource allocation constraint and the tradeoff of having present profits today versus future flexibility to adapt (Lavie et al., 2010).

Managers face a strategic role conflict of inconsistent expectations on behavior to balance the two (Floyd & Lane, 2000). Pursuing both increases the chance to overcome structural inertia and is specifically essential for companies that are exposed to environmental uncertainty and disruption (O'Reilly & Tushman, 2013). New technologies can be classified as a disruptive force and create the foundation of strategic innovation in firms' business models with decreased transaction costs and rapid connectivity (McAfee & Brynjolfsson, 2017). Digitalization requires businesses to rethink and rescope their organizational strategy and what type of tasks, including knowledge work, that could be automated to improve productivity and accuracy (Manyika, et al., 2013; Wisskirchen et al., 2017).

3.2 Human Resource Development Concept

Human resources (HR) are considered the most vital asset within an organization (Haslinda, 2009). The organizational change that occurs due to digital disruption forces firms to practice human resource development (henceforth HRD) to maximize efficiency through employee's potential, capabilities, time and talent (ibid). Especially, since HRD is essential for higher productivity, improved relations and increased profitability (Vasantham, 2015).

Initially, HR research had a functional focus on sustaining the order in the workforce through training. However, the phenomenon has expanded considerably through recent years, to not solely focus on individual training but also emphasize the development of human capital, being HRD. (Thoman & Lloyd, 2018) The term links learning and development with the strategic development of knowledge-based organizations (Beyerlein et al., 2017). More specifically, the concept identifies employees as strategic assets and emphasizes the strategic value and role HRD has for an organization's performance and ability to institutionalize change. (Thoman & Lloyd, 2018)

The definition of HRD have been discussed by many researchers in the past. The term refers to how individuals, teams and organizations change through learning (Chalofsky, 2007). More recently, Desimone et al. (2002) express it as "*a set of systematic and planned activities designed by an organization to provide its members with the opportunities to learn necessary skills to meet current and future job demands*". The desired outcome is therefore to manage knowledge better through acquiring, creating, sharing and using knowledge throughout the organization (Sunalai & Beyerlein, 2015). The referred activities can in turn be divided into three main areas (see Figure 6), being *training and development: organizational development and career development* (Swanson & Holton, 2001).

Training focuses on strengthening the knowledge and skills needed for the employees to perform their daily tasks. *Development* on the other hand focuses on general skills for the future, not necessarily linked to the current job. *Organizational development* refers to the process of developing the organization to adapt with the changes in the external and working environment, by reducing the divergence between divisions and employees. This can be done through improved cooperation and coordination across units. Lastly, *Career development* refers to the process of assessing one's own abilities and skills to establish a career plan and then executing on that plan by taking necessary steps. (Alhalboosi, 2018)



Figure 6: Illustrating HRD as a concept and its sub-areas.

3.3 Service Climate

PSFs' core business is to offer professional services, making the service climate a vital aspect to understand the underlying drivers of behavior. The service climate is defined as the *"employee perceptions of the practices, procedures, and behaviors that get rewarded, supported, and expected with regard to customer service and quality"* (Schneider, White & Paul, 1998).

There are few studies that explore the service climate on a larger scale, namely from an organizational perspective, and its impact on employees. Nonetheless, service climate can be considered essential since it dictates employees' willingness to adopt to new technologies and ultimately adapt to digital disruption. Research indicate that a strong service climate generates higher quality service and is built on interrelated acts, being leadership behavior, human resource management, received rewards and knowledge of employees. (Schneider & Bowen, 2019) The service climate is dependent on having the training, resources and managerial practices aligned to perform effectively (Schneider, White & Paul, 1998). According to Bowen and Schneider (2014), the leader can in turn contribute to a strong service climate by allocating resources to develop it.

Beyond that, individual factors also affect the willingness to adopt new technology. One example being the age where Hanson (2010) states that older people are less likely to use or be willing to use technology compared to younger ones. Therefore, in addition to the service climate, one has to consider other aspects such as age when discussing technical adoption.

3.4 Interdisciplinary Framework: Bridging Research Fields

To my knowledge, no collectively exhaustive model exists to answer the identified research questions. Therefore, I have created a theoretical framework addressing both the macro-perspective of the organization (question 1) and meso-perspective of each profession (question 2). The framework is interdisciplinary where I have integrated research from multiple fields that are deemed suitable for this purpose.

The foundation of the framework is strategic renewal, which in this study corresponds to the reaction that multi-PSFs have to digital disruption. Researchers emphasize the importance for PSFs to strategically renew due to digitalization themselves to remain competitive (Andersson & Rosenqvist, 2018; Schmitt, Raisch, & Volberda, 2016).

The focus will be delimited to the *process* part of renewal, since the aim is to understand *how* digital knowledge is renewed. The *content* aspect is identified as the digital knowledge base and the *outcome* is to reach a satisfactory level of knowledge to remain a relevant actor on the market. As stated above, strategic renewal is a rather broad theory that explains a general phenomenon. In fact, the literature elaborates broadly on multiple dimensions of change initiatives ranging from organizational structure to firm resources (Argawal & Helfat, 2009). The research does not specifically address knowledge building. Therefore, in order to understand digital knowledge building properly and on a more detailed and rich level, additional complementary theories are necessary to be applied in the framework.

To understand the process of how the digital knowledge is renewed, I have integrated HRD and service climate research. Specifically, the actions the firm takes to create a service climate that fosters digital knowledge building and HRD agenda that encourage digital expertise. The HRD aspect will be divided based on the literature - training and development; career development; and organizational development. Service climate will in turn look at the leaders' role and rewards systems that are used to (de-)motivate digital knowledge building, in accordance with literature. In addition, this paper will address the technological readiness of the firms' professionals as a factor affecting the service climate and ultimately assimilation of digital knowledge. The term refers to "*the propensity to embrace and use new technologies for accomplishing goals*" at work (Parasuraman, 2000). Thus, seen as a variable of individual nature that indicates people's attitude towards accepting new technologies (Blut & Wang, 2019).

The second research question takes a meso-perspective to give a more nuanced analysis of how the strategic renewal journey might differ across service lines. Research is deduced from the balancing act of exploration and exploitation that in turn is a tension derived from strategic renewal (Crossan et al., 1999). As past literature on this tension describes, the balancing act is between building knowledge for short-term gain of delivering services versus for the long-term gain of knowledge required in the future. This part of the literature is needed in the framework to identify how different professions and their managers face the strategic role conflict of inconsistent expectations on behavior to balance the two (Floyd & Lane, 2000). The aim with this theoretical lens is to gain more insights and the interviewees' rationale for the discrepancies in expectations between service lines on how they choose to prioritize their allocation of resources.

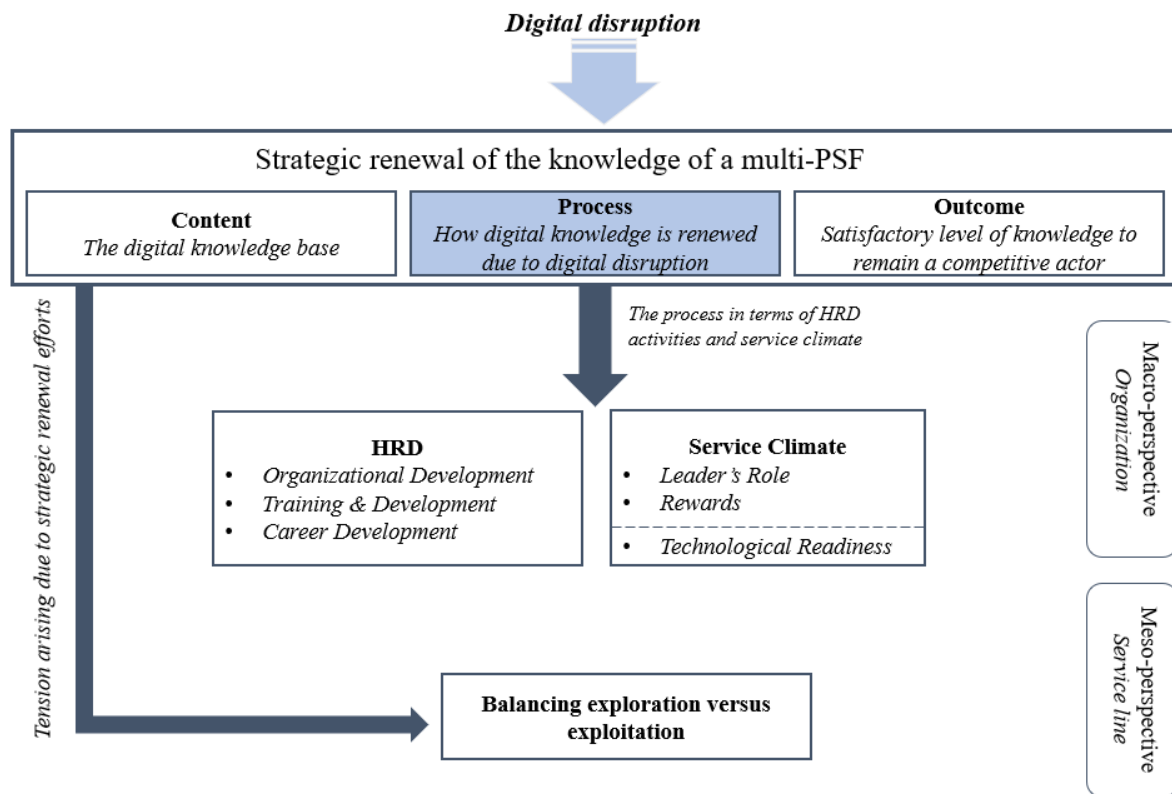


Figure 7: The comprehensive theoretical framework linking multiple research areas into an interdisciplinary model.

4. Methodology

This section elaborates on the chosen methodology that has been used. The disposition is as follows; firstly, the scientific approach (4.1) is presented, then the data collection & analysis (4.2) and finally an assessment of quality of the data (4.3).

4.1 Scientific Approach

The following chapter aims at providing a thorough motivation of the research philosophy, approach, purpose and method. Thereafter, a discussion on choice of research design and case-company is explained in greater detail.

4.1.1 Research Philosophy

The ontology of this research is based on interpretivism where the reality is socially constructed and subjectively accomplished by social actors (Bryman & Bell, 2011). As a result, this thesis aims at understanding the social construction of an organization's strategic renewal of digital knowledge based on the participant's own set of meanings and interpretations as social actors. The context itself is vital to take into consideration for explaining how digital knowledge is built. The discrepancies between service lines (research question 2) in adoption and prioritization is based on individuals' own interpretations of their setting and their view on digital disruption, which in turn dictates their choices and renewal initiatives. The situation of digital disruption of multi-PSFs is unique for each particular service line and its individuals' subjective view, which is why an interpretivist perspective is chosen.

Furthermore, there is limited past research using interpretive and descriptive approaches to highlight individual narratives as explanation factors within strategic literature, creating a need for complementary interpretative studies to the past statistical ones (Bryman & Bell, 2011). This in turn generates an epistemological view of knowledge as subjective meanings and social phenomenon with an emphasis on details of the situation at hand (Saunders et al., 2012).

4.1.2 Scientific Research Approach

Given the interpretivism philosophy, an abductive research method has been chosen where theory and empirical data interact in one iterative process of going back and forth to enable reiterations (Bryman & Bell, 2011). Due to the scarcity of previous academic research in the area, an explorative approach has been used to gain deeper insights on digital knowledge building and simultaneously determine a direction for future research (Saunders et al., 2012). In order to gain a deeper understanding, a concurrent process of theory and empirical data is deemed suitable (Alvesson & Kärreman, 2007).

An initial literature search was done to collect past literature within the research field, which then formed the foundation of the initial empirical collection. From that, I concluded that past research highlighting digitalization and its effect on PSFs and their response to digital disruption was scarce. As a result, separate research was collected of PSFs' and digitalization

as stand-alone phenomenon that formed the basis and background for the empirical data collection. Once new evidence and themes emerged from the first empirical data collection process, I switched back to theory to search for explanations and iterate the data collection process accordingly. I thereby ensured continuous dialogue between theory and empirical data, as illustrated below.



Figure 8: Illustration of abductive approach where theory and observation are explored in a “back-and-forth” way.

4.1.3 Research Method

The chosen method is a qualitative study with interviews conducted over a short period of time due to the time constraint of the thesis. Given the interpretivist research stance and the fact that the purpose of this study is to provide meaning to this particular setting of inquiry, a qualitative research method was chosen (Ketokivi & Choi, 2014). The research question aims to explain “how” digital disruption affects multi-PSFs rather than objectively measuring or subjectively assessing the firm’s strategic response to the disruption, making interviews a suitable method (Welch et al., 2011). A qualitative approach reasoned appropriate for this purpose since the phenomenon is not fully understood or explained in a multi-PSF setting in past research (Barley, 1990; Eisenhardt, 1989; Yin, 2009). Conclusively, a more open-ended approach was used where nuanced and elaborative answers can be collected to answer the complex organizational phenomena and the interviewees’ interpretation of it (Edmondson & McManus, 2007).

4.1.4 Research Design: Case Study

The main data collection source for this research is an instrumental case study of a multi-PSF with cases that are considered representative for a typical PSF (Yin, 2009). Given the contemporary and complex phenomenon, this particular method was deemed suitable (Stake, 1995). A case study method is useful to get a rich understanding of a phenomena when taking an explorative standpoint, as in this case (Eisenhardt & Graebner, 2007). Case studies are suitable for “how” questions to “deal with operational links needing to be traced over time” (Yin, 2009). Further, a case study was chosen in alignment with the interpretivist ontology to gain “*rich contextual descriptions*” of digital knowledge building and understand how it is done and decided on (Welch, 2011).

4.1.5 Choice of Company

The chosen firm constitutes one of the biggest global professional service firms worldwide, also referred to as the Big Four Firms (Doherty, 2018). The firm is based on a matrix-organizational structure, with different service lines grouped in professions. The four main ones are i) Consulting, ii) Assurance, iii) Legal, and iv) Finance. A large firm was selected because the learnings could be the greatest for this research (Bryman & Bell, 2011). The premise is that a

larger firm enables more granular understanding. In this case, providing both classic- and neo-classic professional services.

Given the identified research gap of multi-PSFs, a multidisciplinary-professional firm deemed relevant to fill the gap and contribute to research (Empson, et al., 2015). In addition, a multi-PSFs was chosen to fully understand potential discrepancies between different professions (to answer research question 2). By looking at multiple professions in the exact same organizational setting (having the overarching values, brand and culture the same) enables more evident discrepancies. Furthermore, given the time constraint of this thesis, I chose to focus on one multi-PSF instead of several to gain deeper insights.

This specific firm was elected because I have a contact within the firm, which made it easier to gain access and collect data. I contacted all the Big Four firms, and this one was the most responsive one and could provide enough interviews to gain in-depth insights.

4.2 Data Collection and Analysis

This section aims to explain the motives behind the data collection process step by step. The structure follows the process depicted in Figure 9.

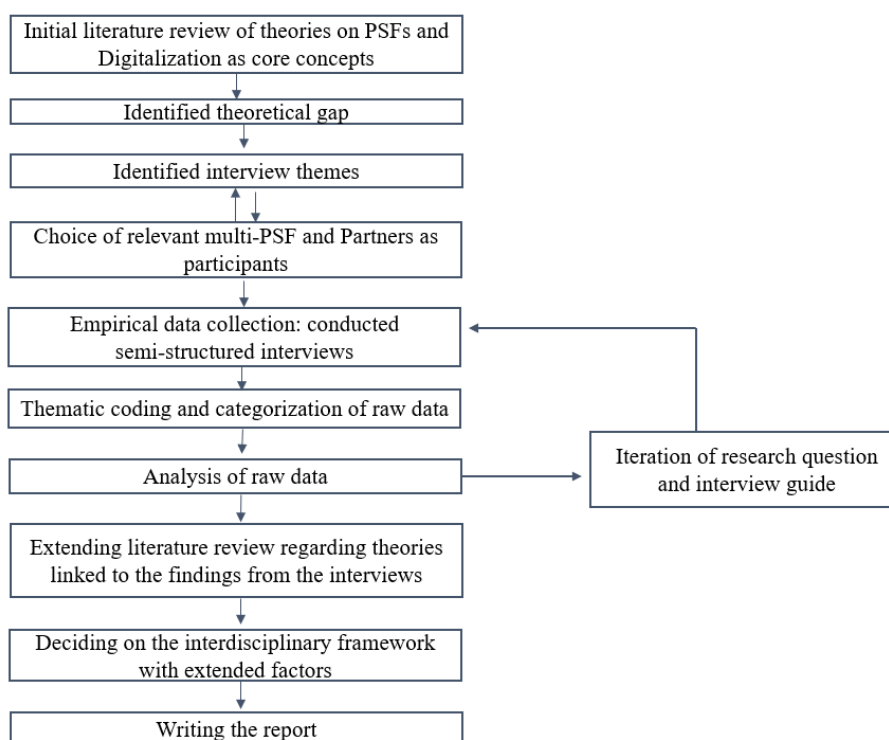


Figure 9: Depicting a step-by-step approach of data collection and analysis phases that I took throughout the process.

