REACTIVE, PROACTIVE OR CUTTING EDGE COMPETENCE STRATEGIES IN MANUFACTURING

Meeting the demands of dynamic capabilities in the era of digitalisation

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Abstract

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Purpose: This study aims to explore how managers navigate, in order to strategically develop their workforce's competence, in response to digitalisation.

Theory: The theoretical framework used to analyse the empirical findings is based on Teece et als (1997) theory on dynamic capabilities and different strategy theories. The strategy theories are connected to the traditional approach; with deliberate or emergent strategies (Mintzberg et al, 2009), Strategy as Practice; analysing the strategies by looking at the practitioners, practices and praxis (Whittington, 2006) and Wiltbank et als (2006) analysis of uncertainty; clarifying how managers shape strategies when faced with uncertainty.

Method: The research question was explored through a single case study in the manufacturing industry using a qualitative research design. Thus, seven informant interviews, and 16 semi-structured in-depth interviews have been conducted, complemented by a review of secondary documents. The data collected was coded and analysed through a grounded theory approach and presented with consideration to Wolcott's (1994) approach on transforming qualitative data.

Result: The empirical findings show that the navigation is based on the context of the business environment, the pace, level of input and challenges experienced in the business areas. The strategizing is mainly done through reactive strategies. Though, some proactive strategies are also identified. The future competence requirements anticipated by the managers are both related to skills and the mindset of people. Meanwhile, a challenge expressed is the limited level of support from HR or a strategic workforce planning process taking consideration to the current dynamic and uncertain business environment. This creates a need of a simple, easy to execute and adaptable process.

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1. Introduction

Digitalisation is a buzzword that many are trying to understand the meaning of and the business environment is facing several opportunities and challenges due to its implications. Digitalisation is affecting the way business is conducted, changing business models, bursting value chains into value networks and creating uncertainty. This has a big effect on the employment landscape (Rübmann, 2015; Eurofund IIoT, 2017). It is estimated to have significant impact on employment levels, occupations, competence and skills sets, leading to job displacements, widening skill gaps, job creation and heightened labour productivity (WEF, 2016), since organisations are trying to adapt in order to stay competitive. A report on the disruptive changes on the employment landscape, by the world economic forum, states;

> *In such a rapidly evolving employment landscape, the ability to anticipate and prepare for future skills requirements, job content and the aggregate effect on employment is increasingly critical for businesses, governments and individuals in order to fully seize the opportunities presented by these trends and to mitigate the undesirable outcomes.* (WEF, 2016:1).

Therefore, it is of interest to try to understand what digitalisation will mean to different industries, organisations, employees and institutions, how organisations navigate to be prepared and make changes in the employment landscape to stay competitive on the external market. An industry that is expected to be highly affected is manufacturing (WEF, 2016) since the manufacturing industry has many old and robust organisations that have operated in a rather stable environment for a long time. However, looking back a couple of years the customer's demands have changed; there is a higher pace and complexity (ibid). Customers want new, individual, high-quality and inexpensive products, with fast delivery (Rübmann, 2015). This and technological developments have led manufacturing organisations to converge into what is sometimes referred to as smart manufacturing, also called the era of Industry 4.0, with smart factory solutions. The key enabler for this is digitalisation (ibid; Eurofund IIoT, 2017) and to take advantage from this, industrial manufacturers need new operating models, aggressive hiring and smart partnerships (ibid). Therefore, there is an increasing demand for organisations to try to have speed, ability to be agile and dynamic, and a sense of the futures possible changes to create a fit with the environment. Thus, the organisation needs dynamic capabilities.

Dynamic capabilities are according to Schilke (2014) an organisation's actions and routines that affect change in the organisations internal resource base. Hence, by adapting and

replacing current resources, dynamic capabilities creates better matches between the external environmental conditions and the organisations internal resource base in order to reach competitive advantage (Teece, & Pisano, 1994). Though, it is not enough to have dynamic capabilities to reach competitive advantage, it is related to how unique and hard to copy they are. From a people perspective the dynamic capabilities could be described as activities or routines for managing the *human* resource base. Thus, recruitment, re-skilling, up-skilling, and restructuring (Jöranli, 2017:4-5). Hence, implying that competence development strategies affect the dynamic capabilities in organisations. The benefits of dynamic capabilities can vary depending on the environmental dynamism, hence how fast the environment is changing (Schilke, 2014). Therefore, with the demands of digitalisation, the increased uncertainty and the environmental dynamism it is vital for manufacturing organisations to have competence development strategies. Thus, investigating dynamic capabilities related to competence in a changing business environment is of interest from both a theoretical-and practical perspective.

Competence development strategies are needed because workers in low-skilled roles such as in production are likely to face a level of job displacement and a shortening of the shelf-life of their skills. Thus, without significant re-skilling or upskilling they will become redundant (WEF, 2016:5). At the same time the pressure to have individuals with competence to develop products and organisations will be on higher demand, such as engineers, software developers and management (ibid:4, Eurofund AIR, 2017:22). Meanwhile, it is currently a high demand and low supply for these competencies leading to increased competition and organisations face challenges when trying to recruit these very needed competencies. Fearsome, is that if it is perceived to be hard today the report by world economic forum shows that it will get even harder by 2020 (2016:4). Therefore, by not anticipating the impact of the drivers of change on recruitment, training & development, and address the issues thereafter, it may lead to severe economic and social costs for businesses, societies and individuals (WEF, 2016:6). The strategies and actions the organisations choose to take today either leads them to exciting emerging opportunities with new value constellations or towards high levels of job displacements, insufficient competencies and lack of talent (ibid). This sets high demands on the managers since they have a central role to the formation of strategy and during recent years they have been faced with an increased level of HR related tasks. They have the responsibility of taking decisions and leading the organisation forward (Mintzberg et al, 2009:9) and this currently implies performing more HR related activities, implementing

HRM strategies, transforming organisational plans for change and thereby, leading change through people (Op de Beeck, Wynen & Hondeghem, 2016). Thus, strategy theories argue that manager's strategy making is very much based on their imagination and mindset, their ability to navigate, reflect, learn, seek and process information, and look at the organisation from a different light and context (Normann, 2001:188-191).

1.1 Purpose and research questions

Regarding the increased emphasis on competence development strategies within scholarship and practice, and the unclear idea of how organisations navigate when developing their strategies for future competence in the era of digitalisation, the aim of the study is to explore *how* managers navigate, in order to strategically develop their workforces competence[1], to address rapidly changing business environments in the era of digitalisation[2]. The purpose is also to shed light on how managers balance their workforces competence to the contradicting requirements of being stable enough to continue developing value but at the same time dynamic and adaptive to a quick shift when circumstances change. Hence, how the competence development strategies meet the demands of dynamic capabilities. Furthermore, the study attempts to gain an understanding on how managers strategy-making varies depending on managerial levels and departmental boundaries therefore, shedding light on the possible complexity that organisations face due to digitalisation. Hence, the research questions that will guide this paper is:

1. How do managers in a manufacturing organisation strategically develop their workforce's competence, to address rapidly changing business environments?

2. How is the strategic work contributing to achieving dynamic capabilities and sustained competitive advantage?

3. What challenges do the managers experience when shaping strategies to achieve dynamic capabilities?

In order to bring deeper understanding in how managers are navigating digitalisation's impact on strategically developing the workforce's competence and gain insight on the differences between strategic and operative levels in the organisations, the methodologies used for collecting data are; interviews with managers on top management level, middle level and line level, as well as HR practitioners.

[1] Competence can be defined by five dimensions; skills, personality, communication, strategic thinking and functional use (IPF in Granberg, 2011:525f).

[2] Digitalization can be defined as the use of digital technologies and data, where digital information is central, in order to create revenue, improve business and create digital culture (scoop.eu).

With the aim of putting various perspectives on the empirical result and problematize the dominant ideas, different theoretical strategy approaches will be adopted as framework for analysis. The study contributes to our understanding of dynamic capabilities by exploring the capability connected to the workforce's competence in relation to the environmental dynamism. As well as trying to contribute to the Strategy as Practice approach by connecting micro level research with a macro perspective. Micro level referring to the individuals, in this case the managers, and macro level referring to the industry, in this case the manufacturing industry.