4.2.1 Initial Data Collection

The first step was a preliminary search in academic literature to refine the research ideas and overall topics of digitalization and PSF. Thereafter, a critical literature review was conducted

to form the foundation of the research, in accordance to Sharp et al. (2002). The research collection process was an interplay between primary, secondary and tertiary sources to gain a granular understanding of the research topic. From that, an evident research gap was identified when bridging digitalization as concept and PSF as object.

4.2.2 Participant Sample

The empirical findings are based on 24 interviews with 2 Executive Directors, 15 Partners, 3 Senior Managers and 4 Managers (Appendix 1). The split between service lines is 3 from Legal, 1 from Finance, 1 from Business Development, 11 from Consulting, and 8 from Assurance. The reason for uneven distribution between service lines was because an evident discrepancy in adoption between Assurance and Consulting occurred after just a couple of interviews. I found this interesting and wanted to explore further on the matter. Theoretical sample selection was thus also made in tandem with the data collection in accordance with grounded theory to explore new themes such as the gradual difference between these two dominant service lines (Strauss & Corbin, 1998). The person working in the central function of Business Development was included in the sample to provide an overall view of the organization. Furthermore, the person from Finance redirected me to interviewees from Consulting and Assurance instead of others from Finance.

I started off broad and reached out to all Swedish Partners from all service lines that I could find online and through my contact person within the firm. The reason why Partners were chosen as initial point of contact was because they are the owners and leaders of the firm. Thereby, they would most likely have high-level strategic information about the renewal initiatives and organizational strategies for digital disruption. However, after some time, it became evident that some Managers and Directors could sometimes provide deeper insights, which is why the scope of the sample increased to include employees with knowledge about the digital disruption and the strategic initiatives taken to build the digital knowledge base.

Snowball effect was also used to utilize the network effect of the firm to reach even more relevant participants for this research (Noy, 2008). This resulted in a larger sample from some of the service lines, namely Consulting and Assurance since they are the biggest ones and thus can provide more access to interviewees.

As a result of the broader research scope including all service lines, a bigger sample size was needed to reach empirical saturation (Warren, 2002). Empirical saturation was achieved after 24 interviews in total since no new categorization, data nor relational explanations between categories were found (Strauss & Corbin, 1998). I confirmed saturation by going beyond the point of saturation to conclude that no new concepts were introduced, and themes were repeated, in accordance with Saunders et al. (2017).

4.2.3 Semi-Structured Interviews

Since the area being researched is relatively unexplored and complex, semi-structured interviews was chosen to have open questions that could ultimately generate deeper insights from the participants (Edmondson & McManus, 2007). The open-ended and in-depth interviews enabled the interviewees to decide what was relevant to discuss and focus on their own reflection during the data collection, in accordance with explorative studies (Bryman & Bell, 2011)

The interview was based on a guide highlighting some larger identified themes within the research topic in a systematic manner. However, worth addressing is the potential data quality weakness of this structure since my own reflexivity to structure the interview might steer the conversation too much. To avoid that, I used scheduled and unscheduled probes to elaborate on the responses and draw more complete narratives (Dumay & Qu, 2011). Furthermore, I left space for the participants to steer the interview towards areas of relevance and interest, which provided even more valuable details. Therefore, having standardized questions would also delimit the answers and hinder potential valuable insights from the participants and rich details and flexibility needed for an unexplored topic (Doyle, 2004). Although, one can question the data quality also in terms of lacking standardization in the data set. To ensure consistent empirical data in those cases, I asked the remaining themed questions in the end of the interview.

4.2.4 Interview Guide

An interview guide was created based on thematic research areas of interest, namely; a) interviewee's background, anonymity of the study and permission to record, b) digital transformation in the firm, c) digital knowledge building (i.e. training, acquisition and retention) d) strategic renewal and how to balance exploration versus exploitation, and e) concluding questions. I started with informing that the participants and the firm would be anonymous in the study, to build trust and enable more honest and transparent responses.

The logic of the structure was to start off broad with the interviewee's professional background followed by industry-based digitalization trends and how it has affected the respondent's role and service line. The reason for this structure is to work as an icebreaker and conversation-opener that does not require too much reflection from the interviewee. Moreover, having an introduction with the interviewee's background enabled me to adjust the questions accordingly based on relevance prior to starting the official interview. The interview guide was also iterated between the interviews based on the insights found to better suit the organization and gain deeper insights into relevant areas, in accordance with Gioia (2012). However, all interviews were ensured to be outlined around the same reasoning and the questions were used as an explorative guide rather than a manuscript. Follow-up questions were asked spontaneously, to explore newly discovered topics of interest. See Appendix 2 for a more detailed outline of the interview guide.

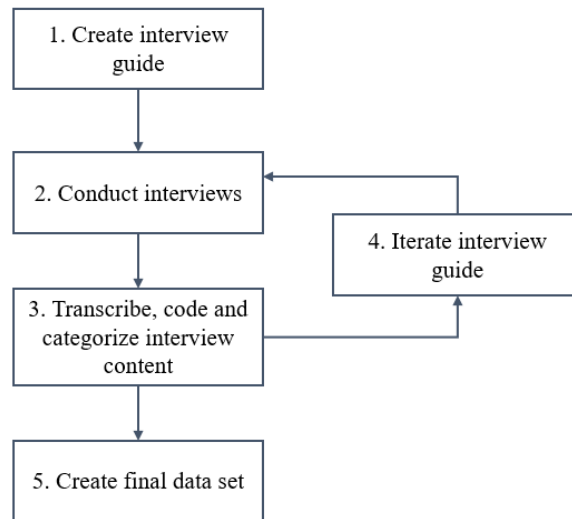


Figure 10: *Depicting the interview processes.*

4.2.5 Interview Setting

Most of the interviews (17 out of 24) were conducted in person (face-to-face, henceforth F2F) and at their office to reduce potential communication hinders, create a safe environment and ensure convenience and flexibility for the interviewee to participate. Moreover, F2F enabled richer information with facial and body expressions to interpret further (Brinkemann, 2013). The seven last interviews were conducted over the phone due to the inability to meet. All interviews were held in the mother tongue language of the interviewee, being Swedish with one exception where the interviewee was from another Nordic country. In that instance, English was used instead on the initiative of the participant. The reason for choosing to speak in the mother tongue was to ensure flow in the conversation and avoid any potential language hinders. Also, talking in the native language was a deliberate move to create a comfortable environment for the interviewee to express themselves in. The interviews ranged in time between approximately 30 – 70 minutes depending on the depth of the answers and follow-up questions.

4.2.6 Data Processing and Analysis

The recordings were transcribed within two days of the interview to include non-verbal cues that could provide richer information to the interviews (Opdenakker, 2006). A thematic approach was used to identify relevant themes in the empirical data. I used grounded theory and a systematic approach presented by Gioia et al. (2012) to bring “*qualitative rigor*” by conducting 1st-order and 2nd-order analysis. Gioia’s concept and order analysis is applicable due to the explorative nature of this study. Furthermore, both Gioia (2012) and the ontology of interpretivism argue that the world is socially constructed, and that reality is subjective based on the person’s meaning of it (Welch et al., 2011).

An initial 1st-order coding was made from the interviews to identify the main codes from an informant-centric view. The codes were categorized into recurring conceptual components and themes that were apparent (Edmondson & McManus, 2007). The same process was then made for 2nd-order concepts from a research-centric view, where certain theoretical themes that could be linked to the 1st-order codes were identified. Hence, a continuous process of linking 1st-order and 2nd-order concepts and codes together was done to create categories, following the

abductive approach. This process was repeated multiple times until empirical saturation was reached.

As the interviews and analysis phase progressed, axial coding was used to identify relationships and interconnections between categories. Following a grounded theory approach, similarities and discrepancies was identified amongst the categories to synthesize it to a delimit number of themes (Glaser & Strauss, 1967). This in turn generated specific core themes, concepts and categories that composed the data set structure. Once the entire data set structure was finished, emphasis was on understanding and finding dynamic explanations to the relationships between the separate 2nd-order concepts to find the interplay.

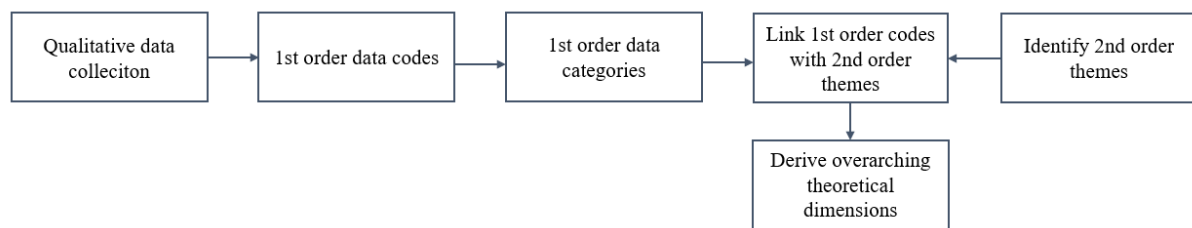


Figure 11: Depicting the data analysis process, following Gioia et al.'s approach (2012). The transcripts from the interviews were grouped in 1st order codes and then categorized. Lastly, the 1st order codes were validated by identified 2nd order themes that conclusively constitutes the theoretical dimensions.

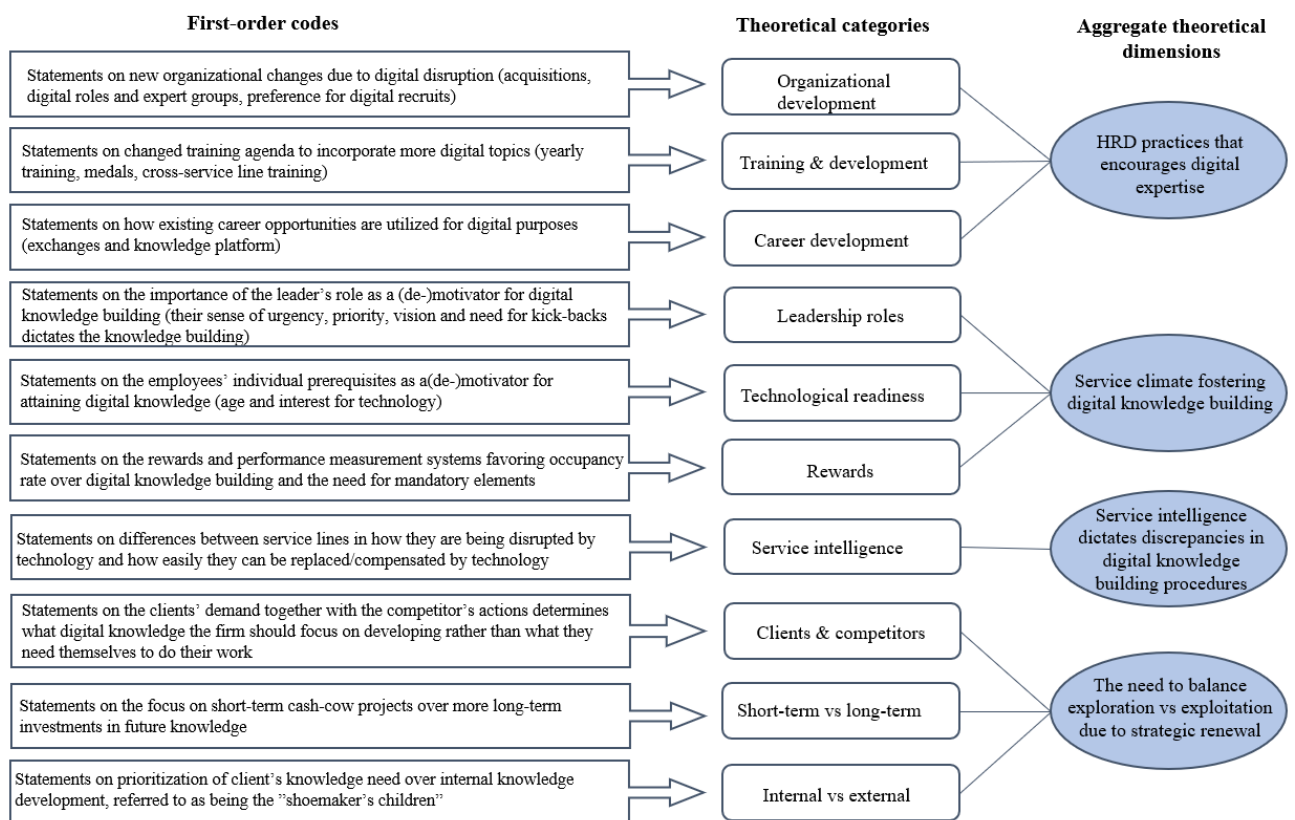


Figure 12: Overview of the data structure and how the final theoretical dimensions were chosen.

4.3 Data Quality Assessment

In order to critically assess the quality of the data, the Lincoln & Guba (1985) and Guba & Lincoln (1994) criteria of trustworthiness and authenticity have been used. The reason for this choice was because these specific criteria resonate with interpretivism.

4.3.1 Credibility

In order to reach trustworthiness and validity, one of the most essential aspects to consider is the credibility of the study (Lincoln & Guba, 1985) and a true representation of the reality is represented. To be able to depict the participants' true and honest interpretation of the reality, anonymity of both the firm and the participants was used.

To uphold credible data, triangulation was done to include several data sources of evidence such as the semi-structured interviews, multiple academic papers and theoretical perspectives to ensure rich and comprehensive understanding (Denzin, 1978) and consistency in the conclusions. The reason being in accordance with Denzin (1978), stating that if multiple data sources derive the same conclusion, it can be considered more credible for qualitative studies like this one. Analytic triangulation was also done to minimize potential risk of biases, assumptions and vagueness in the research.

Respondent validation was made informally during the interview sessions, when I asked clarification questions to confirm statements. No member checks on the transcripts were made due to time constraints, which can be considered a weakness. However, member checks of my interpretations and conclusions from the data was checked informally with respondents. The audio recordings of the interviews were also used continuously as a reference to avoid any potential biases in interpretation of the data.

4.3.2 Transferability

This study's applicability to other contexts can be viewed as limited since it is based on a qualitative study (Bryman & Bell, 2011) addressing one specific case, in one secluded geographical region and in one point in time. Since digital disruption is unfolding now, the transferability of this study might not be applicable in the future when the digitalization has progressed. The latter is inevitable, which is why future research is requested to update the findings. However, I have aimed at providing thick descriptions (Geertz, 1973) by including rich details about the setting and circumstances of this case (Tracy, 2010). Ultimately, the study depicts multiple professions in one firm aiming at generating some sort of transferability to other PSFs and firms in other industries with similar characteristics or multiple professional divisions. Nonetheless, to be able to conclude which findings that apply for other organizations and employees, similar studies in other contexts have to be conducted.

4.3.3 Dependability and Conformability

In order to ensure dependability of this study, all material from the research process has been saved, making it easier to repeat. Moreover, inquiry audit has been used where other researchers (supervisor) or external parties (friends) have examined the process and result to give central feedback (Hoepfl, 1997). I cross-checked the recordings with the transcribed material and received input from external parties to ensure a correct translation of the quotes.

During the study, I have acted in good faith and to the best of my abilities exempted personal values when developing the results. The reason is to generate as fair and nuanced results as possible. An audit trail was done to provide transparent information about the research steps. When it comes to participant selection, I initially contacted all possible Partners within the firm to minimize the risk of favorable selection. However, one aspect indicating risk for weak conformability of this study is the fact that it was conducted by only one researcher, making it harder to exercise reflexivity, foster dialogue and cross-check every step of the process. To counter that, considerable discussions was made with my supervisor throughout the process.

4.3.4 Authenticity

Guba and Lincoln (1994) have formulated additional criterias on authenticity of the research.

4.3.4.1 Fairness

Fairness of the study can be questioned to some degree since the sample is geographically, timely, and organizationally delimited. However, empirical saturation was met through the 24 interviews. I also sought to include a wide group of participants within the defined selection criteria based on the participants' seniority. When I reached out to potential participants, I made sure to target a wide and representative spread in terms of service lines, gender and age to include multiple fair representations of perspectives. From that, the participants volunteered to partake. After some interviews, a discrepancy theme was noticed between Consulting and Assurance that needed to be explored further. As a result, the sample purposely have a larger representation of those two professions.

To increase the authenticity of the study, member checking on interpretations and conclusions with the interviewees was made to engage them in the consensus building (Nolan et al., 2003). Reflexivity was done by checking with external parties to minimize risk of me shaping the research from my own perspective and beliefs.

4.3.4.2 Ontological and Educative Authenticity

Several of the interviewees expressed engagement in participating. They explicitly stated that it generated new insights and perspectives for them to reflect and discuss digital disruption and their digital knowledge building procedures. Furthermore, they had the opportunity to reflect on their colleagues' situations, competence levels and behaviors, which expectantly can increase the educative authenticity. The ambition is to equip the respondents with wider and deeper insight for their own and also colleagues' social situations.

4.3.4.3 Catalytic and Tactical Authenticity

These two factors are difficult to assess since actions towards change as a result from this process have not yet been confirmed (Nolan et al., 2003). However, by reflecting on the organizational situation and their own and colleagues' knowledge-building, the respondents may become more aware of the situation. This in turn can generate empowerment to change. I will distribute the research to the respondents that can then read and reflect on the results and how they can advocate change and prioritize new digital knowledge-building activities. Especially since the leader's role is emphasized in my findings as a factor affecting the service climate and digital knowledge-building in the firm.

5. Empirical Results

The following chapter presents the empirical findings. The section is divided into two, first one (5.1) on a macro-level to explain the process of how the multi-PSF renew their knowledge as a firm. The second section (5.2), presents the data set on a meso-level, addressing discrepancies across service lines to explain differences in how they adopt and prioritize digital knowledge (5.2).

5.1 How the PSF Renew Their Knowledge Base on an Organizational Level

All interviewees stressed the fact that PSFs are being disrupted to different extents as a result of the digitalization taking place in society. Indeed, they all stated the relevance of and need for adaptation and renewal of their knowledge base to fit the digital society of the future. This can be illustrated by a Partner addressing the ground-breaking effect of fourth industrial revolution. *“That is what the fourth industrial revolution is about, you have to understand how to adopt and adapt it so you remain relevant in the future. So there is a huge change ahead that will affect our customers but also us as a firm. We cannot just stand on the side and not think that we will become disrupted. No, we have to reflect on how we work and that is something that is affecting us to an extensive degree.”*(Partner 15)

5.1.1 New Digital Roles and Expert Groups Centered Around Digital Knowledge

When talking about how the firm renew their digital knowledge, a lot of the interviewees emphasized ongoing organizational development activities that are being done through structural changes. One of the recurring themes was that they have created new digital roles and digital expert groups to foster digital expertise. Multiple groups with digital profiling were mentioned as supporting functions for the rest of the service lines, helping with everything ranging from data analytics to improving internal work routines and control. Some of the interviewees identified the purpose of these groups to create a symbolic value and send a message to the organization to indicate the importance of digital knowledge. *“[Name of a new technology group], is one of the biggest signals that this area is important and emphasized within our organization.”*(Manager 5)

Moreover, a discovery was their strategic decision to integrate the technically specialized roles within all service lines instead of keeping it as a separate unit. This can be illustrated by the following; *“We could have wished for even more technically specialized people in the Nordics, but that is coming up now as we grow as an organization. One example is that we start to integrate technical people in the service lines, one being cyber security specialist in Finance”*(Partner 2).

New roles deviating from traditional titles for these services have been created to adapt to the new digital areas. An example of that are the regional Digital Leaders that work on the digital agenda for the local office and making sure that they remain competitively relevant. *“Even accounting firms are getting a Head of R&D, that we call a Digital Leader. Even as a*

knowledge and service company, we have a Head of R&D to make sure everything is more interconnected”.(Partner 11)

Another deviation being a data analytics team that was created a couple of years back where they offer dual roles for people that do not have the traditional background but rather a passion for technology. *“We have created a data analytics group including people with more technical background...they don’t even have to have a University education but comes from high school and has a passion for technology”*(Partner 1). These employees are working 40 percent within Assurance and 60 percent with fostering digital skills in data analytics, learning how to extract data. They initially served Sweden, but eventually expanded to the Nordics since the demand was so high. *“The idea is to create a certain type of skill-set that is found in the interaction between the two areas.”*(Manager 3)

5.1.2 Change in Recruitment Profiles to Include People with More Technical Backgrounds

Another evident knowledge initiative expressed by the interviewees was the change in recruitment profiles to ones with more technical backgrounds. Partners mentioned that the requirement profile for new applicants to the firm has historically been very fixed and traditional, to change into broader and less standardized. This can be illustrated by one of the statements; *“Before, it was a great emphasis on people with economic and financial background, coming straight out of university...Now it is not enough anymore, and it has to be combined with other knowledge [digital].”*(Partner 2). A practical example of that is the technologically skilled high school students mentioned in the previous section that are hired to the data analytics team.

There was a consensus reached by the interviewees that in order for them to keep their knowledge base relevant, they have to scrutinize and expand their view on what knowledge to recruit and take into the firm. All service lines expressed some type of change in the requirement profiles when hiring new employees into their respective area. Partner 15 mentioned that *“We need digital competence across all service lines, so not only our Technology team.”* Even professions that have historically been very bound by certain backgrounds, like Assurance and Legal have changed. Two Partners mentioned that the authorities have changed the educational requirements for accounting roles, enabling them to recruit people with other backgrounds than economics. Legal are nowadays looking for *“lawyers but also engineers that have an aptitude for handling mass data”*(Partner 12).

5.1.3 External Knowledge Acquisitions and Alliances

Another way this multi-PSF build digital knowledge within the firm is by acquiring it externally. The reason for this strategy is to complement their existing skill set and be able to scale up their competence quicker and more efficiently than just building it from scratch. An Assurance Partner (Partner 11), stated that *“today we acquire companies if we feel that there is something we are not good at (ourselves).”*

However, a discrepancy was unveiled across service lines. This acquisition logic was mostly used by Consulting and not Assurance since the latter is heavily regulated. In addition, the Assurance-market is already mature with four key players (The Big Four), which made it difficult for them to acquire new companies to the same degree as Consulting. *“We don’t buy within Assurance, only through Consulting, one example being [names the company]. We don’t buy anything within Assurance since there is primarily the Big Four Firms on the market, and we cannot buy one another due to competition law.”*(Partner 11) Instead, Assurance appeared to create more strategic alliances with technical companies to tap into their knowledge base and tools. *“Alliances with different digital product companies like [providing named examples] is a very central part of our strategy to be able to remain digitally relevant.”*(Partner 14)

5.1.4 Utilization of the Existing Career Development Channels to Broaden and Share Digital Knowledge

According to the interviewees, the already existing career development opportunities were being used to foster digital competence building. Many of them mentioned their internal knowledge sharing platform that is used for news, knowledge sharing, storing CV records of employees and a search engine to find experts internally within certain areas. This channel was emphasized as a way for people to show and enhance their digital expertise so other people in the business could reach out.

Additional career opportunities that were mentioned was their already established exchange program of sending employees abroad for a limited amount of time to learn new skills. However, this opportunity is a firm initiative without a digital agenda, but rather considered a generic career development opportunity for employees. Nonetheless, some Partners stated that the frequency of exchanges could increase to build technical expertise. *“We do knowledge exchange by sending people abroad, so we take in people with the required innovative skills. I think we will see a lot more of that.”*(Partner 1)

5.1.5 Change in Mandatory Training Agenda and New Digital Training Initiatives

All interviewees mentioned a change in their training procedures to focus more on increasing the level of digital knowledge. The firm has mandatory training that is arranged on a yearly basis for all employees in all service lines where the focus is to build their knowledge base. The interviewees mentioned a shift that has happened the past years in the training agenda to become more digitally focused. *“If you look at the course catalogue for the yearly mandatory training days, you see another focus nowadays, much more digital skills, strategies and new technologies - much more than it has been before so the trend is pretty clear.”*(Partner 15) In addition to that, Partners from all service lines informed that training on new digital tools and skills had become more integrated in their separate service line education, indicating the importance and focus on technical skill-set. Two examples being a RPA course for Legal and data analytics for Assurance. *“Earlier when you were newly recruited as an accountant, you took accounting and legal courses and perhaps a secluded education about data analytics. Now*

it is more integrated into the standard classes since it is central in everything that we do. We don't want it to be a separate silo anymore.”(Manager 3)

Even though *“the service delivery differs greatly between the service lines”* (Director 1), some of the training is arranged across service lines to encourage knowledge sharing and thus speed up the knowledge building process. *“We have common training across service lines[...]/The idea is to exchange knowledge and experiences about digital services and get away from the silo-thinking that is in our heritage.”(Manager 3)*

Furthermore, additional courses are offered on emerging technology, IT skills, data analytics, coding and so forth. After finishing these courses, the employee received a kind of fictitious medal stating if they have bronze, silver or gold competence in that specific digital skill. Interviewees mentioned that by having these three levels, people could dig deeper into areas of interest and find an incentive to receive a higher medal and advance their skill set. The medals could then be shared on their internal knowledge sharing platform and in the employee's public CVs to enhance their skill-set. Again, the symbolic value was expressed as a reason for these additional trainings; *“It is a way for our company to promote the fact that we are a knowledge company where we value people putting time into learning - so there is a symbolic value behind it.”(Partner 9)*

5.1.6 Leader's Sense of Urgency on Digital Disruption as a Phenomenon

According to several interviewees, the leader played a vital role in affecting to what extent the digital knowledge base is renewed. This is done by the leader influencing the employee's willingness to learn and prioritize their own digital knowledge building. Depending on the specific leader and how they adopt and encourage digital knowledge building in their teams ultimately affected the firms' extent of renewal. It became evident through the interviews that the leaders have different interest and beliefs in digital disruption as a force that is affecting their work. According to the interviewees, this in turn affected their way of leading their team and how much they prioritized digital knowledge building.

Moreover, a crucial factor for determining to what extent different service lines adapted and acquired digital knowledge was the sense of urgency that the leader had. *“The challenge has been to get especially the senior Partners to understand the sense of urgency, which is specifically for Finance. We have had a couple of wonderful years with good transaction volume, and now it is about wanting and daring to take on the new that is coming.”(Partner 2)*

5.1.7 The Leader's Communication of Vision and Prioritization

Having a leader that explicitly prioritizes digital knowledge building and communicates a clear vision and strategy for the teams was identified as additional deal breaker for renewing their knowledge base by acquiring new digital competences. One of many examples mentioned was a Consulting Partner stating that *“Communication and change management is important to be able to get buy in from the organization and the people so they feel motivated about the transition.”(Partner 7)*

5.1.8 The Partners' Need for Immediate Kick-Back on Investments

A third factor addressed concerning the leader's role was their motivation behind prioritizing projects with fast payback period over more long-term investments. One mentioned explanatory factor was the leader's focus on immediate return and gain. Knowledge regarding advanced and emerging technology could be seen as a more long-term investment for the future way of working for certain service lines since it will not be applicable for them immediately. Since the company is Partner-owned, it's indirectly the Partner's own money at stake when it comes to new investments. The following was illustrated by an interviewee stating *"Since we are a partner-owned company, we are always cautious about investments. There has to be a kick-back to get money back from investments."* (Partner 12) That in turn could, according to the interviewee, affected their choices in what type of knowledge investments to do. The Partners have their role for a certain amount of time, causing some of them to potentially prioritize the immediate reward to ensure that they reap the benefits from it rather than investing in the future knowledges. This could be explained by a Consulting Manager, saying that *"It is a leader-question, what type of incentives do the Partners have, because they have yearly dividend, so what incentives do they have to invest in new technologies and competences given that they will be Partners for a limited time."*(Manager 1)

5.1.9 Younger People are Typically More Interested and Willing to Adopt New Digital Knowledge

In addition to the leader's role, the employee's technological readiness and interest could act determinants for fostering digital knowledge building. A recurring and unison theme addressed by almost all interviewees was the role of age and the importance of having employees belonging to a younger "tech-savvy" generation. They implied that younger generations generally tend to have a bigger interest for technology. Many of the interviewees stated that the benefit of being a large PSF is that it attracts new and young talent that *"is hungry and already has a foundation and engagement for those things."* (Manager 5) Another Partner explained that *"There is very little space to become old and comfortable in this organization. We get a lot free from having a large group of young digital natives as employees."*(Partner 6) Beyond that, the employee's individual interest for digital tools and skills was also mentioned as a difference in how service firms adopt digital skills. Partner 5 explained that *"this is very individual, some people like doing this type of work and then there are some that like it less. So that is where the responsibility is at [indicating it is on the employee themselves]."*

5.1.10 High Occupancy Rate is Rewarded Over Digital Knowledge Building

Another determinant mentioned by the interviewees for having employees actually adopting and learning new technological skills, is the rewards associated with it. The firm based its yearly employee evaluation and bonus-system primarily on number of sold projects (for more senior employees) and occupancy rate, meaning how many hours of a total work week is billed to a client case. Consequently, a tension was addressed by multiple interviewees in terms of what

to spend their time on. Either, working on projects and billing hours or spend the time to expand one's digital knowledge base for the future. Since the latter is not carrying as much weight into an employee's assessment, it tended to be a second priority for the employees, according to the interviewees. One Consulting Manager mentioned that in order *"to build digital knowledge and focus on that, well then the way that we are assessed has to change in order for us to prioritize that question, at least among many of our coworkers."*(Manager 5)

Manager 5 also stressed the need for a change in the evaluation factor of selling projects. This person wanted to incorporate a KPI in the assessment that considers number of digital projects that are being sold. This, in order to encourage Partners and Managers to want to take on new types of digital projects instead of solely focus on selling projects based on already acquired knowledge. *"We are assessed based on occupancy rate and how many projects we sell. But there is no practical KPI measuring of how much I sell, is of digital nature, at least as a Manager. It has to be an incentive for that."*(Manager 5)

5.1.11 The Mandatory Elements of Work is Prioritized

According to the respondents, another aspect as to whether or not employees in the PSF learned new digital skills depended on if it is mandatory or not. Interviewees stated that unless it's considered mandatory to learn certain skills or share certain knowledge, it tended to get deprioritized. Three Partners mentioned their internal knowledge sharing platform as a practical example. The idea is to share one's projects and insights on there so the rest of the firm can access it and learn from it. However, since it is not mandatory, explicitly stated in their daily routine work or included in their yearly assessment, the employees tended to not do it. *"There is no mandatory steps, it's not something that we are measured or assessed on, which result in people getting more comfortable to do their own projects and then once they are done with that there is no routine to contribute with the knowledge to the firm. So there is a lack of incentives for people to actually do it."*(Manager 5)

5.2 To What Extent Different Service Lines Adopt and Apply Digital Knowledge

Even though a vast amount of the strategic renewal initiatives of the process of digital knowledge building was the same across the service lines, it became evident in the interviews that the service lines differ in the extent that they learn and use digital knowledge. Following section provides structured data on meso-level, addressing each service line.