The next section, will present the previous research analysed on digitalisations affect on work, occupations, competence, dynamic capabilities and the manager's role. This is followed by a description of the theoretical framework being used to analyse the empirical findings. The fourth section in this paper argues for the chosen methodology and data collection techniques leading into the fifth section presenting the empirical findings. Which supersedes into the analysis in the sixth section. The report is finished by presenting conclusions and suggestions for further research.

2. Previous research

The following section will present previous research related to the field of investigation. At first digitalisations impact on work will be presented by looking into digital technological developments affecting the manufacturing industry. Then, digitalisations affect on occupations will be analysed leading us into which competence requirements will be of importance in a digital environment. This, is followed by presenting the demands this sets on dynamic capabilities, and the managers role to shape strategies and plan for the future.

2.1 Digital technologies impact on work

Previous research indicates that digitalisations impact on the manufacturing industry has led to a numerous increase in research regarding how it will affect manufacturing organisations. Research, trying to find out how it will influence business models, production processes and ways of working is of significant demand. Looking back in time, industrial revolutions has changed the way we work in the manufacturing industry several times (Rübmann et al, 2015:3). Currently, the industry is facing new challenges due to the fourth industrial revolution also called Industry 4.0 (Ibid). The term is referred to continuously in both scientific research and by practitioners. It is expressed to be considered a game changer. Industry 4.0 refers to factories becoming smart factories through the usage of several

digitalised technologies such as Additive Manufacturing[3] (AM), Industrial Internet of Things[4] (IIoT), and Advanced Industrial Robots[5] (AIR), these three being the heart of development (Eurofund AM, 2017:4). These technologies have several benefits, creating numerous opportunities for manufacturing, however they are changing the dynamics in manufacturing facilities and have a big impact on the way work is conducted.

Previous research states that AM is likely to influence the way we work in many parts of the value network, enhancing the focus towards design, creativity and collaboration through agile ways of working and multidisciplinary teams. It is already an established way of working in the software departments but AM is presumed to influence the need to do this in other departments within the organisation. Work processes are likely to become more digitalised, advanced and with less manual work on the floor, but also, the production environments are expected to be much cleaner and safer due to them being robotised and digitalised (Eurofund AM, 2017:16-21). Meanwhile, research connected to IIoT shows that IIoT is presumed to improve quality management in factories by using more advanced analytics, process the data, increase collaboration internally and externally, and decisions will be assisted by intelligent systems leading to decisions being made closer to the work floor (Eurofund IIoT, 2017:7).

Research indicates that AIR is likely to have a high influence on work processes. The area is highlighted within research since AIR enables more automation of harder and more complex tasks than with traditional robots (Eurofund AIR, 2017:17), which are often seen in cages in production facilities today (Ibid:3). The opportunities gained by AIR is therefore, more lean and agile production processes (ibid:15). Hence, the robots can operate in a less structured environment, rely less on human intervention, and can interact with humans and the outside world. Therefore, it can probably do and take over dangerous or repetitive tasks, improve

[3] Additive manufacturing (AM) refers to the ability to turn data into things and things into data. Hence, it is a highly digital and data-driven method, where the process is travelling from the floor to the screen. AM has still relatively low adoption rate in manufacturing organisations today but is likely to enable customisation, rapid prototyping, more reliable production processes and global and local supply chains to merge. (Eurofund AM, 2017:17)

[4] Industrial internet of things (IIoT) is a concept that refers to an integration of physical machinery connected to networking sensors. Thus, the software in industry, were objects in factories and between factories are connected and the internet serves as a channel for information to flow back and forth. The benefits with IIoT is seen to be enabling an autonomous exchange of large amounts of information, flexibility of processes and connectivity between several actors in the business environment. It is likely to have an uptake by 2025 in Western Europe. (Eurofund IIoT, 2017:7)

[5] Advanced industrial robotics (AIR) is the application of advanced robotics in industry settings. The robots are smarter than traditional robots since they are capable of learning. AIR robots draws from a bundle of technologies hence, artificial intelligence, machine to machine communication, machine vision, and sensors . So far AIR is in the early stages of implementation in mainly large and high tech manufacturing organisations (Robotics VO, 2013; Eurofund AIR, 2017:10)

working conditions, reduce product defects and boost customisation in mass production organisations and supply chain integration creating a higher interconnection. Hence, humans and robots are likely to interact and collaborate more than before (Eurofund AIR, 2017:8-18).

These three digital developments are seen as the main driving forces in the manufacturing industry according research (Eurofund AIR, IIoT, AM, 2017; Rübmann et al, 2015). Rübmann et als (2015) expands the research by taking six more technological advancements into consideration. They are *big data*; collecting large amounts of data from many sources supporting in real time decision making, *the cloud*; increasing data sharing, improving reaction times and reducing organisational boundaries, *simulation*; enables testing and optimisation of settings in production lines by creating a virtual reality, *augmented reality*; virtual reality technology in production and human resource activities, *horizontal and vertical integration system*; an IT system connecting all actors inside and outside the organisational boundaries enabling a fully automated and digitalised value chain, and the last is the issue of *cyber security*; which is leading to many challenges when it comes to protecting the people, products and the organisation. Therefore, research indicates that it is a complex digital development affecting many functions in the manufacturing organisation. With this in mind it is natural to discuss previous research connected to digitalisations impact on occupations.

2.2 Digitalisation and occupational changes

During recent years there has been done quite extensive research on how digitalisation is likely to impact occupations in manufacturing industries. Hence, the division and structure of labour in industrial organisations is many times based upon the technology in production, and depending on the employee's education and skills, their positions are decided (Berglund & Schedin, 2009:29). Thereby, research has been done to try to understand if digitalisation will lead to a so called jobless future. Frey and Osbourne's (2013) research, where they look into the risk of occupational job loss due to automation and digitalisation suggests that 47 % of all persons employed in the US are working in automatable jobs within the next 10 to 20 years. Several studies followed their approach of research and Finland was estimated, by Pajarin and Rouvinen (2014), to have 35% and Germany as a country with a lot of manufacturing, by Brzeski and Burk (2015), as high as 59% automatable jobs. These studies indicate that there will be a very high rate of automatable jobs. Meanwhile, a more recent study by Arntz et al (2016) criticises Frey and Osbourne's occupational approach. Arntz et al argue that occupations are a cluster of tasks and that automation and digitalisation usually aims at and has the potential of automating certain tasks rather than occupations. Therefore, the authors

take a task-based approach. Their results suggest that on average 9 % of jobs in OECD countries are automatable (ibid:17, 33). Thus, the threat of job loss from technological advancements is not as profound as previously stated. The authors also point to the fact that the utilization of new technology usually takes time, and is a rather slow process. Hence, when new technology is introduced employees can switch tasks and thereby stay employable (ibid:24). Although, they describe that low qualified workers stand a higher risk since their jobs are more likely to be automated and adjusted than high qualified workers. Thus, new technologies usually involve an increase of tasks performed as complement to machines (ibid:19, 21). This is confirmed in Eurofunds reports, IIoT implicates that smart machines will to some extent replace blue collar employees (Eurofund IIoT, 2017: 22). In relation to this AMs influence is fairly unexplored but is said to decrease manual work with 67% (Eurofund AM, 2017:18). Meanwhile, AIR indicates a high risk when it comes to jobs that require manual work with low degrees of social or intellectual tasks (Eurofund AIR, 2017). The International Robotics Federation believes that one skilled technician for robot maintenance and operations will be needed for every ten robots utilised in a factory (Metra Martech, 2013).

To be kept in mind is although, that research indicates that some kind of natural transition can be expected, since between 2015-2025 a substantial part of the industrial workforce is likely to retire (Eurofund AIR, 2017:19). On the other hand, it is argued that employees in their forties is particularly vulnerable. Since, they did not grow up with digital tools or have training of it in their education, and they will first retire in 20-30 years. Hence, they may become redundant if education and training is not implemented to create a smooth transition (Ibid; Arntz et al, 2016: 22, 23).