5.2.1 The Client Demand and Digital Competitors Set the Knowledge Agenda

Through the interviews, it became evident that the multi-PSF is very market-driven in their strategic choices. The firm is very service-oriented, focusing on selling and delivering services to their clients. In order to continue doing that, the interviewees mentioned that the firm follows and reacts to their clients need and competition's actions to remain relevant on the market. More specifically, the respondents said that it is the client's demand and competitors strategic focus that dictates the knowledge agenda and what type of knowledge that is developed. Once being

asked about who determines what knowledge to focus on developing, one Partner said *"It's the customers mostly, together with the competitors. We need to be able to promise more than our competitors and then actually being able to deliver on it."* (Partner 3) The reasoning behind this reactive strategy was explained by a Partner stating that *"We have to be first to be able to use it as marketing purposes and win new customers...you have to keep your ear to the rail to hear what the customer demands and be able to sell our services. You have to show that you are in the forefront, or else you will not be chosen."* (Partner 11) The following statement reinforced the strong client- and competitor-focus of the firm. Manager 5 explained that if there is a certain digital knowledge that customer demands that they do not have within the organization, they make sure to focus on building that knowledge base.

5.2.2 Prioritize Short-Term Gain from Cash-Cow Projects or Long-Term Investments for the Future

A tension was raised by the respondents, being the trade-off between projects using today's knowledge and tools that they are already good at versus more long-term investments in new digital knowledges. The former can be viewed as a more short-term and cash-cow generating project where existing knowledge is used. As already stated, digital knowledge building could potentially be considered a long-term investment since some of the benefits cannot be realized immediately for the service lines. This was especially addressed for Consulting, stated by a Partner; *"We have the challenge wherein what is hot on the market right now is not what the consulting companies earn money on."* (Manager 7) This balancing act between selling existing knowledge of today versus the knowledge of tomorrow of digital nature was also explained by a Digital Leader and Partner declaring; *"We are standing with one leg in today and one in the future - today to be able to deliver the services and in the future to build the competence and knowledge that will be required of us then but not now."* (Partner 15)

5.2.3 Prioritize Client's Knowledge Need Over Internal Knowledge Development

When digital disruption was discussed, a clear distinction was identified between external work towards client projects and internal knowledge development of work processes internally. The external work was explained by interviewees as the digital skill required to solve the client's problem or acquiring new knowledge to be able to deliver to client. The internal knowledge work was instead focused on improving their internal workflow and the actual service delivery by using digital competences. In other words, *how* the work is done by the firm, e.g. automating certain tasks internally. As previously mentioned, being a PSF where the client is in focus, all respondents emphasized that the external work was prioritized. One example being *"It is the solutions that we offer to our customers where we invest new recruits and knowledge building in."* (Manager 2) In fact, an interesting observation was that multiple respondents used the exact same expression of them being *"the shoemaker's children"* because *"it is not prioritized to develop ourselves internally, instead it is focus on clients first."* (Manager 7) In other words, they de-prioritize their internal processes over delivering to clients and keeping a high occupancy rate.

The aforementioned distinction between internal and external knowledge building was explained by a Consulting Partner; *“There are two aspects of digital transformation that you have to consider. One being what you offer, so transforming to your digital offerings. The second is how you operate, whether or not that is digital. Digital offerings is about digital tools etc. And it is very clear that what we do towards customer constitute a high percentage of our time and efforts.”*(Partner 5)

5.3 All Service Lines Have Different Abilities and Need to Adopt Digital Knowledge

When looking at digitalizing the internal workstreams (how they deliver the service), interviewees addressed a discrepancy between service lines. They proclaimed that the reason is that the possibility to automate and use digital tools instead of manual work varies greatly between service lines. Multiple interviewees highlighted the fact that the level of variation in tasks and the need for human intellect were factors determining to what extent certain service lines adopted and applied digital competences and tools. One Partner from Legal elaborated on it in more detail by declaring; *“What we deliver to our customers are completely different across service lines, and that affects what possibilities there is of automation and digitalization. Book-keeping for instance provides many more opportunities to optimize through automation and digitalization. When talking about digital in the context of how we do our work and what we can automate through use of different tools, that will differ greatly across service lines. In Finance for instance, they do a lot of income tax declarations which are frequent tasks that should be easier to automate.”* (Partner 4)

Another Partner from Legal gave a practical example of this disparity by bringing up the firm’s internal RPA education that employees from all service lines can attend. He sent some of this team members to the course to gain an understanding for how RPA could be applicable for their division and what of their work that could be automated. *“A very interesting conclusion was that all of them said it was interesting but more aimed at simpler work processes [than what they do]. We don’t have that many tasks that are so repetitive that it is even worth doing it or investing in it. Instead, it has to be AI that can facilitate our work, and that will take some time before that will be available.”*(Partner 6) Accordingly, different service lines have different capacities and abilities to adopt new digital skills and usage of tools.

In fact, the divergence of where each profession is in their transformation towards adopting new digital skills was illustrated by a Manager from Assurance stating that they have already undergone a digital transformation of their service delivery - *how* they do and deliver the work. He elaborated on the fact that they nowadays get access to all data and can deliver the results much faster through digital tools rather than receiving physical receipts and doing the accounting tasks manually. *“The everyday life as an accountant now when we instead have digital processes have become much more interesting and increased our value in delivery - gone from being a transactional supplier to instead be an advisor.”*(Manager 4)

Another way of phrasing the same observation of divergence was made by some interviewees

and their attitude towards digital disruption. They stated that the different service lines and their professions are affected differently by digital disruption. Some service lines like Consulting and Legal believed that they will not be as disrupted by technology in their internal working procedures as Assurance or Assurance that includes more repetitive tasks. An example of was made by a Consulting Partner stating *“I’m not an expert on Assurance, but what I hear from the market is that this is a typical business area that could be disrupted. I don’t see that happening with management consulting...I don’t think we will have one Partner that goes around with a fantastic AI-tool that could do the work any time soon, I simply don’t see it.”*(Partner 5) Moreover, Consulting separated between their own work becoming disrupted and their client’s businesses being disrupted. In fact, they saw their client’s industries becoming disrupted by technology, which in turn often resulted in digital transformation projects of their clients that required certain technical skills from their end. However, when looked at their own way of working and getting the work done, as the Partner stated above, they could not foresee a digital disruption taking place. The reason was that they will *“still need to have junior people working on the “easier” tasks”*(Partner 5), indicating less ability to automate management consulting routine tasks.

6. Analysis

This chapter analyzes the empirical data set through categorization and linking the themes back to literature and academia. The two first sections are on a macro-level where the process step of strategic renewal is analyzed; (6.1) how the digital knowledge base is renewed as a response to digital disruption and (6.2) its affiliated decisions on what digital knowledge agenda to renew and to what extent. The third section (6.3) takes a meso-perspective and dissects different professions and uses its separate service intelligence and the discrepancies between neo-classic and classic-professions to explain discrepancies in adoption and prioritization.

6.1 Tailoring the HRD and Service Climate on a Firm Level to Build Digital Knowledge Expertise

According to literature, the primary resource in a PSF is the knowledge and the specialist technical expertise possessed by the professionals in the firm. Therefore, the content to focus on in a strategic renewal initiative due to digital disruption is to maintain a relevant knowledge base in the firm. In fact, the human capital with their knowledge is seen as one of the main assets in a PSF (Empson et al., 2015). When looking at the renewal initiatives in the organization at large, the firm takes on multiple HRD activities and lets the service climate facilitate or inhibit renewal of digital knowledge.

6.1.1 Customized Initiatives Through Organizational Development and Training to Encourage Digital Competence Building

According to the empirical results, special focus is on organizational development activities. One example is the creation of new roles and groups such as the Digital Leaders, new technologically focused divisions and the data analytics team. Moreover, as the definition of the term “organizational development” suggests, the “*way of reducing divergence between divisions*” (Alhalboosi, 2018) is done by integrating technically skilled people in all divisions rather than keeping them separate as a support function. My findings identify external knowledge acquisition as a strategy to attain a desirable digital competence level. This is done in two ways; one being to acquire technically excellent companies or create alliances with external parties. The second way is through recruiting more people with technical backgrounds.

A central part in HRD is the training and development activities to strengthen the knowledge and skills for current and future job tasks (Alhalboosi, 2018). According to my findings, the firm offers tailored initiatives to foster creation of digital competence. New talent, internal trainings and management practices have been developed to stimulate employees to learn new technologies and establish new digitally informed work practices. This is done by changing the mandatory training agenda to incorporate more digital elements and by arranging cross-service line training. The reason for that is to foster the already existing capabilities of knowledge renewal by enabling digital knowledge sharing. In addition, the new additional training initiatives have been created wherein people receive fictitious medals as recognition and incentives.

However, my findings indicate that the focus on changing the career development opportunities was limited. No further initiatives were made beyond their already existing exchange programs and internal knowledge sharing platform. However, linking back to theory, career development is something every individual is responsible for themselves, since it is an internal process to assess one's own abilities and reflect on how to develop in the career. All respondents are Directors, Partners and Managers within the firm, which may explain their lack of insight concerning each employee's career development opportunities.

Based on this analysis, the identified empirical themes taken from the data structure and its correlation to literature and theories is depicted below.

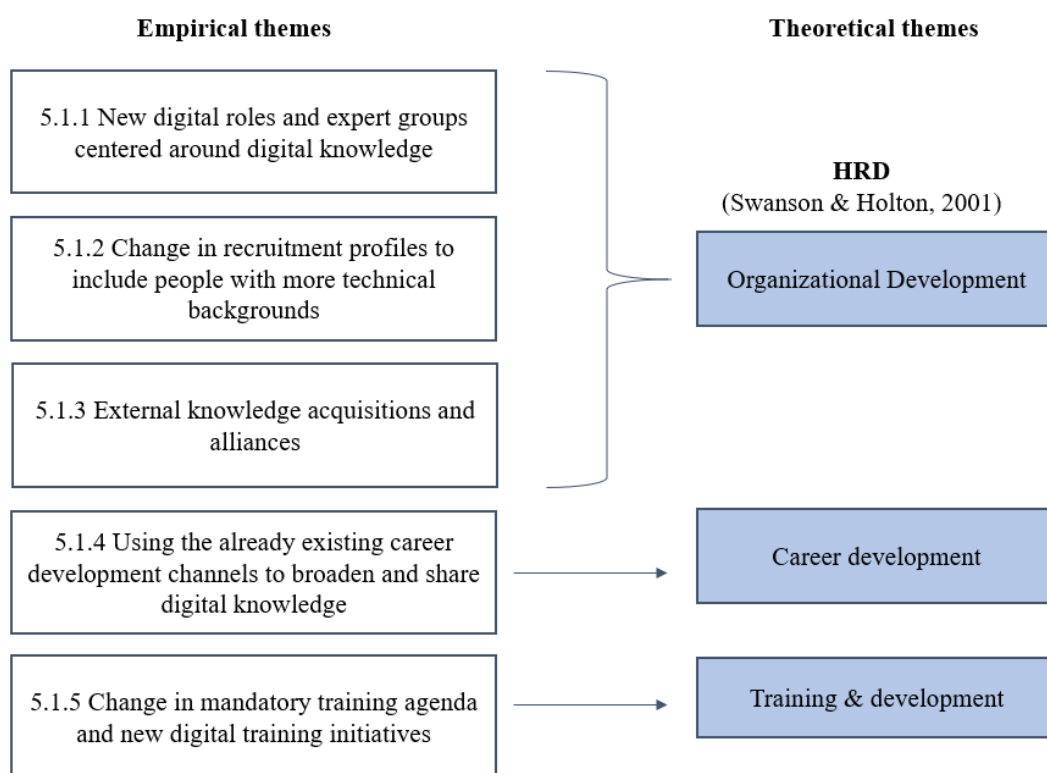


Figure 13: *Depicting the link between empirical findings and HRD theories from the literature and theoretical framework.*

6.1.2 Service Climate Acts as Determinant for the Extent of Digital Knowledge Renewal

The second aspect of research question 1, is referring to factors determining the extent of the knowledge being renewed. Based on my empirical data set, it became evident that the service climate is the determinant for renewal in the firm. Linking back to theory, the employees need to perceive that their behavior of acquiring digital knowledge is rewarded, expected and supported in the firm to do it (Schneider, White & Paul, 1998). Nonetheless, this multi-PSFs' performance management systems are not adapted to digital knowledge measures. No indication of measures or performance indicators linked to digital skill building was found on a macro-level. On a general level, the bonus and rewards system are primarily based on

occupancy rate rather than development and maintaining a high knowledge level. This in turn encourages short-term economic gain of delivering the service by using existing knowledge over building new knowledge for the future.

When looking at the internal knowledge sharing aspect, there is no mandatory elements used to “force” employees to share their knowledge with peers through the internal knowledge sharing platform. My findings suggest that this results in a de-prioritization for employees to share knowledge internally. This lack of a mandatory element can in turn limit the ability to reinforce skill building by tracking and rewarding that behavior. Neither a “carrot” in the case of a reward bonus nor a “stick” as a punishment for not sharing knowledge in the firm was used as a strategy to encourage digital knowledge building.

Interestingly, an additional external factor was found dictating employees’ willingness to learn and adopt new digital knowledge. Namely, the employees’ individual prerequisites such as age and interest for technology. These individual characteristics shapes the technological readiness in the organization (Parasuraman, 2000) which in turn shapes the service climate. Hence, my data suggests that technological readiness needs to be considered when looking at willingness to strategically renew and adopt new digital knowledge (Schneider and Bowen 2019). My findings suggest that the Partners and Managers perceive that younger employees tend to have an interest and aptitude for digital competences, given that they are born in a technologically focused generation. This in turn increase their tendency to enact digital disruption by building their digital knowledge base.

My findings indicate that the leaders’ role is an imperative factor in the service climate that (de-)motivates the employees to adopt new digital knowledge (Schneider & Bowen, 2019). In fact, their way of prioritizing and communicating a vision for renewing the knowledge base due to digitalization is identified by the respondents as a condition to increase the employees’ willingness to follow. Some ways of prioritizing that can be to provide resources for internal training, acknowledge employees that enact digital knowledge and by supporting initiatives for developing digital expertise. Whether the leaders do that or not is dependent on two identified factors; their sense of urgency and need for kick-back on investments. Depending on how affected the service lines are by digital disruption, the higher sense of urgency and consequently higher priority. Secondly, being a Partner-owned organization, the leaders need to see a quick return on their investments. Sometimes the knowledge building concern internal work processes instead of external client work or emerging digital skills that cannot be benefited from instantly. This in turn offers a slower return on the investment for the Partners and can consequently become deprioritized. Thus, leaders play an important role as gatekeepers for investing in new technological knowledge.

To conclude, past literature generally addresses the importance of the leader’s role and the rewards system when it comes to building a strong service climate (Schneider & Bowen, 2019; Bowen & Schneider, 2014). However, my findings add to the service climate literature by unbundling the concepts of leadership roles and reward systems and adding more detail on the leader as a gatekeeper for what knowledge to invest in and what behaviour to reward. More

specifically, the leader's sense of urgency, prioritization, need for immediate kick-back. Secondly, a reward system that encourages occupancy rate over knowledge and without mandatory elements to get employees to build knowledge (see data structure in Figure 14). Moreover, technological readiness (Parasuraman, 2000) is a general factor addressed by literature in how technology is adopted differently by individuals. My empirical findings on the other hand unbundles this literature by applying it to a multi-PSF and specifying age as a determinant. Consequently, this unbundling process of theoretical themes resulted in an opposite process where theoretical themes are disentangled into multiple empirical themes. The three factors act as a triadic force in shaping the service climate to enable/inhibit digital knowledge building.