Contradicting to a jobless future, research also implies that new occupations, tasks and employment opportunities will emerge (Eurofund IIoT, 2017:23; AM, 2017:18) due to higher competitiveness and demands on new technology (Arntz et al, 2016: 22, 23). For instance, workers that install and maintain sensors (Eurofund IIoT, 2017:23), monitor machines, robots and systems (Arntz et al, 2016:22, 23; Metra Martech, 2013), load and unload machines (Eurofund, AM, 2017:18) security specialists, privacy specialists, and more self-employed experts such as developers, designers, engineers, data scientists, repair and maintenance experts, will likely be needed (Ibid; Eurofund IIoT, 2017:23; AIR, 2017:19).

Therefore, a shift in jobs and tasks is to be expected, WEF states" on average by 2020, more than a third of the desired core skill sets of most occupations will be comprised of skills that are not yet considered crucial to the job today" (WEF, 2016:3). To which content, is a bit unclear so far (Eurofund IIoT, 2017; AIR, 2017:19). Although, it is argued that less workers will likely be participating in the production process having blue collar employees shift to more quality control, process assistance and preparation for transports. Leading to a higher need for blue collars with technical, creative and overviewing skills (Ibid, Eurofund AM, 2017:18; AIR, 2017:20-21). Additionally, jobs connected to the processes before and after production are presumed to increase. Such as, marketing, research and development, software development, customer support, sales or leasing opportunities, maintenance and data analysis (Ibid:19, Eurofund IIoT, 2017:23, AIR, 2017:21). Therefore, previous research indicates that occupations are likely to change, and a shift in tasks will develop into new occupations were the competencies required is presumed to be different than today.

2.3 Digitalisation and competence

There is not a lot of research on the topic connecting many different technologies. It is mainly done with connection to a certain technology and its implications on skills and competence. Hence, large institutes have tried to define what will be important for manufacturing organisations to consider. They state that information and communication technology (ICT) related skills and basic IT skills will be important among workers at all levels in the manufacturing organisation. Skills such as mathematics, data, analytics, security, user experience design, machinery equipment and mechanical engineering are expected to be of high relevance (Eurofund IIoT, 2017:20; AM, 2017:18; AIR, 2017:20-21; Rübmann, 2015:8-9). On the wider scope, the new business models and value chain networks is likely to require more interactions and interdisciplinary communication and collaboration between organisations, departments, teams and team members (Eurofund IIoT, 2017:21, AM, 2017:17-18; AIR, 2017:19). Probably even with the organisation's competitors (WEF, 2016:8). Therefore, research suggests that all employees social and intellectual tasks will become even more profound for organizational success (Ibid:3; Eurofund AM, 2017:16, Eurofund IIoT, 2017:21). All employees will likely need to be used to communicating in complex environments (Van Houten & Scholten, 2016), having a problem-solving intuitive attitude (Acatech & Forschungsunion, 2013), being creative, flexible to changes in responsibilities, work environment, and engage in continuous interdisciplinary learning

(WEF, 2015, Eurofund AM, 2017:18). Thus, to comprehend related processes and understand the impact they have on other processes (Eurofund IIoT, AIR; 2017).

2.4 Digitalisation impact on the dynamic capabilities connected to competence

Previous studies such as Teece et al (1997) and Jöranli (2017) state that recruitment, training and development and restructuring are important to have in order to alter the human competence base. There has been done some research trying to understand how digitalisation will affect these activities and routines. It is argued that there will be required education and training of employees, in both hard and soft skills (Rübmann, 2015:14; Eurofund IIoT, 2017:20). Global consulting companies have done research on what global organisations are implementing. Training programmes to upskill the whole workforce's IT skills has been initiated in GE. Boston consulting group argues that employees need to have analytical skills, learn how to work effectively with robots, (The Boston Consulting Group, 2015; Deloitte, 2015) and product designers need to learn how to develop products in line with IIoT (McKinsey Global institute, 2015), AM (Eurofund AM, 2017:20), and the different interrelated technologies in AIR (Eurofund AIR, 2017:3). Employees need training in order to broaden their knowledge and stay updated (Eurofund IIoT, 2017:20). It is stated to be especially important for employees working in production hence, their tasks are expected to be drastically affected (Eurofund AIR, 2017:2, 25).

Research also reflects that it is important for educators and practitioners to communicate and collaborate on developing initiatives and educations in order to meet the new demands of the digital economy (Acatech & Forschungsunion, 2013:55; Eurofund AM, AIR, 2017; Rübmann, 2015:15). However, research indicates that organisations are only slightly involved in shaping education and not investing much in the educational system in general (Ibid; Eurofund IIoT, 2017:21. An interesting case that has tried to identify the vital digital skills in the 21st century is the Bryn Mawr College (2017). They have created a digital competency framework, showing five focus areas; digital survival skills, digital communication, data management and preservation, data analysis and presentation, and critical design, making and development (Bryn Mawr College, 2017). Thus, these competencies are defined as important for students in the future and are most likely relevant from an organisational perspective as well. The research by world economic forum (2016) states that it is worth to consider that during previous industrial revolutions it took decades to build up labour market institutions and education systems. If the fourth industrial revolution gains its full impact, then this will foster several new challenges putting pressure on building

these up faster. Moreover, the report points to that industries will likely be faced with positive employment demands of highly qualified people (WEF, 2016:4, Eurofund AIR, 2017:22). Thus, this will be challenging for many organisations due to that there is already a scarcity of these competencies on the labour market and it is probable to be even harder in 2020 (WEF, 2016:4). Hence, it is stated that perhaps even, collaboration rather than competition, on competence and people will be needed in the future (Ibid:8).

Therefore, previous research indicates that digitalisation is likely to have extensive implications on manufacturing organisations, skills requirements and the way of working, leading to a need to transform the workforce. Thus, implicating profound challenges within recruitment, training and development, restructuring, therefore also strategic workforce planning and managing changes (Eurofund AIR, 2017; WEF, 2016:6; Rübmann, 2015:14).

2.5 Managers navigation and strategies for developing the workforce's competence

When searching for research on how managers respond to how digitalisation is affecting the manager's role, there is little information to be found. There is research focused on other occupations such as the communicators (Shahlei et al, 2017), HR professionals (Bengtsson & Bloom, 2017), teachers, healthcare professionals and cybersecurity experts (Jääskeläinen, 2015). Thus, some research has been done on micro level. Although, research focusing on an organisational level is very slim and has if conducted usually focused on a certain technological device or development such as digitalisation of meetings, from whiteboards to smart boards (Berglund et al, 2016) or research focused on a certain department, such as Bechtsis et al (2016) focusing on the supply chain. Some research has been done by large institutions trying to navigate and give direction to industries. However, the report on future jobs and skills shows that "business leaders are aware of the challenges but have been slow to act decisively" (WEF, 2016:6) and according to the report by Eurofund the manager's role will most likely have even more complexity in the future due to that digitalisation requires multidisciplinarity. (Eurofund IIoT, 2017:22). It is indicated that there overall is an awareness of the importance of future workforce strategies and development of competence, although there is a perception of limitations in the future workforce strategy (WEF, 2016:6-7). The barriers that were perceived are a lack of understanding of the disruptive changes that may be ahead, short term profitability pressure, constraints on resources and an insufficient alignment between the workforce strategies and the innovation strategies (ibid). Research expresses the importance of having leaders with the ability to focus on the present but also visualise the

future, think bigger and more innovative in order to shape the wished future state (Granberg, 2011:278).

With this previous research in mind, it is argued that organisations need to actively work and invest in the identification of future competence needs, in order to assure that the employees of tomorrow are skilled for the industries needs of tomorrow (Eurofund IIoT, 2017:21). Since the developments are not really visible yet, the urgency may not really be there, but it is likely to be visible within the coming years (Ibid:25). Which is a bit fearsome given the pace and the disruptions that the fourth revolution is presumed to bring, thus, without strategy, development of competence and clear action the consequences may be vast. As strategist Richard Normann states "Current success and long-term sustainability are not the same thing". (2001:235). Therefore, exploring how managers navigate in order to strategically develop their workforce's competence, in the era of digitalisation is of high relevance to both the scientific field and for practitioners.

3. Theoretical framework

The following section will discuss various theoretical approaches to strategy in order to establish different perspectives on developing strategy. The framework is of great importance for the studies intention of getting an understanding of how managers strategize when developing their workforce's future competence in the era of digitalisation, meeting the demands of dynamic capabilities.

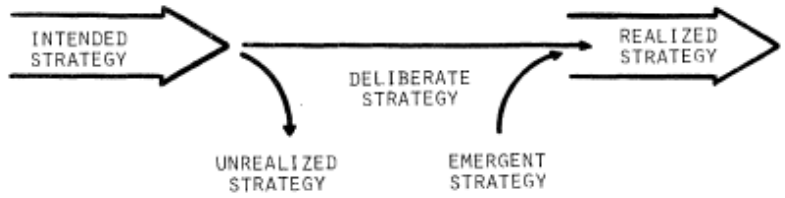
3.1 Traditional theories of strategy

In order for an organisation to reach dynamic capabilities there has to be some kind of strategy making. Strategy is naturally conceived with what managers of an organisation has "planned" to do in the future (Mintzberg & Waters, 1985:257). Mintzberg defines strategy as "a pattern in a stream of decisions" (ibid). In organisations managers have the responsibility of taking decisions and leading the organisation forward therefore, they have a central role to the formation of strategy (Mintzberg et al, 2009:9). It has tended to be seen as an analytical process to determine and formulise long-term goals and activity plans for organisations followed by implementation (Mintzberg & Waters, 1985:257). Over the years, an extensive amount of research on strategy have problematized the underlying determining factors of strategic work, as it is seen as a complex process in the need of being viewed from several perspectives (ibid). Whittington (2002) described four perspectives that have been foundations for many later strategic developments. Hence, the classical approach which is normally connected to, formal and internal planning to reach profit maximisation, and the

authors Chandler (1962) and Porter (1985). The processual approach, associated with craftsmanship and internal perspectives, with authors, Cyert & March (1963), and Mintzberg (1987). The evolutionary approach reflecting the darwinian way focusing on survival in the external environment with authors such as Hannan & Freeman (1977) and Williamson (1999). Lastly, is the systemic approach related to social aspects, the context of societies and the authors Granovetter (1973) and Whitley (1991). (Whittington, 2002:18-51). Thus, there are many strategy approaches. All these will not be described in further detail but the features to their development and foundations behind shaping strategy will.

Mintzberg et al simplifies the complex strategic process by determining that strategies can be *intended*, hence, a formal planning process, or *realised*, when one looks back a couple of years there is a pattern of activities that together show a strategy. He argues that it is seldom the realised strategies were intended. Therefore, developing strategy involves some thinking ahead but also some adaption on route (2009:10). This is shown in the following figure.

Figure 1: Intended or realised strategy



(Mintzberg et al, 2009:10)

An intended strategy that does not adapt along the way can be seen as a pure *deliberate strategy*. Meanwhile an emergent strategy without any intentions is a pure *emergent strategy*. Thereby, if there is an intended strategy that adapts to new conditions, thus to the unrealized strategic elements, then it is realized that there was an emergent strategy (Mintzberg & Waters, 1985:258; Mintzberg et al, 2009:12). A pure emergent strategy implies that there is no control and pure deliberate means that there is no learning along the way. Therefore, one or the other is not always good, it is the mixture of the deliberate and emergent that reflects the ability to predict, as well as react to unexpected events (ibid). Moreover, strategies can be seen as *position* or *perspective* depending on the content of strategy. Position being focused on an organisations location of particular products in a certain market (Porter, Mintzberg et al, 2009:13-14) and perspective being focused on an organisations way of doing things. Thus, position having an external view and perspective an internal view. Mintzberg argues that

changing position while remaining within the same perspective is easy meanwhile changing perspective while maintaining position is not (ibid).

These approaches to strategy are concentrated on the analysis of a firm or industry levels effect upon firm performance. Hence, there is an absence of analysing the human actors and their actions when shaping strategy. These economic strategy approaches and clean models are criticized for not laying enough emphasis on the actors, and if they do take them into consideration, it is mainly focused on top-management. (Jarzabkowski & Spee, 2009: 69-70). Therefore, to receive a greater understanding of the manager's development of strategy it is advantageous to expand the theoretical framework on strategy to a practice approach, in this case Strategy as Practice.

3.2 Strategy as Practice

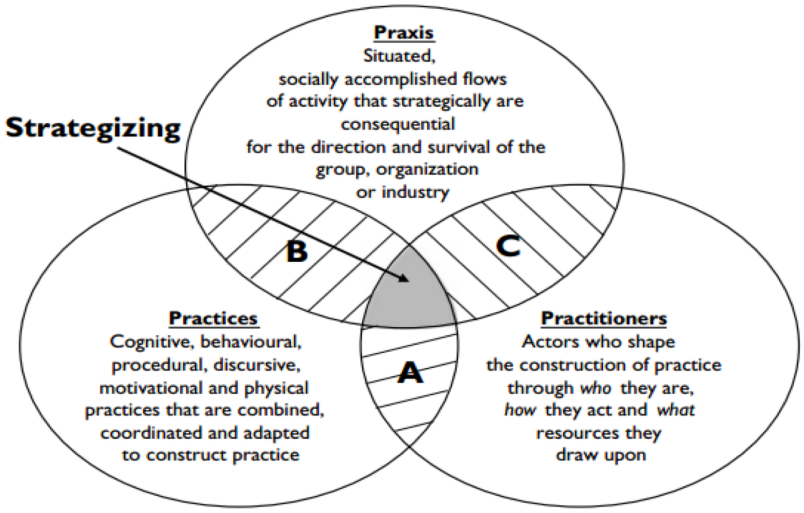
A contradicting yet rapidly expanding strategic approach, to economic theories and clean models, is Whittington's (2006), *Strategy as practice* (SAP). The approach was developed since there was concern on how the other strategic literature focuses on what organisations *have,* such as formal plans or policies, rather than what organisations *do,* practices or actions. Therefore, SaP looks into how management practices are utilised to put strategy into practice and accentuates the complex day to day processes of manager's decision making (Jarzabkowski, 2004:1). Johnson et al (2003) points out that strategizing is not only done in the centre of an organisation by managers it can also be done in the periphery. The SaP approach enables an analysis of this disordered reality of strategy making (Jarzabkowski & Whittington, 2008) not just focusing on the top-down process rather the happening on many levels such as line management, support functions and employees (Jarzabkowski et al, 2007).

Whittington (2006) describes that the SaP framework looks at three core themes in order to understand the strategizing occurring. They are the *practitioners*; who are making, shaping and executing the strategy, the *practices*; what they are doing, and the *praxis*; how it is being done and what tools are being used. According to Jarzabkowski & Spee (2009) the practitioners can be both individuals and/or aggregated as a group of actors. They can be both internal and external to an organisation. The practice term accentuates from two perspectives, first the organisations internal routines, procedures and culture, and second practices that are a result of the influence of the environment, hence, extra-organisational. Whittington (2006) describes that practice is multileveled and what practitioners draw their praxis on. Thereby, praxis refers to all formal and informal activities happening in the formulation and

implementation of strategy. It includes presentations, meetings and informal talk. Hence, the SaP approach is between a macro and micro perspective integrating an intra- and extra-organisational perspective. Hence, enabling the researcher to have a societal perspective when studying individuals and consider individual actions when studying social fields (ibid).

The three 'P's are interrelated and affect each other in a dualistic way, and can therefore, not be separated. Thereby, it is in the centre the strategizing occurs, thus, in the interconnection of the three 'P's (Jarzabkowski et al 2007). This is shown in the figure below.

Figure 2: Strategy as Practice – The three 'P's



(Whittington, 2006)

Therefore, the practitioners have a crucial responsibility in creating strategies and the results may be dependent on the person's motivation and skill (Whittington, 2006). A recent study looking further into how human actions influence the shaping of strategies and making strategic decisions shows that it can be done through *procedural strategizing* or *interactive strategizing*. Procedural being based on established hierarchies and formal administrative activities and the interactive referring to involvement outside top-management and face to face interactions (Hendry et al, 2010).

Jarzabkowski and Spee (2009) mentions that the SaP approach has been criticized due to the terms practice and praxis being rather wide and undefined leading them to be applied with variation in previous empirical research. The second criticism that the SaP theory has been faced with is that there is not enough focus on the outcome. It is a descriptive approach and can if the researcher is not focused on it, have a hard time stating what does this explain?