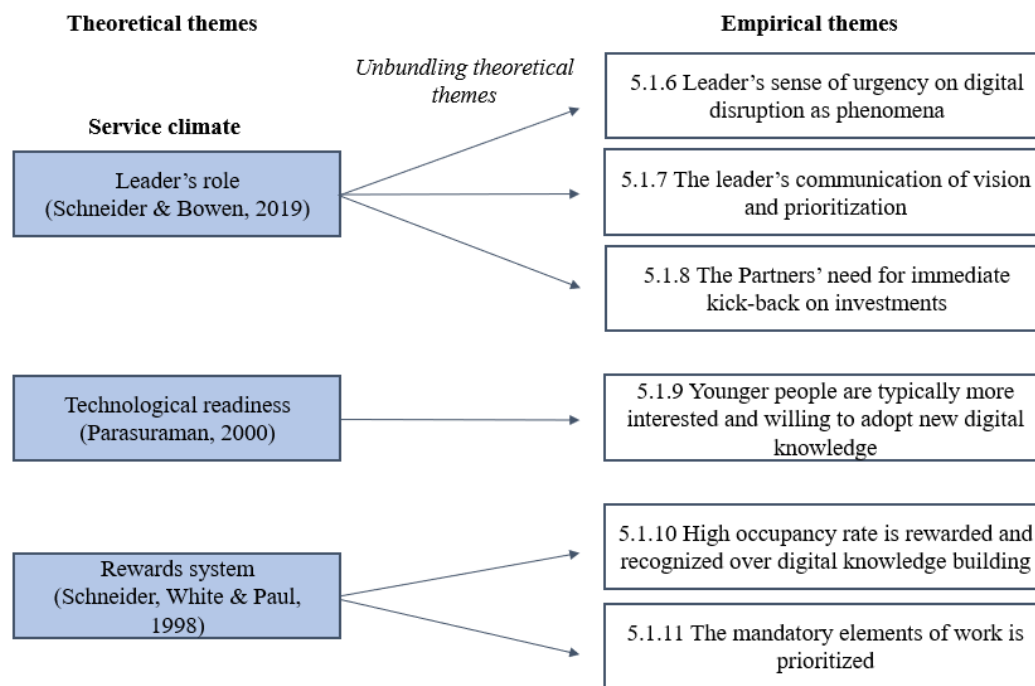


Figure 14: Depicting the unbundling of service climate theories and technological readiness literature and applied to a multi-PSF's digital knowledge building process.

6.2 Affiliated Decision of Balancing Exploitation and Exploration in the Process Step of Strategic Renewal

A part of the *process* aspect of strategic renewal concerns its affiliated decisions on how the digital knowledge base in this case is renewed (Argawal and Helfat, 2009). Past literature addresses the tension that arises from strategic renewal decisions, which is to balance exploration and exploitation of competences and resources (Crossan et al., 1999). The balancing-act is essential for companies that are exposed to environmental uncertainty like digital disruption (O'Reilly & Tushman, 2013). Linking to the empirical data, my finding suggests that a central theme in the decision-making on what digital knowledge to develop is the aforementioned need for Partners to have immediate kick-back on investments. On the one hand, they can put resources in cash-cow projects that utilizes existing knowledge base. On the other hand, they can take on new digital projects that require different knowledge. This kind of tradeoff between where to put the limited resources of the firm boils down to either receiving

the financial benefit immediately by doing the work that they are good at versus investing time and resources to gain new knowledge to ensure relevance for future projects. My data suggests that the short-term gain drives the exploitation.

Moreover, linking back to the leader's sense of urgency, the competitors and clients on the market shape the sense of urgency. The reason for that is found in my data, where it is evident that the knowledge agenda of what to explore versus exploit is set by the market actors. It became apparent that digital skills create a competitive advantage to win new projects and clients for a PSF. If the firm does not adapt to the competitors' actions and clients demand, they will become outcompeted and ultimately irrelevant on the market exposed to digital disruption. My findings suggest that due to the fear of that, the professionals follow the direction of the clients demand and ensure to build the knowledge that competitors are pursuing. Consequently, these two actors drive the exploration, as seen in figure below.

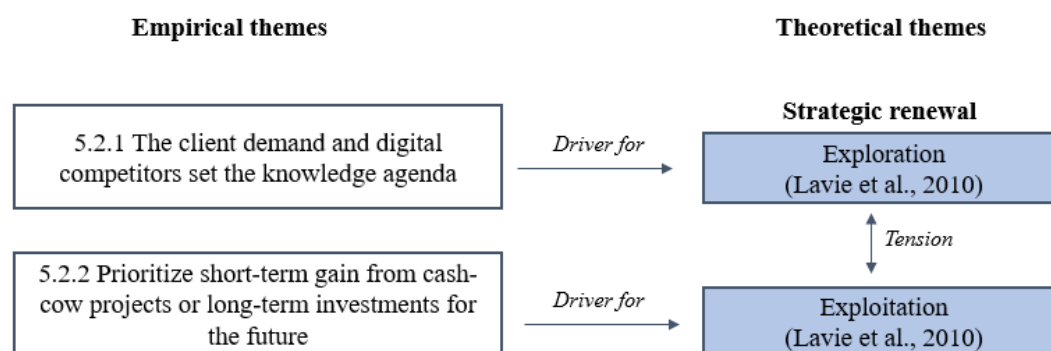


Figure 15: Depicting the link between the empirical findings and strategic renewal literature concerning the need to balance exploration and exploitation. The clients and competitors drive exploration whilst the firm's emphasis on short-term projects drives exploitation, resulting in a tension arising.

6.3 Different Prioritizations for Internal Versus External Knowledge Building

Interestingly, both themes above differentiate between knowledge that is required to deliver the client's service versus knowledge required to do internal work procedures more efficient. It became evident in all interviews that there is a clear distinction between the two when it comes to deciding on what knowledge to prioritize. Since the firm is a PSF, their primary focus is on client relationships (Empson et al., 2015) and service delivery. This in turn result in less emphasis on the knowledge base needed to improve the way they do their own work by using digital skills.

Moreover, Consulting even separated between whether their own work and required knowledge is becoming disrupted by technology or if their client's is. They identified a higher risk of digital disruption for their client's knowledge than their own work, which in turn led them to prioritize learning new knowledges that was needed in their client's industry whilst the firm's internal working routines was deprioritized. Consequently, the sense of urgency and the leader's decision on prioritization can be affected by it, as depicted in Figure 16. My data indicates that

this separation affects the leaders' role in prioritizing resources, changing and recognizing digital knowledge building.

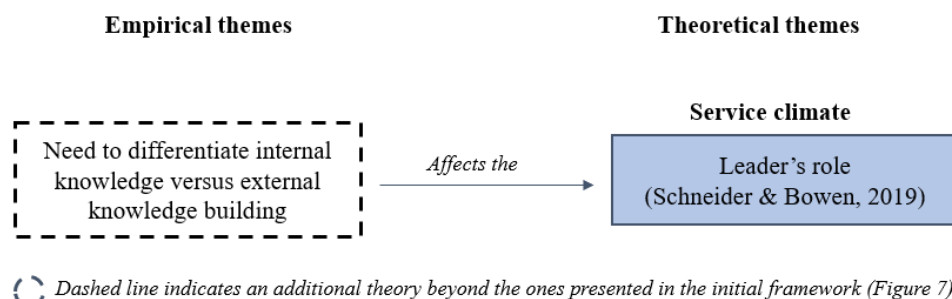


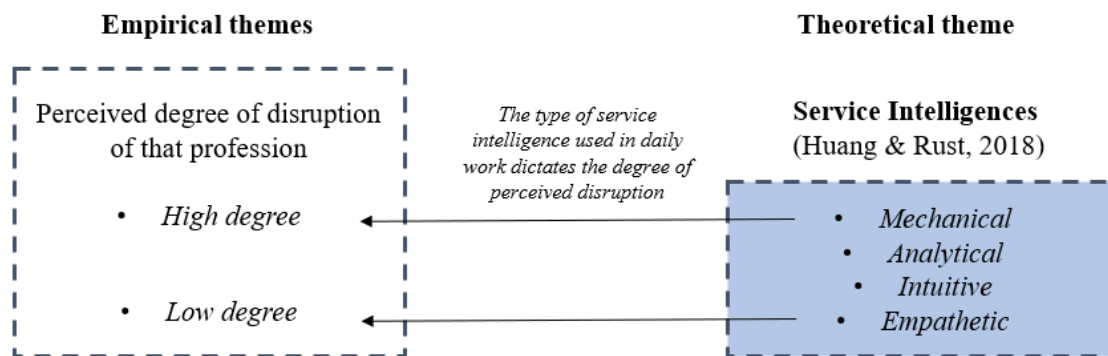
Figure 16: Depicting the empirical finding where the interviewees differentiate between internal and external knowledge building in how they prioritize what digital knowledge to build. The external knowledge building is prioritized over internal in the firm, and even more so for Consulting. The distinction affects the leader's sense of urgency and prioritization of knowledge building, which in turn dictates the service climate.

6.4 Different Professions' Service Intelligences Determines Their Degree of Adopting Digital Knowledge and Prioritization of Renewal

My findings clearly show a discrepancy between the service lines in how they adopt and prioritize to build digital knowledge. Assurance adopt and emphasize the creation and maintenance of digital competences to a larger degree than Consulting. The former focuses on both the internal and the external knowledge building whilst the latter focuses primarily on the external. According to my findings, Finance and Legal, can be considered somewhere in between. The reason for this discrepancy could partly be explained by the fact that Assurance is a profession that is currently being disrupted by technology whilst Consulting does not see the same disruption so far. In fact, as the respondents explained, their professions are disrupted to different degrees, which in turn determines the priority of internal versus external knowledge building. A profession that does not feel threatened by disruption will have lower sense of urgency to emphasize and invest in internal knowledge building. Instead, time and resources will be put on the existing cash-cow client projects that generates immediate kick-back.

A reason can be found in the service intelligence literature by Huang & Rust (2018) where the type of intelligence that a profession is built on will determine the pace at which they will become digitally disrupted in their way of doing work. As seen in my data, Assurances' work procedures are more repetitive and standardized with mechanical elements such as data handling. This can be explained by the fact that accounting professions are highly professionalized, regulated and have a clearly defined knowledge standard (Von Nordenflycht, 2010). This in turn leaves limited discretionary freedom for creativity in the service delivery (Reihlen & Werr, 2014). Consulting on the other hand have less professionalized workforce (Von Nordenflycht, 2010) with less regulation, more client-customized and creative solutions in their service delivery that requires more analytic, intuitive and empathetic intelligence. Consequently, the mechanical tasks of Assurance are easier to automate or replace with technological solutions than for Consulting. Thus, it is easier to automate some of the standardized tasks for classic professions than the more intuitive and innovative services of

neo-classic professions like Consulting (Groß & Kieser, 2006). This in turn creates an incentive to focus on internal knowledge building for the classic professions being Assurance that can leverage current technology to automate mechanical tasks than for Consulting. As a result, the different professions adopt and prioritize differently in what digital knowledge to build and to what degree.




 Dashed line indicates an additional theory beyond the ones presented in the initial framework (Figure 7).

Figure 17: Depicting a correlation wherein the level of service intelligence that is used in the daily tasks of different service lines will affect the perceived degree of disruption of that particular profession. Tasks that includes lower level of service intelligences (mechanical) will be the first ones replaced on a task level by technology, causing a higher perceived degree of disruption. This is the case for Assurance whilst Consulting perceive lower degree of disruption since their tasks typically include higher levels of service intelligences.

7. Discussion

This section deepens the analysis further by examining the theoretical contributions from this study. Lastly, the derived conceptual model is presented to bridge the empirical findings with literature. The aim is to structure an answer to the identified research questions.

7.1 Theoretical Implications

This study contributes to the contemporary topic with relatively sparse literature that elaborates on the effects of digital disruption on PSFs (Skjolsvik et al., 2018). More importantly, it presents necessitated empirical results on a multi-PSFs' strategic renewal initiatives concerning digital knowledge building. The reason for focusing on knowledge building is because the core competence in PSFs is knowledge (Empson et al., 2015) and the fourth industrial revolution is knowledge-based (Susskind & Susskind, 2015). My findings nuance the disruption of PSFs (Susskind & Susskind, 2015) and contributes with empirical evidence for discrepancies in the development of this disruption for different professions (Christensen et al., 2013) based on service intelligence.

My findings elaborate on both an organizational (macro-)level and on a more detailed professional (meso-)level. Thus, my study addresses multiple professions in one organization and how they can differ in their enactment of digital disruption through renewal of the digital knowledge base. Notably, all four professions have the same renewal initiatives in terms of central HRD efforts and the desirable service climate to strive for but adopt digital knowledge building differently, as depicted below. The following study sheds light on the divergence and explores why they enact digital disruption differently.

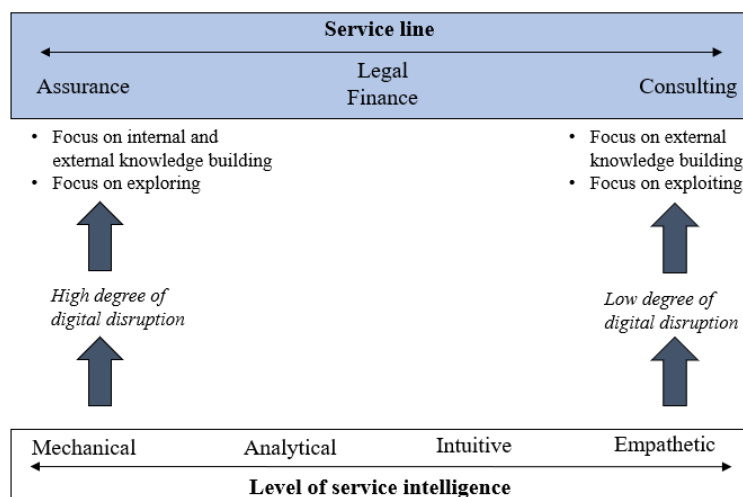


Figure 18: Illustrating the differences in adoption and prioritization of what type of digital knowledge to build, based on my empirical findings. Assurance perform mechanical task frequently that are exposed to a high degree of digital disruption. As a result, they need to renew their knowledge base both internally and externally whilst focus more on exploration. Consulting on the other hand, more frequently uses higher level of service intelligences in their tasks which is not experiencing extensive disruption. Therefore, they can continue exploiting cash-cow projects and building the external knowledge base. Legal and Finance appeared to be somewhere in between.

A theoretical contribution is made through the interdisciplinary framework wherein multiple research areas are coherently synthesized. This is done to provide a meaning to the process of renewal and understanding for discrepancies across professions. Some examples of theoretical contributions found in linking research fields together is expressed below.

The paper contributes with empirical data on the link between strategic renewal and the balancing act of exploration and exploitation in a multi-PSF context. More specifically, with factors affecting this balancing act in terms of what digital knowledge to put resources and efforts into. The short-term need for kick-back on investments drives the exploitation aspect. I also identified two interrelated actors that shape the sense of urgency in the firm related to digital disruption, being the i) clients' demand and ii) competitors' actions. Their way of addressing and choosing what knowledge to develop affects the PSF's knowledge agenda and drives the exploration. They reinforce one another, together with the firms' own knowledge agenda and ultimately create a momentum for change.

Another notable contribution of this study is the identified theoretical distinction between knowledge building internally to improve work procedures versus externally to establish knowledge to help the clients. Putting this in a multi-PSF context takes this finding even further to explain how the balancing act of exploiting and exploring internal versus external knowledge building, as seen in Figure 18. The two types of knowledge, even though they overlap to some degree in terms of content, are prioritized differently in a PSF since its primary focus is on clients (Empson et al., 2015).

My study contributes to the theoretical arena of HRD and its theories on activities concerning how to manage knowledge better throughout the organization (Sunalai & Beyerlein, 2015). This contribution is done by extending the three areas of HRD on how to create and use knowledge more efficiently in a firm expressed by Swanson and Holton (2001) of i) training and development, ii) organizational development, and iii) career development. My findings contribute with additional data that strengthens the triadic theory with empirical examples, all in accordance with past research.