Thus, something that is critical for strategizing, since the intention by doing it is to reach a desired state. Therefore, this study intends to connect the SaP approach with the dynamic capabilities theory. Hence, research focusing more on reaching sustained competitive advantage by learning and adapting (Teece et al. 1997; Jarzabkowski, 2004:537-538) or as Ambrosini and Bowman (2009) describe, dynamic capabilities concentrates on competitive survival in response to rapidly changing contemporary business conditions. The dynamic capabilities theory (Teece et al, 1997) is viewed as an extension to Barney's (1991) resource-based view. The RBV focuses on the value of the organisation's current resources meanwhile the dynamic capabilities view addresses the reconfiguration of these resources (Helfat & Peraf, 2003). Thus, the dynamic capabilities theory has emerged to be one of the most influential theories in studying strategic management the last couple of years because of its potential influence on competitive advantage (Teece et al, 1997).

Research by Schilke (2014) puts dynamic capabilities into a new light by examining its capabilities with environmental dynamism as a factor. Thus, how fast the environment is changing and therefore, how fast does the organizational activities and routines have to change the resource base and when is it more costly than beneficial. The research suggests that dynamic capabilities are most advantageous when the environmental dynamism is intermediate, when it is slow or fast the level of needed restructuring is either too slow to be beneficial compared to the costs of changing resources or too fast to what can be handled therefore, creating other costs. Schilkes (2014) research suggests that further research is needed on different capabilities with environmental dynamism as a factor. This study will contribute with a new capability being explored thus, competence.

The organisational activities and routines affecting the dynamic capabilities (Schilke, 2014) and the day-to-day processes of manager’s decision making and practice in SaP (Whittington, 2006) connects the two theoretical views. Hence, the dynamic capabilities theory is also based on four paradigms, the value creation processes with the dynamic capabilities, the internal environments behaviour, the external environment's complexity and the outcome indicating that there is an interaction between macro-and micro contexts (Jarzabkowski, 2004:538) which is in line with the SaP approach. Therefore, applied to this case, it means looking into; the manager’s capacity to sense and shape opportunities and threats, seize opportunities, and maintain competitiveness, through looking into the practice, praxis and organisational routines that is creating new resources, renewing or altering the human resource base.

As the SaP approach is relatively new and Jarzabkowski and Spee (2009) argue that there has been done little research on micro level strategy praxis, then this study will extend the knowledge about the use of such a theory by trying to apply it on the empirical findings and analyse how managers navigate in order to strategically develop their workforce's competence in the era of digitalisation. Thereby, trying to connect the micro level strategy praxis, thus the manager's actions and decisions, to meso level strategy praxis of an organisation, and therefore, attempt to contribute with a greater understanding to the meso level strategy praxis of a manufacturing organisation and the macro level strategy praxis of the manufacturing industry. While the SaP and dynamic capabilities theories are the foundational approaches in this studies theoretical framework, consideration will also be paid to the challenges of strategizing in uncertainty and having competitive human resource practices. Hence, in order to create strategies for competence development that intend to contribute to the competitive advantage the human resource practices need to be chosen wisely.

3.3 Competitive strategies and Human Resource Practices

Schuler and Jacksons research discusses the connection between competitive strategies and human resource practices. They argue that an organisation needs to decide on a human resource management strategy and connect the human resource practices to the competitive strategies of the organisation (1987:5f). So in order to develop competence an organisation needs to consider and make choices on how to plan, staff, train and develop employees. Hence, is there a focus on short term or long term planning, informal or formal planning, staffing through internal sources or external sources, narrow or broad career paths, individual or group training, spontaneous or systematic training. Thus, all these factors influence the organisation and if their strategies are contributing to a competitive advantage or not (ibid). Therefore, it is vital that organisations consider how this is managed, structured and approached (Granberg, 2011:525).

A process that is intended to help managers strategically develop their workforce's competence is strategic workforce planning. Historically, during the period of 1960-1989 it was tradition to make plans for 10-15 years into the future. This laid as a fundamental base for investments and developments for the workforce. It was successful since the market was rather stable and there were good economic conditions. Although, this is no longer the case, the external environment is changing and moving in a higher pace. Today organisations rather analyse the development to the time being and use this as a reference to prepare for the

changes in the more turbulent world (Ibid). Bersin and associates investigated workforce planning in 67 organisations and the results show that 90% of the organisations report some level of workforce planning, but only 21% utilise it as a strategic and forward- looking process (2009). Though, there is an ongoing discussion if strategic workforce planning is advantageous or not in order to develop accurate competence in organisations. Research shows that it depends on the content, how much actors relies on their plan, adapts it (Granberg, 2011:136) and how leaders consider time hence, it may be focused on past, present or future and the planning frame may be one, two or five years (Lindmark & Önnevik, 2011:278). This in turn influences the strategic workforce planning and shows the organisations inclination to change (ibid). It is also pointed out that workforce planning is not especially successful if HR owns the process (Chapman, 2009). Chapman argues that it is business that must own the process and HR can help facilitate it. Therefore, how an organisation strategically develops competence and plan their workforce becomes highly relevant to pay attention to and consider in order to become a strong actor in the business environment. However, with the increased level of uncertainty stated by previous research it is of relevance to analyse how this affects the manager's development of strategies. Therefore, two approaches are described in order to enable an analysis of this.

3.4 Strategy in uncertainty

Courtney et al developed a framework in 1997 showing that when developing strategies under uncertainty, managers can be helped by classifying the uncertainty into four different levels. Level one, being low uncertainty but there is an ability to predict if the managers use analytical tools by traditional means i.e. market research or SWOT-analysis. Level two, is more uncertain with alternate options and harder to predict, but by using option valuation models, decisions can be made. Level three, refers to when it is very uncertain with multiple plausible outcomes, then scenario planning can be used. Level four, indicates that there is no ability to predict but it can help to do analogies and pattern recognition to analyse. Therefore, they stated that if managers classify the uncertainty they are faced with they can use different analytical tools to handle the uncertainty and make the unknown known. Courtney et al believe that the unknown is many times known if the right actions are taken to handle the uncertainty (1997:2-14). This way of developing strategy was further elaborated by Wiltbanks et als approach on non-predictive strategy (2006). They ask themselves what shall organisations and managers do to strategize in uncertain situations? Is it to plan or adapt; hence, deliberate or emergent strategies (Mintzberg et al, 2009:10). Wiltbank et al argues that

it is related to the ability to predict changes in the environment and to control (2006:987). There is a basic conception that what can be predicted can also be controlled and therefore it can be planned or strategized (ibid).

Wiltbank et al (2006) presents four approaches that strategic managers can adopt when developing strategies. The first being; a manager can assume the environment is predictable but beyond their control. Then predictive techniques like forecasting or scenario planning (Wright, 2005) can be used by managers to navigate, and lead them to understand what resources will be valuable in order to reach favourable outcomes (Wiltbank, 2006:987). This is called planning strategy. The second approach; managers believe the environment is unpredictable and investments are made to have flexible strategies and short planning horizons. Described as adaptive strategies. The third; managers assume the environment is predictable but governable and by imposing their vision for the future the environment can be shaped to reach the desired outcomes. Hence, the visionary strategies. The fourth approach; is called transformative strategies, thus, managers believe that future environmental aspects do not exists and they seek to create new ones by clear aspirations and collaboration with other actors, to imagine other futures by the current means (ibid:989). These perspectives offer different ways to respond to unpredictability and uncertainty in the environment. Therefore, by using these two approaches to analyse the manager's actions when faced with uncertainty there is a possibility to shed light on how uncertainty is affecting their strategy making.

4. Method

The following section will present the research design of the study. Methodological choices, selection of sample- and units, data collection techniques- and process, and data analysis is described. Concluding the section is a discussion on data quality concerns, ethical considerations and critical reflections.

4.1 Methodological Approach

Regarding the unclear idea of how organisations navigate when developing their strategies for future competence in the era of digitalisation, the intention of the study is to through a case study in the manufacturing industry, explore *how* managers navigate, in order to strategically develop their workforce's competence, to address rapidly changing business environments in the era of digitalisation. A case study as research method was chosen since the research is intended to understand a complex social phenomenon and it allows the investigator to focus on a single case but at the same time remain a real-time and holistic

perspective (Yin, 2014:4). Yin argues that case study as research method is beneficial when the research question is exploratory and seeks to explain a present circumstance as "*How*" or "*Why*", and when investigating managerial-or organisational processes (2014:4,9), something this research intends to do. Hakim agrees with Yin and describes that case studies are useful when the research is intended to investigate organisations or roles (2000:59). Denscombe emphasizes that a case study enables a deep-dive into a phenomenon taking several aspects into consideration thereby also grasping the complexity in a given situation (2012:61) which is in line with the studies intention of trying to gain an understanding of how managers strategy making varies depending on managerial levels and departmental boundaries.

To fulfil the choice of case study as research method different data collection techniques (Yin, 2014:3; Hakim, 2000:61) are used in order to explore how managers navigate and strategize when faced with uncertainty. Hence, the units of analysis are managers and their thoughts, actions and experiences are of interest to understand the phenomenon (Bryman, 2003:71). Therefore, the research follows a qualitative approach using qualitative data collection techniques such as informant interviews, semi-structured interviews and secondary documents (Denscombe, 2012:232ff, 295). The qualitative method is beneficial since it allows the researcher to explore and ask questions during the whole data collection process, which enables a deep understanding and analysis. If a quantitative method would be chosen then the researcher would need to know what to ask beforehand which would be hard when trying to understand a complex social phenomenon (ibid:208, 232). By this it is motivated why the most adequate way to shed light on, understand and explain the social phenomenon and answer the research question is by using a case study and qualitative research method.

The research has mainly characteristics of being based on an inductive approach. Since, the empirical data is gathered early in the research process, followed by coding of the data, leading into an analysis first without consideration to the theories and then again through the theories, lastly leading into conclusions (Trochim M.K, 2006). Despite that, there are some features of a deductive approach since the theoretical framework of dynamic capabilities was considered when formulating the interview guide. Nevertheless, the research is also based on a reflective process, stipulating that a continuous cycle of going through the collected data, then to the theories and then back to the data again indicating that it has evolved along the way (Flick, 2014; Trochim M.K, 2018).

4.2 Case selection

The study is conducted on a single case purposefully chosen due to several aspects. As mentioned in the introduction the manufacturing industry is facing many challenges due to digitalisation and technological advancements. Therefore, conducting the research on a manufacturing organisation is advantageous, hence it can be described as a critical case (Yin, 2014:51), and therefore, contribute with valuable insight and understanding in how organisations can navigate when developing their strategies for future competence in the era of digitalisation. Therefore, enabling the results of the single case to be generalizable (ibid) to a larger scope and significantly contribute with insight. Moreover, the rationale behind choosing a single case is to be able to do an in-depth analysis rather than a comparative analysis between multiple cases. Thereby, grasping the complexity of the phenomenon meanwhile limiting the research (ibid:50-51). Additionally, a single case study is conducted due to feasibility and practical considerations of me being a single researcher with a timeframe of four-five months. The selection of case organisation was based on it fulfilling critical to answer the research question (ibid:28, 51). Hence, being an organisation in the manufacturing industry, having expressed digitalisation as an aspect driving change in the organisation, and being big enough to have the potential of giving sufficient access to data.

4.3 Case description

The organisation being researched is an established global technology provider with 40 000+ employees, whereof close to 5000 are managers. The organisation has a history of more than 100 years and the headquarters are located in Sweden. It has over 100 manufacturing sites in more than 30 countries. The organisation has an outspoken digitalisation aspiration and steps have already been taken in that direction. As of three years ago, the organisation got a new CEO which led to substantial changes being implemented. The business model got a new focus, the value chain is more of a value network and several restructurings have affected the workforce. Thus, digitalisation is seen as a key enabler for future development therefore, several projects have been initiated within the organisation. As of one year ago a new fully automated production line with advanced industrial robots was implemented. Simultaneously, a new global business system was introduced affecting the whole organisation.

There is an ongoing change of strategies and new strategic prioritisations leading to several digitalisation projects, that are in their initial stages. Logistics is developing more against supply chain 4.0 with projects focusing on new ways of connecting with the customer base and integrated planning. IT is working on supporting the business in becoming digitalized

and creating a digital workplace. Innovation and product development has set focus on a new value proposition, and are developing software for the internal processes and external customers. Sales is moving from relationship focused selling to insight selling, trying to develop new ways of creating value for customers. On top of this a cloud technology is being implemented and a system to connect and gather data explored. At the time this study is conducted, all the initiatives are affecting the way of working and the competence needs in the organisation, leading to an interesting time exploring how managers navigate in the current conditions and strategize for future conditions.

4.4 Data collection process

4.4.1 Access

Access to the organisation was gained through previous collaboration, in form of an internship, with the organisation. Consideration was paid to if my previous knowledge of the organisation and work experience as a recruiter would have negative implications on the collection of data. Although, in this case it can be seen as an advantage since the case organisation is very large and by having been in the organisation connections have been developed. Thereby, increasing the feasibility and probability of gaining access to the units that may possess relevant information on the research area. Hakim describes that previous knowledge of the area aimed to explore can have a positive effect on the quality (2000:73).

4.4.2 Sampling process of units

In line with Flicks (2014) approach the intent was to generate a representable sample where the units represent the relevance of the phenomenon studied, in terms of their positions, responsibilities and experiences. When reflecting on digitalisation in manufacturing organisations it is easy to assume that production is the main area where the workforce is being affected by digitalisation, with previous research stating that the number of blue collars in production will reduce (WEF, 2016). Although, this study intends to grasp the complexity of digitalisation in a manufacturing organisation, whereof its size implicates a challenge to select a representable sample. Therefore, a sampling strategy was created. Thus, five business areas and three managerial levels, were selected to structure the data collection and sampling of the units of analysis.

The research was focused in connection to the value chain, hence, sales, manufacturing, logistics, innovation and development, and the central support business unit IT. The managerial levels serving as reference were group, middle and line. Therefore, 15 managers

were interviewed. Additionally, to the sampling strategy the CEO was interviewed. Together with my supervisor in the organisation a purposeful sampling (Patton, 1990; Miles & Huberman, 1994) of group managing directors within the five business areas were selected as respondents. Thereafter, the group managers were asked to come with suggestions on one middle manager and one line manager. Thus leading to a snowball sampling (ibid) of the ten remaining managers. By having this sampling strategy, respondents within different levels of the organisation could be interviewed, and thereby shed light on the phenomenon from a strategic, strategic /operational and operational focus. Thus, leading to the probability of gaining information on the complexity and uncertainty, managers in a manufacturing organisation, may be facing when navigating and strategizing the development of competence for their workforce.

4.4.3 Sampling frame

Figure 3: Managers as units of analysis

Respondent	Business Area	Level	Profession	Number of employees
1.		Group	CEO	45 000
2.	Manufacturing	Group	Head of Operations	24 000
3.	Manufacturing	Middle	Factory Manager	1100
4.	Manufacturing	Line	Group Production Manager	175
5.	IT	Group	Head of IT	350
6.	IT	Middle	Transformation Director	210
7.	IT	Line	Manager of Inhouse IT Services	19
8.	Innovation & Product Development	Group	Head of Innovation & Development	1100
9.	Innovation & Product Development	Middle	Product Development Manager in Software centre	60
10.	Innovation & Product Development	Line	Team Manager in Software centre	9
11.	Sales	Group	Sales Director America	2600
12.	Sales	Middle	Area director EMEA Sales	370
13.	Sales	Line	Sales Manager	11
14.	Logistics	Group	Head of Logistics & Demand Chain	1500

15.	Logistics	Middle	Transport Manager Europe	430
16.	Logistics	Line	Business Development Manager	10

4.5 Procedure

The data was collected stepwise. Firstly, by preparatory informant interviews, secondly, by semi-structured interviews, meanwhile analysing secondary documents. During the data collection period I was located at the organisation's headquarters and had a contact person supporting in suggesting key-informants and serving as a reflective partner along the process.

4.5.1 Preparatory work

After selecting the units of analysis, hence, respondents to the semi-structured interviews, emails were sent out to invite them to participate in the project. Many managers responded quickly with a high interest in the subject. After booking the five group managers the preparation of formulating the interview guide was started. This was done through seven informant interviews with HR professionals, with the purpose of gaining information on the area of research, the processes connected to strategically developing the workforce's competence and how they are working with certain initiatives to address the challenges arising from digitalisations affect on the workforce. See table for information on informants.