The theoretical stream of service climate (Schneider & Bowen, 2019) could also benefit from my study with more specifications on how it is enacted in a multi-PSF setting and digital disruption context. Past research argues on a general level that the reward systems together with the leaders' role impact the service climate by their behavior and allocation of resources (Bowen & Schneider, 2014). This can also be linked to the P2 environment in a PSF where the leader independently decides how the work should be conducted (Greenwood & Suddaby, 2006). My data on the other hand contributes with specifications on what type of role the leader should take and what the reward system should entail. I thereby disentangle the theory to include specifications and in-depth factors that (de-)motivates service professionals to enact digital knowledge building in their work. I further contribute to the service climate research by addressing the link to technological readiness since it is an essential aspect dictating the willingness of the firm to adopt new digital knowledge (Parasuraman, 2000). My findings suggest that individual prerequisites like age and digital interest contributes to technological

readiness and ultimately a stronger service climate for digital knowledge building. Past research indicates that the willingness to adopt digital work procedures is less for older people than younger ones (Hanson, 2010). Based on my findings, I suggest that the younger employees in the firm has more incentives to adopt digital knowledge than the older ones that are closer to retirement. My contribution is that these unbundled theoretical lenses are then put together as a triadic force that dictates how the service climate (de-)motivates the firm to build digital knowledge.

My last contribution is additional empirical evidence for Huang & Rusts' (2018) idea of having job replacement taking place on a task level rather than a job level. My findings confirm the theory that the digital disruption effect on professions will depend on what service intelligence that is used in their tasks. In addition, this paper provides empirical evidence for accounting professions being more disrupted than management consultants, which in turn affects the sense of urgency in the firm and ultimately the service climate. Furthermore, I contribute to the theory by putting it in a multi-PSF context and providing explanatory value for the discrepancy between professions. This is done by linking back to Von Nordenflycht's (2010) taxonomy and definitions of classic- and neo-classic professions and how their characteristics can provide explanation as to why different types of professions renew their digital knowledge building differently.

7.2 Conceptual Model

Based on the above findings, a conceptual interdisciplinary model has been created to explain strategic renewal initiatives in a multi-PSF setting to build a digital knowledge due to digital disruption. The model is thematically organized to illustrate both the actions taken to renew the knowledge base on an organizational level and why the adoption and prioritization differs across service lines, and ultimately professions. Furthermore, the framework is based on figure 7 (chapter 3.4) together with an extension of my additional findings from the empirical data. The text below elaborates on the connections between different research themes (marked with numbers in the figure) that were confirmed by empirical data.

- i)* Due to digital disruption, PSFs need to take on strategic renewal initiatives regarding their core competence, knowledge (Crossan & Hurst, 2006). This process is done on an organizational level, with HRD activities and firms' service climate that enables or inhibits digital knowledge building.
- ii)* What dictates the service climate and HRD is in turn the distinction made between internal and external knowledge, which is a new contribution from the initial identified framework in chapter 3.4. In fact, the internal and external knowledge building can be exerted differently and have different priorities and content.
- iii)* Ultimately, that affects the tension arising from strategic renewal, between exploration versus exploitation of the limited resources at hand to decide what knowledge to focus on building.

iv) That in turn may differ between service lines and professions, depending on the level of disruption they are phasing and what service intelligence they are based on. The discrepancy between professions can thus be explained by how hard it is for technology to automate and replicate certain tasks, being easier with the mechanical ones than empathetic intelligence tasks (Huang & Rust, 2018). Since Assurance differs greatly on task level in their service delivery from for example Consulting, all service lines experience different degrees of disruption that conclusively changes their tasks and knowledge base. Depending on how disrupted different service lines are, the balancing act of prioritizing exploring and exploiting new knowledge bases differs.

○ Dashed line indicates my contributions found in the empirical data beyond the ones presented in the initial framework (Figure 7).

8. Conclusion

The last section concludes with key findings, managerial implications, identifies limitations and encourages future research.

8.1 Key Findings

From my analysis of the empirical findings and connecting it with my theoretical framework, I conclude the following key findings:

- i) *To strategically renew the knowledge base in multi-PSF, the firm should engage in HRD activities to develop and create, recruit, acquire externally, and lastly train employees to remain competitive on the market that is being digitally disrupted.*
- ii) *There is an identified triadic force consisting of the leaders' role, employees' technological readiness and the organization's reward systems that shapes the service climate that in turn enables or inhibits digital knowledge building.*
- iii) *When looking at strategic renewal of a multi-PSFs' knowledge base, one has to separate the internal knowledge (how the work is executed) from external knowledge (what is needed to deliver service to the client). The prioritization between the two and how far they have progressed most likely differs. This in turn dictates the degree of exploration versus exploitation a firm chooses to take on in building digital knowledge.*
- iv) *Professions with tasks that requires lower service intelligences experience more digital disruption and conclusively higher sense of urgency for adopting new digital knowledge.*

8.2 Managerial Implications

The findings of this study provide insights and practical learnings for multiple stakeholders and practitioners. Firstly, other Partners and leaders in the Big Four can use these insights as valuable learnings about the industry as a whole and where it is heading. This study provides opportunity for reflection on the impact that the client demand and customers actions have on their knowledge agenda. This to guide the Partners in how they can either listen in more or less into the market shifts and change their procedures of creating and acquiring digital knowledge. They can also learn and assess their own strategic renewal initiatives to compare their HRD activities and service climate to see what they could improve or add to enable even greater digital knowledge building. The Big Four can gain insight in discrepancies in adoption of digital knowledge and learning between service lines to then know how to adjust their knowledge agenda.

Moreover, it provides value to other types of firms with similar multi-professional structure, or matrix organizational structure by providing understanding for intra-organizational discrepancies in willingness to adopt and prioritize digitalization. Leaders in all types of firms

that are phasing digital disruption can gain insights in how their actions (de-)motivates the employees to foster digital knowledge building. For instance, the importance of them prioritizing resources on training, implementing new digital functions in the organization or adjusting the rewards to include digital knowledge building.

Even other types of knowledge-intensive firms can learn and draw parallels to their own work, (Werr & Stjernberg, 2003). More specifically other firms can gain insights in how to manage knowledge and human capital (Donaldson, 2001) in this digital era and how to increase and update their technological capacity and knowledge (MinHwa et al., 2018). Additionally, these findings stress the importance of reflecting on what service intelligence different knowledge professions is built on and how disrupted they are by technology. By doing so, they can identify what tasks that can be automated through technology and which ones that cannot. This in order to increase efficiency and ensure relevance on the market to not become outcompeted by digital competitors.

The employees in a PSF can gain a better understanding for the rationale of decision-making and the challenges of exploration and exploitation that their Partners currently undergo. Also, the insight regarding the distinction between internal and external knowledge building can empower employees to become more aware of balancing their knowledge building to also focus on their internal knowledge to see how they might make their own work more efficient and value-adding.

Another practitioner of interest could be future recruits that want to join a PSFs, to understand where the market is heading in terms of recruitment profile they are looking for and ultimately acquire new digital competences to make themselves more competitive on the job market. All these actors confirm the great value this study has from multiple stakeholders' perspectives.

8.3 Theoretical Contributions

This study's primary theoretical contribution is within the research field of PSFs by adding empirical evidence through an explorative study on how it is affected by digital disruption. This was done by providing findings on the identified research gap and added to the scarce research area. Through my instrumental case study of one firm with multiple professions, I shed light on both classic- and neo-classic professions and identify potential discrepancies. This was done by identifying how strategic renewal initiatives through knowledge building are enacted in different professions that belongs to the same organization. Through this, I was able to gain a more multifaceted, granular and deeper understanding for how digital disruption has affected different professions.

Secondly, this study went deeper into the process aspect of strategic renewal to understand how a knowledge-intensive firm renew their knowledge to become more technology-focused. Hence, a theoretical contribution was achieved by portraying an interconnectedness between multiple research fields, being strategic renewal with service intelligence, HRD and service climate to understand digital knowledge building. Further, the study identified an additional

aspect to consider in future digital knowledge research, being the discrepancy between internal knowledge and external. This distinction aims at clarifying differences in the knowledge base and how it is adopted.

All of this aims at inspiring future researchers to explore the topics further and provide additional empirical richness to my findings and the interconnectedness of the used research fields to understand PSFs even better.

8.4 Limitations

Worth addressing is the limitation of this study's generalizability and transferability. This study revises only one multi-PSF and is geographically delimited to the Nordics with a focus on Sweden. Furthermore, given the fact that it is a case study, the generalizability of this study for knowledge-intensive firms can be questioned (Bryman & Bell, 2011), even if the firm is representative for a typical PSF. Thus, further research is called upon to test my findings on multiple firms and separate professions to validate the generalizability.

Secondly, digitalization is a contemporary topic that is unfolding at this instant with constant changes and disruptions taking place that forces firms to adjust and be agile. My analysis, findings and propositions may only be seen as a snapshot of the current situation rather than addressing long-term strategic renewal initiatives. Consequently, this study might only be applicable at this very instant and become outdated for the future. This in turn calls into question the transferability of my study and addresses the need for a longitudinal study that can encapsulate the digital disruption over time. However, due to the time constraint of this thesis, it was not feasible to be conducted.

8.5 Future Research

Further research on PSFs knowledge building in a digital disruption context would be valuable to strengthen the research field, given its current insufficient past research. My study opens up for a fascinating continuation on exploring and advancing the theorization of digital knowledge building as a result of digital disruption. Further research that tests my propositions on how multi-PSFs renew their knowledge base and discrepancies between professions is desirable to strengthen its credibility.

Based on limitations stated above, further studies on other multi-PSFs and perhaps the other Big Four Firms would be beneficial to address potential differences and similarities. By contrasting, studies on smaller firms and on separate professions would also deem fitting as a complement to gain more granular and deeper insights. Also, conducting studies on a larger scale could potentially increase the generalizability of the study. Besides, studies that highlights knowledge-intensive firms in other geographical regions would add richness to the findings since it would highlight any potential cultural or geographical differences. Longitudinal studies of the same firm(s) and/or profession(s) are also encouraged to be done by future researchers

to capture the effects of digital disruption on PSFs over time and potentially increase the transferability of my findings.

Studies focused on the interconnectedness between the research fields I used in my study would be valuable to do since it would also strengthen my propositions and findings further. One example being how professions degree of service intelligence used in their daily tasks affect the balancing act of exploration and exploitation of resources for knowledge building. Other merited studies would be to separate all research fields and explore them in a PSF and digital disruption setting to a greater detail. For instance, research additional factors beyond the triadic forces I have identified that can foster a strong service climate that encourages digital knowledge building.

Since my study focuses on the *process* part of strategic renewal, studies that would highlight the other two factors (*content* and *outcome*) and its interrelations in a PSF setting undergoing digital disruption would be insightful and enrich the strategic renewal research area further.

One significant research contribution of this study is the need for a distinction between internal and external knowledge building and how it is being enacted. Therefore, a study that would highlight those two in knowledge-intensive firms and link it to more extensive theory would be interesting and help validating my findings. All of this together seeks to encourage and guide other researchers to elaborate on the insights from this study further to advance the theorization PSFs digital knowledge building in a context of digital disruption.

9. References

- Abbott, A. (1991). The future of professions: Occupation and expertise in the age of organization. *Research in the Sociology of Organizations: Organizations and Professions*, 8: 17–42.
- Agarwal, R., & Helfat, C.E. (2009). Strategic Renewal of Organizations. *Organization Science*. Vol. 20, No. 2, March-April 2009, 281-293.
- Agnew, H. (2016). Technology transforms Big Four hiring practices. *Financial Times*. Available at: <https://www.ft.com/content/d5670764-15d2-11e6-b197-a4af20d5575e>. (Accessed: 25 January, 2019).
- Alhalboosi, F. (2018). Human Resource Development. 09 September, 2018.
- Alvesson, M., & Kärreman, D. (2007). Constructing mystery: Empirical matters in theory development. *Academy of Management Review*, 32(4): 1265-1281.
- Alvesson, M. (2000). Social identity and the problem of loyalty in knowledge-intensive companies. *Journal of Management Studies*, 37: 1101–1123.
- Andal-Ancion, A., Cartwright, P. A., & Yip, G. S. (2003). The digital transformation of traditional business. *MIT Sloan Management Review*, 44(4), 34-41.
- Andersson P., & Rosenqvist, C. (2018). Strategic Challenges of Digital Innovation and Transformation. *Managing Digital Transformation*. Stockholm School of Economics Institute for Research.
- Autor, D. H. & Dorn D. (2013). “The Growth of Low-Skill Service Jobs and the Polarization of the US Labor Market.” *American Economic Review*, 103 (5), 1553-1597.
- Baaij, M. G. (2013). *An Introduction to Management Consultancy*. Sage Publications.
- Barley, S. R. (1990). Images of imaging: Notes on doing longitudinal field work. *Organization Science*, 1: 220 – 247.
- Bazigos, M., & Harter, J. (2016). Revisiting the matrix organization. *McKinsey Quarterly*. 1 January, 2016. Available at: <https://www.mckinsey.com/business-functions/organization/our-insights/revisiting-the-matrix-organization>. (Accessed: 8 May, 2020).
- Beyerlin, M., Collins, R., Jeong, S., Philips C., Sunalai, S., & Xie, L. (2017). Knowledge Sharing and Human Resource Development in Innovative Organizations. *Intech Open*. Ch. 2.
- Bhaskar, R. (1998). *The possibility of naturalism: A philosophical critique of the contemporary human sciences*. 3rd edition. London: Routledge.
- Blair, M. M., & Kochan, T. A. (2000). *The new relationship: Human capital in the American corporation*.
- Blix, M. (2015). *The economy and digitalization – opportunities and challenges*. Svenskt Näringsliv.

Blut, M., & Wang, C. (2019). Technology readiness: a meta-analysis of conceptualizations of the construct and its impact on technology usage. *J. of the Acad. Mark. Science*.

Bowen, D.E. & Schneider, B (2014). A Service Climate Synthesis and Future Research Agenda, *Journal of Service Research*, 17 (1), 5-22.

Bradley, J., Loucks, J., Macaulay, J., Noronha, A., & Wade, M. (2015). Digital vortex: How digital disruption is redefining industries. Global Center for Digital Business Transformation: An IMD and Cisco initiative.

Brinkemann, S. (2013). *Qualitative Interviewing: Understanding Qualitative Research*. Oxford University Press, USA.

Brivot, M. (2011). Controls of Knowledge Production: Sharing and Use in Bureaucratized Professional Service Firms. *Organization Studies* 32(4): 489 – 508.

Bryman, A., & Bell, E. (2011). *Business Research Methods*. Oxford: Oxford University Press.

Brynjolfsson, E. (1 March, 2017). How to Thrive – and Survive – in a World of AI Disruption. MIT Sloan Management Review. Available at: <https://sloanreview.mit.edu/article/how-to-thrive-and-survive-in-a-world-of-ai-disruption/>. (Accessed: 10 February, 2019).

Brynjolfsson, E., & McAfee, A. (2011). *Race Against the Machine: How the Digital Revolution is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the Economy*; Digital Frontier Press: Lexington, MA, USA.

Brynjolfsson, E., & McAfee, A. (2016). *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*. New York: W. W. Norton & Company: 1 ed.

Castaldi, C., & Giarratana, M. S. (2018). Diversification, Branding, and Performance of Professional Service Firms. *Journal of Service Research* 2018, Vol 2 1(3) 353-364. Sage Publications.

Carlsson-Wall, M. & Strömsten, T. (2018). Robotisation of accounting in multi-national companies: early challenges and links to strategy. *Managing Digital Transformation*. Stockholm School of Economics Institute for Research (SIR).

CFB Bots. (5 February, 2018). Disruptive Technologies and their Impact on the Future of Work. A Medium Corporation. Available at: https://medium.com/@cfb_bots/disruptive-technologies-and-their-impact-on-the-future-of-work-fedb85820e67. (Accessed: 7 January, 2019).

Chalofsky, N. (2007). The seminal foundation of the discipline of HRD: People, learning, and organizations. *Human Resource Development Quarterly*. 18, 431-442. 29 August, 2007.

Chui, M., Manyika, M., & Miremadi, M. (November, 2015). *Four Fundamentals of Workplace Automation*. McKinsey Quarterly. Available at:

<http://www.mckinsey.com/businessfunctions/digitalmckinsey/ourinsights/fourfundamentalsofworkplaceautomation>. (Accessed: 5 January, 2019).

Chui, M., Manyika, M., & George, K. (September 2017). Human + machine: A new era of automation in manufacturing. McKinsey Quarterly. Available at: <https://www.mckinsey.com/business-functions/operations/our-insights/human-plus-machine-a-new-era-of-automation-in-manufacturing>. (Accessed: 3 February, 2019).