Figure 4: Informant interviewees

Profession	**Responsibilities**
Group HR Operations Director	Overall responsibility for HR-operations on Group level and locally in Sweden.
Group HR Competence Expert	Developing competence development, performance management, and succession planning processes.
Group HR Recruitment Manager	Responsible for all international recruitments and the trainee program.
HR Director India	Local responsibility in India and project leader for developing a global strategic workforce planning framework.
HR Manager Sweden Expert Team	Local responsibility for a team of HR experts developing Sweden's HR operations. Driving projects on upskilling and reskilling of factory personnel.
HR Partner Factory	Developed framework with future competencies for production employees.
HR Manager - Leader for Digitalisation project	Project leader for a project looking into the implications digitalisation has from a people perspective. Understanding future competencies was a key finding and an area to do further work within.

The interviews were semi-structured and thereby, interesting themes were thought of before the meetings depending on the informant's position. The reason for the meetings was to gain valuable insights before formulating the questions for the interview guide and help me gain credibility before the respondent interviews. Although, consideration was paid to not becoming overly dependent on the key informant's information in order to remain unbiased in the respondent interviews. Therefore, these informant interviews have not been transcribed or analysed in detail. Yin points out that key informants are usually vital for a case studies success and can improve the quality (2014:111).

4.5.2 Semi-structured interviews

As a very important source of evidence in a case study (Yin, 2014:110) interviews were chosen to collect the data. 16 semi-structured in-depth interviews were conducted. A semi-structured format was chosen to be able to prepare and structure the interview but at the same time stimulate discussion and vary the order of questions (Svenning, 2013; Tracy 2013). This in order to keep the conversation lively and to give the respondent the possibility to elaborate when wanted since, usually interesting information comes up in the elaborations (Denscombe, 2012:254). The interviews were held in the manager's personal offices or in a conference room. This to make sure that the managers felt comfortable and that we would not be disturbed (ibid). The interviews were held in English (except for the interview with the CEO, this one was in Swedish) and approximately 60 minutes. Therefore, there was time to ask follow up questions and for the managers to elaborate. After consent was given from the respondents the interviews were recorded with an iPad. This in order to be able to, not take field notes that may disturb the dialog, focus on the interview questions, the respondent's answers, to ask follow up questions, and transcribe the interviews for analysis (ibid:258-261).

The interview guide was designed (see appendix 1) in line with the purpose of the study, the information gained from the informant interviews and the interview framework described by Denscombe (2012:253-257). The interview guide begins with a short introduction of me as a researcher and the purpose of the research. Thereafter, information on anonymity, confidentiality and recording conditions, followed by a short introduction of the study and a thank you for participating. This led into the questions which were divided into themes. The interview guide finished off with a section asking if they had questions for me, if they have something more to contribute with and again a thank you for their participation. The interview guide was designed with a lot of questions. Hence, this simplified the interview process for me as an interviewer since different formulations and follow up questions was

already formulated and could be used if found relevant or wished for. There was a mixture of experience/behaviour, opinion/ value, feeling/impact and knowledge questions and consideration was paid to ask neutral, open-ended questions, probing explanations, elaborations and illustrative examples. (Häger, 2007). All to receive as much relevant information as possible to be able to answer the research question.

All managers were interviewed with this interview guide and given the same opportunity to give account for their experience, actions and opinions (Tracy, 2013). The research area is not an especially sensitive topic although it is intended to seek for answers in an uncertain context. Many of the questions are hard if not sometimes impossible for the managers to answer "correctly" therefore, if the respondent has a personality of wanting to give correct answers then it could be a hard topic. Additionally, managers may be seen as the character that shall have the answers. In this case, the fact that it is a student doing the research could be seen as positive since it is not as intimidating as if it would have been an expert or professional within the field (Denscombe, 2012: 246). With this in mind the interview guide was sent out approximately two days previous to the meetings, so they had time to if wished look over the questions or prepare for the meeting. Furthermore, when introducing the research during the interviews emphasis was also put on, there are no right or wrong answers, the focus of the research is to understand how you navigate and strategize in a context of uncertainty. This in order to build trust with the respondent (ibid:255).

4.5.3 Secondary documents

In order to gain knowledge on the research area secondary documents on specific projects, initiatives or strategies connected to digitalisation or strategic competence development in the organisation, were read through. This gave some valuable insights in the business areas path dependencies, previous recruitments, active recruitments and aspirations for 2018. It also served as source for the description of case and their active digitalisation projects.

4.6 Data analysis

The data has been transcribed and analysed continuously during the collection process. Since this method enables the researcher to determine if there is a gap in the data collected and the data needed to answer the research question (Tracy, 2013). The interviews were transcribed limited to the verbal component, thus the words spoken, (Flick, 2014) due to the research being done by a single researcher and transcribing interviews is very time-consuming (Denscombe, 2012:260). The transcription of the 16 interviews took approximately 80 hours.

The data collected from the interviews was coded and analysed through a grounded theory approach. Hence, it begun with an analysis of the material without any theoretical application leading into some categories of themes and topics. Followed by it being analysed again by using the theoretical framework applied in this research allowing further themes to evolve (Martin & Turner, 1986). The categories and themes was then put into an excel file creating a codebook. The data was then formulated and presented with Wolcott's approach of transforming qualitative data, into descriptive and analytic text (1994:10-11).

4.7 Data quality concerns

In order to ensure the data quality for this case study Yins framework to test data quality has served as reference (2014, 45). Hence, constructing validity, external validity and reliability.

4.7.1 Validity

Consideration to the validity of the case study was considered already in the research design phase. The research question is a "how" question leading the research into a probability of being generalizable to a larger scope. Thus, the research question can have a direct influence on the external validity. The validity of a single case research was also raised by basing it on a theoretical framework (Yin, 2014:48). Moreover, with the objective of creating validity in the data collection process, informant interviews were held in the beginning leading to valuable insights before formulating the questions for the interview guide and helping me gain credibility prior to the respondent interviews (a.a:45-47). Further, the interview questions were kept, as close as possible, to the research question and the theoretical framework of dynamic capabilities (a.a:48). Although, with the aim of not losing the exploratory intention of the research, open-ended questions were asked during the interviews in order to receive versatile and extensive answers (Svenning, 2003).

4.7.2 Reliability

With the focus of fulfilling a good reliability, I as researcher have tried to remain objective, describe the procedure of the data collection, interview process, settings, data analysis and present aspects that may influence the data as thoroughly as possible (Yin, 2014: 48-49). All interviews were based on the interview guide and the respondents were asked the same main questions with the possibility to elaborate if wished. Concepts and terms were explained to the respondent if needed and the opportunity to ask questions during the interview if something was unclear, was open (Svenning, 2003). When analysing the data an acknowledged coding method was followed and when presenting the empirical findings, it

has been done with Wolcott's approach in mind, and with a connection to the questions asked in the interviews, attempting to reach a chain of evidence (Yin, 2014:127-128). To further ensure reliability, many decisions in the research has been followed by the contact person at the case organisation since I was located there during the data collection process indicating that the process can be described by another party. Furthermore, it was vital to remain objective during the research and as mentioned earlier there was an advantage of having been in the organisation before but there was a risk that it could lead to biases. With the aim to prevent this, it was important to; use correct sampling strategies when choosing units to interview, have a thought through and structured data collection process and interview guide, and be critical to the collected data and findings (Denscombe, 2012:379).

4.8 Ethical considerations

A key priority during the case study was to conduct ethical research and use my own "moral intuition" as reference, when collecting the data, analysing it and presenting the findings (Denscombe, 2012:93). This was done by giving clear information about the studies intention and by keeping an honest and transparent communication with all contributing parties (Hakim, 2000:68). The topic of the research may not be seen as sensitive compared to other studies, i.e. politics or sexual harassment, although the information given from the respondents may be seen as sensitive from the case organisations point of view and the respondent's roles as managers. Therefore, the case organisation is anonymised in the report and it will be validated by two managers at the organisation before publication in order to assure that no sensitive information is revealed in the report. The research was conducted in a safe environment with approval from all parties (a.a:252). Moreover, the participation in the study was voluntary (Yin, 2014:78) and the interview guide was formulated with an evident description of anonymity, confidentiality and recording conditions, accompanied by information on how the data would be stored and used only for the intended purpose. All interviews with the respondents begun by repeating this information and asking for consent to record the interview. Furthermore, the data has been anonymised in storage during the research process and will be deleted when the case study is completed (Denscombe, 2012:191-193) Lastly, all respondents will get access to the report (Charmaz, 2014).