Christensen, C. M. (1997). *The innovator's dilemma: when new technologies cause great firms to fail*, Harvard Business School Press, Boston, Massachusetts.

Christensen C. M., Wang, D., & Van Bever, D. (October, 2013). Consulting on the Cusp of Disruption. Harvard Business Review. Available at: <https://hbr.org/2013/10/consulting-on-the-cusp-of-disruption>. (Accessed: January 28, 2019).

Cooper, D. J., Hinings, C. R., Greenwood, R., & Brown, J. L. (1996). Sedimentation and transformation in organizational change: The case of Canadian law firms. *Organization Studies*, 17: 623–647.

Crossan, M. M., Lane, H. W., & White, R. E. (1999). An organizational learning framework: From intuition to institution. *Academy of Management Review*, 24(3), 522–537.

Crossan, M. M., & Hurst, D. K. (2006). Strategic renewal as improvisation: reconciling the tension between exploration and exploitation. Elsevier. *Ecology and Strategy Advances in Strategic Management*, Vol. 23, 273-298.

Deloitte. (2017). The fourth revolution is now: are you ready? Future of operations. Available at: <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Strategy/gx-strategy-ops-the-fourth-revolution-now.pdf>. (Accessed: 10 February, 2020).

Denzin, N. K. (1978). *The Research Act*, 2d ed. New York: McGraw-Hill.

Desimone, R.L., Werner, J.M. & Harris, D.M.(2002) *Human Resource Development*. (3rd ed) Orlando, Harcourt College Publishers.

Doherty, R. (26 February, 2018). Deloitte remains world's largest firm. *Economia*. Available at: <https://economia.icaew.com/news/february-2018/deloitte-remains-worlds-largest-firm-pwc-ey-kpmg>. (Accessed: 25 March, 2019).

Donaldson, L. (2001) Reflections on knowledge and knowledge-intensive firms. *Human Relations*. 54/7: 955–63.

Doyle, J.K. (2004). Introduction to interviewing techniques, in Wood. D.W. (Ed.), *Handbook for IQP Advisors and Students*, Worcester Polytechnic Institute, Worcester, MA.

Drott, C., & Reinhold, L. (2018). May I have this dance? Digitalization's influence on dynamic capabilities for large incumbent accounting firms. *Stockholm School of Economics*. Spring 2018. Print.

- Dumay, J., & Qu, S. Q. (2011). The Qualitative Research Interview. *Qualitative Research in Accounting & Management*, Vol. 8 No. 3, 2011, pp 238-254.
- Ebert, C., & Duarte, C. (2016). Requirements engineering for the digital transformation: industry panel. In: *Requirements Engineering Conference IEEE 24th International*, pp. 4–5.
- Edmondson, A.C., & McManus, S. E. (2007). Methodological Fit in Management Field Research. *Academy of Management Review*, Vol 32, No. 4 1155-1179.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14: 532– 550.
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: opportunities and challenges. *Academy of Management Journal* 50(1): 25–32.
- Elger, T., (2010). Critical realism. In A.J. Mills, G. Durepos, & E. Wiebe (Eds), *Encyclopedia of case study research*, Vol. 1. p.253-557. Los Angeles, CA: SAGE.
- Empson, L., & Chapman, C. (2006). Partnership versus corporation: Implications of alternative forms of governance in professional service firms. *Research in the Sociology of Organizations: Professional Service Organizations*, 24: 139–170.
- Empson, L., Muzio, D. Broschak, J., & Hinings, B. (2015). *Researching Professional Service Firms: An Introduction and Overview*. Oxford Handbook of Professional Service Firms., 1-24.
- Falconbridge, J., & Muzio, D. (2008). Organizational professionalism in globalizing law firms. 1 March, 2008. SAGE Journals.
- Floyd, S. W., & Lane, P. J. (2000). Strategizing throughout the organization: management role conflict in strategic renewal. *Academy of Management Review* 2000, Vol. 25. No. 1, 154-177.
- Fitzgerald, M., Kruschwitz, N., Bonnet, D., & Welch, M. (2013). Embracing Digital Technology: A New Strategic Imperative. MIT Sloan Management Review, Research Report.
- Ford, M. (2015). *The Rise of the Robots: Technology and the Threat of Mass Unemployment*; Oneworld Publications: Oxford, UK.
- Frey, C.B., & Osborne, M., (2013). The Future of Employment: How Susceptible are jobs to computerisation? *Technological Forecasting and Social Change*. Vol. 114, January 2013. 254-280.
- Gardener Glossary. Digitalization. (2018). Available online: <https://www.gartner.com/it-glossary/digitalization/> (accessed on 12 December, 2019).
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2012). *Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology*. Sage Publications.

- Glaser, B. G. & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine Publishing.
- Gobble, M. M. (2018). Digitalization, Digitization, and Innovation, *Research-Technology Management*, 61:4. 56-59.
- Greenwood, R., Hinings, C. R., & Brown, J. L. (1990). ‘‘P2-Form’’ strategic management: Corporate practices in professional partnerships. *Academy of Management Journal*, 33(4): 725–755.
- Greenwood, R., Li, S. X., Prakash, R., & Deephouse, D. L. (2005). Reputation, Diversification, and Organizational Explanations of Performance in Professional Service Firms. *Organization Science*. 16/6: 661–73.
- Greenwood, R., Suddaby, R., & McDougald, M. (2006). Professional Service Firms. *Research in the Sociology of Organizations*, Volume 24: 1–16.
- Groß, C., & Kieser, A. (2006). Consultants on the way to professionalization? *Research in the Sociology of Organizations*, 24: 69-100.
- Groover, M. P. (2001). *Automation, production systems and computer-integrated manufacturing*, 2nd ed. Upper Saddle River, NJ: Prentice Hall.
- Geertz, C. (1973). *The interpretation of cultures: Selected essays* (Vol. 5019). Basic books.
- Guba, E. G. & Lincoln, Y. S. (1994). *Competing Paradigms Research I*: N. K. Denzin & Y. S. Lincoln. Red., *Handbook of Qualitative Research*. Thousand Oaks, CA. Sage Publications.
- Hanson, V.L. (2010). Influencing technology adoption by older adults. *Interacting with Computers* 22(6). 502-509, November, 2010.
- Haslinda, A. (2009). Evolving terms of human resource management and development. *The Journal of International Social Research*, Vol. 2/9. Fall 2009.
- Hausberg, P.J., Liere-Netheler, K., Packmohr, S., Pakura, S., & Vogelsang, K. (2019). Research streams on digital transformation from a holistic business perspective: a systematic literature review and citation network analysis. 8 November, 2019. *Journal of Business Economics*, 89:931-963.
- Hill, C., & Rothaermel, F. (2003). The Performance of Incumbent Firms in the Face of Radical Technological Innovation. *The Academy of Management Review*, 28(2), 257-274.
- Hinings, C. R., Brown, J. L., & Greenwood, R. (1991). Change in an autonomous professional organization. *Journal of Management Studies*, 28. 375–393.
- Hinings, B., Gegenhuber, T., & Greenwood, R., (2018). Digital innovation and transformation: an institutional perspective. *Inf Organ* 28(1):52–61.
- Hoepfl, M. C. (1997). Choosing qualitative research: A primer for technology education researchers. *Journal of Technology Education*, 9(1), 47-63.

- Huang, M. H., & Rust, R. T. (2018). Artificial intelligence in service. *Journal of Service Research*, 21(2), 155-172.
- Hunton, J. E., & Rose, J. M. (2010). 21st Century Auditing: Advancing Decision Support Systems to Achieve Continuous Auditing. *Accounting Horizons*. 24(2): 297-312.
- IBM. (2020). What is automation? Available at: <https://www.ibm.com/topics/automation> (Accessed by: 23 March, 2020).
- Ketokivi, M., & Choi, T. (2014). Renaissance of case research as scientific method. *Journal of Operations Management* 32. 232-230.
- Kronblad, C. (2019). The last hour: how digitalization has transformed firms in the legal industry. Chalmers University of Technology.
- Lavie, D., Stettner, U., & Tushman, M. (2010). Exploration and exploitation within and across organizations. *The Academy of Management Annals*. Vol. 4. No. 1, 2010, 109-155.
- Leicht, K., & Lyman, E. C. W. (2006). Markets, institutions, and the crisis of professional practice. *Research in the Sociology of Organizations: Professional Service Firms*, 24. 17–44.
- Lincoln, Y. S., & Guba, E. (1985). *Naturalistic Inquiry*. Beverly Hills, CA. Sage Publications.
- Liu, K., Nakata, K., Li, W., & Baranauskas, C. (2018). Digitalisation, Innovation, and Transformation. 18th IFIP WG 8.1 International Conference on Informatics and Semiotics in Organisations. ICISO 2018 Reading. UK. July 16-19, 2018.
- Loebbecke, C., & Picot, A. (2015). Reflections on societal and business model transformation arising from digitization and big data analytics: A research agenda. *J. Strateg. Inf. Syst.* 2015, 24, 149–157.
- Lorentz, P., Smahel, D., Metykova, M., & Wright, M. (2015). *Living in the Digital Age: Self-presentation, networking, playing, and participating in politics*. Muni Press. Masarykova Univerzita.
- Lorsch, J., & Tierney, T. (2002). *Aligning the stars: How to succeed when professionals drive results*. Boston: Harvard Business School Press.
- Löwendahl, B. R. (1997). *Strategic management of professional service firms*. 2nd edition. Copenhagen: Copenhagen Business School Press.
- Maister, D. H. (1993). *Managing the Professional Service firm*. New York: Free Press. Simon & Schuster.
- Malhotra, N., & Morris, T. (2009). Heterogeneity in Professional Service Firms. *Journal of Management Studies*. 46(6): 895- 922.

- Manyika, J., Chui, M., Bughin, J., Bisson, P., & Marrs, A. (2013). *Disruptive technologies: Advances that will transform life, business, and the global economy*, McKinsey Global Institute, San Francisco, CA.
- March, J. G. (1991). Exploration and exploitation in organization learning. *Organization Science*, 2, 71–87.
- Marsh, D. (14 September, 2018). How Digital Transformation is Shaping Industries. CIO. Available at: <https://www.cio.com/article/3305780/how-digital-transformation-is-shaping-industries.html>. (Accessed: 18 February, 2019).
- McAfee, A., & Brynjolfsson, E. (2017). *Machine, platform, crowd: Harnessing our digital future*. WW Norton & Company.
- Mezghani, K., & Aloulou, W.J. (2019). *Business transformations in the era of digitalization*. January, 2019. IGI Global.
- MinHwa, L., Pyka, A., Yun, J., & Won, D. (2018). How to Respond to the Fourth Industrial Revolution, or the Second Information Technology Revolution? Dynamic New Combinations between Technology, Market, and Society through Open Innovation. *Journal of Open Innovation. Technology, Market and Complexity*.
- Monnappa, A. (29 April 2020). Data Science vs. Big Data vs. Data Analytics. Available at: <https://www.simplilearn.com/data-science-vs-big-data-vs-data-analytics-article> (Accessed: 3 May, 2020).
- Morris, T., & Empson, L. (1998). Organization and expertise: An exploration of knowledge bases and the management of accounting and consulting firms. *Accounting, Organizations and Society*, 23: 609–624.
- Muller, E., & Doloreux, D. (2007). The key dimensions of knowledge-intensive business services (KIBS) analysis: a decade of evolution. *Institute Systems and Innovation Research*. No U1/2007.
- Murray, A. (22 April, 2015). Fortune’s tech coverage: Your guide for tumultuous times. *Fortune*. Available at: <http://fortune.com/2015/04/22/fortune-new-gigaom-writers/>. (Accessed: 10 February, 2019).
- Mühleisen, M. (2018). The long and short digital revolution. *Finance & Development*, June 2018. Vol. 55, No. 2. International Monetary Fund. Available at: <https://www.imf.org/external/pubs/ft/fandd/2018/06/impact-of-digital-technology-on-economic-growth/muhleisen.htm>. (Accessed on 10 April, 2020).
- Nanda, A. (2002). *Professional codes of ethics*. Background note, Harvard Business School, Boston.
- Nilén, D. (2015). *Digital innovation and changing identities: investigating organizational implications of digitalization*. Umeå University.

- Nolan, M.R., Hanson, E., Magnusson, L., & Andersson, B. (2003). Gauging quality in constructivist research: The Aldre Vast Sjuharad model revisited. *Quality in Ageing*, 4(2), 22-27.
- Noy, C. (2008). Sampling Knowledge: The Hermeneutics of Snowball Sampling in Qualitative Research. *International Journal of Social Research Methodology*, 11, 327-344.
- Opdenakker, R. (2006). Advantages and disadvantages of four interview techniques in qualitative research. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 7(4), Art. 11.
- O'Reilly, C. A., & Tushman, M. L. (2013). Organizational Ambidexterity: Past, Present and Future. *Academy of Management Perspectives*, 27(4), 324–338.
- Parasuraman, A. (2000). Technology readiness index (TRI) a multiple-item scale to measure readiness to embrace new technologies. *Journal of Service Research*, 2(4), 307–320.
- Porter, M.E. & Heppelmann, J.E. (2014). How smart, connected products are transforming competition. *Harvard Business Review*, November 2014. Available at: <https://hbr.org/2014/11/how-smart-connected-products-are-transforming-competition> (Accessed: 9 January, 2020).
- Rachinger, M., Rauter, R., Müller, C., Vorraber, W. & Schirgi, E. (2018). Digitalization and its influence on business model innovation. *J. Manuf. Technol. Manag.* 2018.
- Rajan, R., & Zingales, L. (2000). Governance of the new enterprise. In X. Vives (Ed.), *Corporate governance: Theoretical and empirical perspectives*: 201-227. Cambridge, U.K.: Cambridge University Press.
- Schumacher, A. Sihni, W. & Erol, S. (2016). Automation, digitization and digitalization and their implications for manufacturing processes. *International scientific Conference Bucharest, Romania*, 28/29 October 20.
- Ramaswamy, V., & Ozcan, K. (2016). Brand value co-creation in a digitalized world: an integrative framework and research implications. *International Journal of Research in Marketing*, 33(1), 93-106.
- Reihlen, M. & Werr, A. (2012). *Handbook of Research on Entrepreneurship in Professional Service Firms*. Cheltenham: Edward Elgar Publishing.
- Reihlen, M., & Werr, A. (2014). *Entrepreneurship and Professional Service Firms – A Literature Review*. Discussion Paper Series. Otto Group Chair of Strategic Management Institute of Corporate Development.
- SAP. (2017). *Professional Services on the Brink of Disruption: Delivering Nonlinear Growth Through Digitalization*.
- Saunders, M., Lewis, P., & Thornhill, A. (2012). *Research Methods for Business Students*, (6th ed.) London: Pearson.

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H & Jinks, C. (2017). Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & Quantity* Volume 52, Issue 4. 1893 - 1907.

Sayer, A. (1992). *Method in social science: A realist approach*. 2nd edition. London: Routledge.

Schmitt, A., Raisch, S. & Volberda, H. W. (2016). Strategic Renewal: Past Research, Theoretical Tensions and Future Challenges. *International Journal of Management Reviews*, 20:81-98.

Schneider, B., White, S.S., & Paul, M. C., (1998). Linking Service Climate and Customer Perceptions of Service Quality: Tests of a Causal Model. *Journal of Applied Psychology*, 83 (2), 150.

Schneider, B., & Bowen, D.E., (2019). Perspectives on the Organizational Context of Frontlines: A Commentary. *Journal of Service Research*, 22 (1), 3-7.

Schumacher, A. Sihni, W. & Erol, S. (2016). Automation, digitization and digitalization and their implications for manufacturing processes. International scientific Conference Bucharest, Romania, 28/29 October 20.

Schwab, K. (2017). *The Fourth Industrial Revolution*. New York: Crown Publishing Group.

Schwab, K. (2015). The fourth industrial revolution: What it means and how to respond. *Foreign Affairs*. Available at: <https://www.foreignaffairs.com/articles/2015-12-12/fourth-industrial-revolution>

Sharma, A. (1997). Professional as Agent: Knowledge Asymmetry in Agency Exchange. *Academy of Management Review* 22(3): 758–798.

Sharp, J.A., Peters, J., & Howard, K. (2002) *The Management of a Student Research Project* (3rd ed). Aldershot: Gower.

Singh, J., Michael B., Todd A., & Brown, T., (2017), The Emergent Field of Organizational Frontlines. *Journal of Service Research*, 20 (1), 3-11.

Skjolsvik, T., Breunig, K. J., & Perner, F. (2018). Digitalization of Professional Services: The Case of Value Creation in Virtual Law Firms. *Managing Digital Transformation*. Stockholm School of Economics Institute for Research.

Skjolsvik, T., Perner, F., & Breunig, K. J. (2018). Digitalization of professional services: the case of value creation in virtual law firms. February, 2018. *Managing Digital Transformation*, Ch. 7.

Smets, M., Morris, T., von Nordenflycht A., & Brock, D.M., (2017). 25 Years Since ‘P2’: Taking Stock and Charting the Future of Professional Firms. *Journal of Professions and Organization*, 4 (2), 91-111.

- Srai, J., & Lorentz, H. (2019). Developing design principles for the digitalisation of purchasing and supply management. *J. Purch. Supply Manag.* 25(1), 78–98 (2019).
- Sunalai S, & Beyerlein M. (2015). Exploring knowledge management in higher education institutions: Processes, influences, and outcomes. *Academy of Educational Leadership Journal.* 2015;19: 289-308.
- Susskind, R. E., & Susskind, D. (2015). *The Future of the Professions: How Technology Will Transform the Work of Human Experts.* Oxford University Press, Oxford.
- Stake, R. E. (1995). *The Art of Case Study Research.* Thousand Oaks, CA. Sage Publications.
- Starbuck, W. (1992). Learning by knowledge-intensive firms. *Journal of Management Studies*, 29: 713–740.
- Strauss, A., & Corbin, J.M. (1998). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory.* Thousand Oaks, CA: Sage Publications.
- Swanson, R. A., & Holton, E. F. (2009). *Foundations of human resource development* (2nd ed.). San Francisco: Berrett-Koehler Publishers.
- Teece, D. J. (2003). Expert talent and the design of (professional services) firms. *Industrial and Corporate Change*, 12: 895–916.
- Thoman, D., & Lloyd, R. (2018). A Review of the Literature on Human Resource Development: Leveraging HR as Strategic Partner in the High Performance Organization. *Journal of International & Interdisciplinary Business Research.* Vol. 5, Article 9, June 2018.
- The Telegraph. (24 May, 2018). Digital transformation and professional Services firms: effects, shifts, and key strategic recommendations. Available at: <https://www.telegraph.co.uk/business/intelligent-business/digital-transformation-and-professional-services-firms/>. (Accessed: February 23, 2019).
- Tihinen, M. (Ed.), Kääriäinen, J. (Ed.), Ailisto, H., Komi, M., Parviainen, P., & Tanner, H., et al. (2016). *The Industrial Internet in Finland: on route to success?* (VTT Technology; No. 278). Espoo: VTT Technical Research Centre of Finland.
- Torres, D. (1991). What, if anything, is professionalism? Institutions and the problem of change. *Research in the Sociology of Organizations: Organizations and Occupations*, 8: 43–68.
- Tracy, S. J. (2010). Qualitative quality: Eight "big-tent" criteria for excellent qualitative research. *Qualitative inquiry*, 16(10). 837-851.
- Tripsas, M., & Gavetti, G. (2000). Capabilities, Cognition, and Inertia: Evidence From Digital Imaging. *Strategic Management Journal*, 21: 1147-1161.
- Tushman, M. L., & O'Reilly, C. A. (1997). *Winning through innovation: A practical guide to leading organizational change and renewal.* Boston, MA: Harvard Business School Press.

- Universum. (2018). World's Most Attractive Employers 2018. Available at: <https://universumglobal.com/wmae2018/>. (Accessed: 10 March, 2019).
- UN. (2020). The impact of digital technologies. Available at: <https://www.un.org/en/un75/impact-digital-technologies>. (Accessed: 20 April, 2020).
- Van Doorn, J., Mende M., Noble M.S., Hulland J., Ostrom A.L., Grewal D., & Petersen, A.J., (2017). Domo Arigato Mr. Roboto: Emergence of Automated Social Presence in Organizational Frontlines and Customers' Service Experiences. *Journal of Service Research*, 20 (1), 43-58.
- Van Duin, S., & Bakhsi, N. (2017). Perspective. Part 1: Artificial Intelligence Defined. Deloitte, March 2017. Available at: <https://www2.deloitte.com/se/sv/pages/technology/articles/part1-artificial-intelligence-defined.html> (Accessed: 3 May, 2020)
- Vasantham S. Tephillah, International. (2015). Benefits of Human Resource Development. *Journal of Research in Economics and Social Sciences*, Vol.5, Issue 9.
- Verhoef, P.C, Broekhuizen, T., Bart, Y., Bhattacharya, A., Qi Dong, J., Fabian, N., & Haenlein, M. (2019). Digital transformation: A multidisciplinary reflection and research agenda. 2 November, 2019). *Journal of Business Research*.
- Volbreda H. W., Mihalache, O. R., & Van den Bosch. (2014). Advancing management innovation: Synthesizing processes, levels of analysis, and change agents. *Organization Studies*, 35(9), 1245-1264.
- Von Nordenflycht, A. (2007). Is Public Ownership Bad for Professional Service Firms? Ad Agency Ownership, Performance, and Creativity. *The Academy of Management Journal*, Vol. 50, No. 2 (April 2007), 429-445.
- Von Nordenflycht, A. (2010). What is a professional service firm? Toward a theory and taxnonomy of knowledge-intensive firms. *Academy of Management Review*, 2010, Vol. 35, No. 1. 155-174.
- Warren, S. (2002). Show Me How It Feels to Work Here: Using Photography to Research Organizational Aesthetics. *Ephemera*, 2(3): 224-245.
- Welch, C., Piekkari, R., Plakoyiannaki, E., & Paavilainen-Mäntymäki, E., (2011). Theorising from case studies: Towards a pluralist future for international business research. *Journal of International Business Studies*. Vol. 42. No. 5. Qualitative Research in International Business. June/July 2011. 740-762.
- Werr, A., & Stjernberg, T., (2003). Exploring Management Consulting Firms as Knowledge Systems. *Organization Studies* 24/6: 881.
- Westerman, G., Calmédjane, C., Bonnet, D., Ferraris, P., & McAfee, A. (2011). Digital Transformation: A Roadmap for Billion-Dollar Organizations, pp. 1–68. MIT Sloan Management, MIT Center for Digital Business and Capgemini Consulting.

Winch, G., & Schneider, E. (1993). Managing the knowledge-based organization: The case of architectural practice. *Journal of Management Studies*, 30: 923–937.

Wirtz, J., Patterson P.G., Kunz, W.H., Gruber T., Lu V.N., Paluch S., & Martins, A., (2018)., Brave New World: Service Robots in the Frontline. *Journal of Service Management*, 29 (5), 907-931.

Wisskirchen, G., Thibault Biacabe, B., Bormann, U., Muntz, A., Niehaus, G., Jiménez Soler, G., & Brauchitsch, B. (2017). Artificial intelligence and robotics and their impact on the workplace, April 2017. IBA Global Employment Insititute (GEI).

World Economic Forum. (May, 2018). Digital Transformation Initiative Report 2018. Available at: <http://reports.weforum.org/digital-transformation/wp-content/blogs.dir/94/mp/files/pages/files/dti-executive-summary-20180510.pdf>. (Accessed: 5 March, 2019).

World Economic Forum. (January 2017). Digital Transformation Initiative: Professional Services Industry. White Paper, Accenture. Available at: https://www.accenture.com/_acnmedia/Accenture/Conversion-Assets/WEF/PDF/Accenture-Professional-Services-Industry.pdf. (Accessed: 15 February, 2019).

World Economic Forum Digital Transformation Initiative. (January 2017). Professional Services Industry, Executive Summary. Available at: <http://reports.weforum.org/digital-transformation/wp-content/blogs.dir/94/mp/files/pages/files/170328-dti-professional-services-industry-slideshare.pdf>. (Accessed: 21 March, 2019).

Yin, R.K., (2009). Case Study Research: Design and Methods. 4 edn. Los Angeles: SAGE Publications, Inc.

10. Appendix

Appendices for substantiating the methodological soundness of the thesis.

Appendix 1: List of Interviewees

Interviewee	Role	Division/Service Line	Date of Interview	Length of Interview	Interview Type
Partner 1	Partner	Assurance	2018-12-06	35 min	Face-to-Face
Partner 2	Partner	Finance	2018-12-11	60 min	Face-to-Face
Manager 1	Manager	Consulting	2018-12-11	70 min	Face-to-Face
Partner 3	Partner	Assurance	2018-12-12	35 min	Face-to-Face
Partner 4	Partner	Legal	2018-12-12	48 min	Face-to-Face
Director 1	Executive Director	Assurance	2018-12-13	55 min	Face-to-Face
Partner 5	Partner	Consulting	2018-12-17	45 min	Face-to-Face
Partner 6	Partner	Legal	2018-12-18	48 min	Face-to-Face
Manager 2	Manager	Business Development	2018-12-18	30 min	Face-to-Face
Partner 7	Partner	Consulting	2018-12-18	25 min	Face-to-Face
Partner 8	Partner	Assurance	2018-12-18	35 min	Face-to-Face
Partner 9	Partner	Consulting	2018-12-19	47 min	Face-to-Face
Partner 10	Partner	Consulting	2018-12-19	30 min	Face-to-Face
Partner 11	Partner	Assurance	2018-12-20	52 min	Face-to-Face
Partner 12	Partner	Legal	2018-12-20	30 min	Face-to-Face
Director 2	Executive Director	Assurance	2018-12-20	34 min	Face-to-Face
Manager 3	Senior Manager	Assurance	2018-12-21	43 min	Face-to-Face
Partner 13	Partner	Consulting	2019-01-08	54 min	Telephone
Manager 4	Senior Manager	Assurance	2019-01-14	55 min	Telephone
Partner 14	Partner	Consulting	2019-01-14	40 min	Telephone
Partner 15	Partner	Consulting	2019-01-16	55 min	Telephone
Manager 5	Senior Manager	Consulting	2019-01-18	66 min	Telephone
Manager 6	Manager	Consulting	2019-01-22	30 min	Telephone
Manager 7	Manager	Consulting	2019-01-22	64 min	Telephone

Appendix 2: Used Interview Guide

Prior to the interviews, I made sure to do proper research to understand the firm's structure, service lines and business properly to not focus valuable time on practicalities. In addition, one interview was conducted with an employee in Business Development in order to gain an overview of the firm.

Introduction to the research

- Presentation of the researcher and the scope of the thesis and its aim, explaining that it is not an assessment of "how well they do"
- Explanation of the interview process (recording, anonymity and structure)

Introduction to the interviewee

- Background to the person

- Role in the firm

Digitalization background questions

- Are they affected by digital disruption in their work? How?
- How has digitalization affected their service line within the last 5 years and how do they think it will in the coming 5 years?
- Have they adjusted anything in their business and amongst employees as a result?
- Has the market changed due to digital disruption? How?

Core questions

Their digital strategic agenda:

- How do they plan on adjusting their firm to cope with digital disruption?
- Do they have an explicit strategy for digital knowledge building? What is it?
 - How is it decided?
 - What factors do they consider when making the strategic plan?
 - How is it executed and followed-up on?
 - How is it assessed and who is responsible for it?
 - Are there any potential barriers to reach it? What?
- How do they prioritize and decide on what type of knowledge to invest in and focus on?
- Do they experience any challenge in deciding what knowledge to pursue and to what extent? If yes, what?

Current digital knowledge level amongst employees:

- How is the level of digital knowledge amongst the employees?
- Is there any skill gap? Within what and why?

Digital knowledge building:

- How do they build digital knowledge in the firm and how has it changed over the years
- How do they make sure to “upgrade” the already existing knowledge to become more digital
 - Do they provide any training? If yes, what and how is it digitally focused and how is it followed-up or assessed? Any incentives to do it?
 - Any knowledge sharing and transfer procedures across service lines
 - Any new roles or divisions, or any other organizational changes that have happened as a result of digitalization
- How do they acquire new knowledge from outside the firm and how has it changed over the last 5 years and how do you think it will look like in the coming 5 years?
 - Recruiting
 - Acquisitions and alliances

Concluding remarks

- Within which areas will there be new competences required to be developed within your service line for the future, do you think?
- Is there anything that the interviewee wants to add that could be of value?
- Do they know any other relevant people that could potentially be interviewed?
- Confirm if I could contact them again if clarifications are needed

Appendix 3: Data Structure

Illustrating an example of the data structure by looking at some of the identified dimensions.

Illustrative quotes	First-order codes	Theoretical categories	Dimension
<p>"We could have wished for even more technically specialized people in the Nordics, but that is coming up now as we grow as an organization. One example is that we start to integrate technical people in the service lines, one being cyber security specialist in Finance"</p> <p>"We have created a data analytics group including people with more technical background...they don't even have to have a University education but comes from high school and has a passion for technology"</p>	New organizational changes due to digital disruption (technical recruits and new technical divisions)	Organizational development	HRD practices that encourages digital expertise
<p>"If you look at the course catalogue for the yearly mandatory training days, you see another focus nowadays, much more digital skills, strategies and new technologies - much more than it has been before so the trend is pretty clear."</p> <p>"We have common training across service lines[...]The idea is to exchange knowledge and experiences about digital services and get away from the silo-thinking that is in our heritage."</p>	Changed training agenda to incorporate more digital topics and knowledge sharing across service lines	Training & development	
<p>"Communication and change management is important to be able to get buy in from the organization and the people so they feel motivated about the transition."</p> <p>"It is a leader-question, what type of incentives do the Partners have, because they have yearly dividend, so what incentives do they have to invest in new technologies and competences given that they will be Partners for a limited time."</p>	The importance of the leader's role as a (de-) motivator for digital knowledge building	Leadership roles	
<p>"There is very little space to become old and comfortable in this organization. We get a lot free from having a large group of young digital natives as employees."</p> <p>Young talent "is hungry and already has a foundation and engagement for those things."</p>	Employees' individual prerequisites works as (de-) motivator for attaining digital knowledge (age)	Technological readiness	Service climate fostering digital knowledge building
<p>"It's the customers mostly, together with the competitors. We need to be able to promise more than our competitors and then actually being able to deliver on it."</p> <p>"We have to be first to be able to use it as marketing purposes and win new customers...you have to keep your ear to the rail to hear what the customer demands and be able to sell our services. You have to show that you are in the forefront, or else you will not be chosen."</p>	Clients' demand together with the competitor's actions determines what digital knowledge the firm should focus on developing	Clients & competitors	
<p>"There are two aspects of digital transformation that you have to consider. One being what you offer, so transforming to your digital offerings. The second is how you operate, whether or not that is digital. Digital offerings is about digital tools etc. And it is very clear that what we do towards customer constitute a high percentage of our time and efforts."</p> <p>"it is not prioritized to develop ourselves internally, instead it is focus on clients first."</p>	Prioritization of client's knowledge need (external) over internal knowledge development	Internal vs external	
<p>"I'm not an expert on Assurance, but what I hear from the market is that this is a typical business area that could be disrupted. I don't see that happening with management consulting...I don't think we will have one Partner that goes around with a fantastic AI-tool that could do the work any time soon, I simply don't see it."</p> <p>"What we deliver to our customers are completely different across service lines, and that affects what possibilities there is of automation and digitalization. Book-keeping for instance provides many more opportunities to optimize through automation and digitalization. When talking about digital in the context of how we do our work and what we can automate through use of different tools, that will differ greatly across service lines. In Finance for instance, they do a lot of income tax declarations which are frequent tasks that should be easier to automate."</p>	Differences between service lines in how they are being disrupted by technology and how easily they can be replaced/compensated by technology	Level of service intelligence	Service intelligence dictates discrepancies in digital knowledge building procedures