4.9 Critical reflections

During the method section it has been argued that the most adequate way to shed light on, understand, describe and explain the social phenomenon and answer the research question is by using a case study and qualitative research method. Although, it should be underlined that

these methods do not serve without limitations. Yin points out that a case study based on a single case can be hard to generalize to the larger scope since the data collected is focused on a certain context (2014:50), in this case an organisation. Findings from a multiple-case study could perhaps be seen as more generalizable. Worth considering is although that the research question and intention of the study is to get a grasp of the complexity of digitalisation and how managers are navigating to strategically develop their workforce's competence, leading to a need of going deep in one organisation rather than to spread and compare different organisations. Since, the case organisation is very large and acts in a global environment the findings could be generalizable to similar organisation within the manufacturing industry. Moreover, the qualitative research method has received critique since it is based on a limited and rather small amount of units, it can be hard to do systematic comparisons and is very dependent on the researcher (Svenning, 2003). Thereby, the intention has been to follow the interview guide, ask follow up questions, receive elaborated answers, during 60 minutes in order to collect enough data to draw general conclusions, find similarities and differences. My previous experience of having worked as a recruiter, implicates that I as researcher am used to the interview situation and importance of asking un-biased open-ended questions and transforming the data in an objective manner.

5. Empirical findings

The following section presents the empirical findings from the 16 semi-structured interviews and the secondary documents. The data is presented in an analytical manner, with quotes from the participants, to show general conclusions, similarities and differences between the managers and the five business areas.

The empirical findings show that strategically developing competence in the era of digitalisation is seen as a complex but necessary activity. The managers are trying to balance several contradicting themes. The themes interpreted are how shall the workforce be stable enough to continue developing value but at the same time dynamic and adaptive to a quick shift. Shall the strategies be reactive to the external environment or perhaps proactive or even cutting edge. Hence, reactive referring to being alert and quickly adapt to changing conditions rather than acting first to change or prevent something, proactive as taking action by causing change not only reacting to change when it happens, and cutting-edge referring to the most modern stage of development in a particular type of activity (Cambridge, 2018). Moreover, there are the aspects of what is certain and what is uncertain, shall one be careful or courageous and how does one balance control and risk. It is a challenge for managers to

balance these themes in a convincing way enabling legitimate strategies and activities. Therefore, the empirical findings will begin by looking further into how managers navigate in the current environment leading into the part on how managers strategically plan for competence development of their workforce. Which is followed by a part establishing the organisational routines used to alter the human resource base and thereby strategically develop the workforce's competence. It is finished by what changes managers predict for the workforce and future competence requirements.

5.1 Identifying the aspects of navigation – Uncertainty - Pace - Input

Overall, the interviews with the managers indicates that the business environment is changing, becoming faster with new competitors setting new challenges on the organisation and therefore increasing the level of uncertainty. Managers express that digitalisation is at the heart of survival in the current business environment and that there is not really a choice in the matter of becoming digitalised. Hence, there are so many benefits to gain; quality, traceability, consistency and a much safer work environment. Historically a company was not able to innovate without many years of operations and storing data. However, this is changing. Even though digitalisation is not seen as something new, the arising technology, with analytics and connectivity at the centre, is creating new possibilities and enabling new actors to enter the market. Hence, start-ups are becoming competitors since the new technology is available to everyone who wants it. Therefore, there is a need to transform the business model and change internally in order to stay relevant and competitive. The managers state that it depends on the internal environment if the technology can be implemented, and if the organisation will be ahead of its competitors, just in time or to slow and therefore, become irrelevant.

> *It will happen whether we like it or not. We need to be more consequential if someone does not understand that the world will be digitalised, if you are not part of it you will become irrelevant (Group Manager Manufacturing).*

Thereby, the managers emphasize that they need to automate and digitalise their processes in order to reduce costs, be more effective, flexible, agile, and take advantage of the opportunities. They also mention a downside, it being the cybersecurity and enabling people to do bad things. Therefore, there is an increasing degree of uncertainty, creating more risks and the need to be dynamic.

Since the managers express a need to be faster than their competitors, seize the opportunities of digitalisation and implement it in their processes to remain competitive, there was an

interest to understand how the managers experience the pace in the external and internal environment. When asking the managers about their experience of the pace there were rather split answers and contradicting views. Some say digitalisation will not go so fast;

> *There are two things you need to understand with digitalisation. The first is that it will not go as fast as everyone is saying due to the simple reason that the 'thinkers' and journalists writing about it are sitting far away from reality and write about what digitalisation will implicate. But when you get into reality there is a human that needs to adapt. The human is the constant in this and it has not changed so much. So I think it will take thirty years, just as the other technological revolutions always have done. (CEO).*

The belief that it is not going to go so fast is dependent on that digitalisation not only implies that processes need to change, it also indicates that the humans have to adapt and that usually takes time. There are also big investments needed in order to become more digitalised, leaving a question of costs. The other side, implies that it will go fast, they argue that there is a sense of urgency needed. The digital world requires speed and there has to be bold moves done to not be left in the dust. Thus, indicating that it may even be needed to work with other companies, such as start-ups in the future.

> *The big constraint that we have is that people sometimes believe that there is plenty of time. So this year we are going to do this and then three years later we do that and in ten years this. If we have not done that ten year picture in three years we might be irrelevant. So that is the challenge actually to keep the pulse up and keep the speed in the change. Even if it is painful, not doing it is going to be so much more painful. (Group Manager Manufacturing).*

The contradicting experiences of the pace may be related to how close one is to the customer or the fact that it is seen to be very hard to stay up to date within the area of digitalisation.

> *It is almost impossible to stay up to date with all changes today and to some extent maybe it is more important to know what you want to do than try to follow every new update or news or something that is coming. I could probably spend two lives more just reading about everything that is happening in this area. But the trickiest is to know what is relevant for what you need to achieve. I have actually put more focus on trying to define what we think we need to achieve. And then look for solutions than try to follow and be updated on every little thing that is happening around the world today. (Group Manager Logistics).*

Overall, the understanding is that the external environment is moving fast increasing the need to be proactive and the internal environment is currently to slow. A majority of the manager's mention that their processes has not changed much in the last years however, since three years back the managers are trying to have a more outside in perspective gathering input from external sources. Hence, there is an attempt to clarify and predict the increasing uncertainty and control the risks.

The interviews show that managers have different ways to navigate and they receive input from various sources. It can be determined that the managers mainly gather input to be able to react to external conditions and in some cases be proactive. There is a variation in the manager's answers, though generally there seems to be a combination of trusting your experience and trying to get input from external channels. The slight difference established seems to be connected to the manager's business area. The IT related managers describe that they get a lot of input from the external channels in their daily work, by following the market and trends on LinkedIn, having consultants, by going to and arranging non-profit meetups with other companies and suppliers, enabling constant dialogs. Meanwhile, sales describe that they get most of their input from customers who are in different industries and by reading articles on the internet. However, manufacturing and logistics are not as naturally exposed to the external, they need to seek it themselves. Managers in manufacturing describe that input is received by exposing themselves to the developments by visiting other company's factories. Thus, it is mentioned that a theoretical presentation is not as powerful as experiencing it. Logistics point out that they need to receive input from customers therefore they try to collaborate with sales to get information and discuss with distributors to get first-hand information.

There is although mentioned a contradiction to listening to the external environment for input and a note of caution that the customers may not know what is needed in a couple of years, thus, to build your own development on the external environments input may therefore be risky. This is mentioned by a middle sales manager.

> *You need to validate with the market but I also feel that sometimes I am not sure. Our customers may not have the latest digitalisation either. They might not have a clue that this will be needed in five years. So this is a bit hard with the outside in perspective. When it comes to digitalisation I am not sure always that our customers are aware what they need either. If they do not have that forward looking thinking and preparing their suppliers and saying that they better be digitalised in five years, then it is not going to be acceptable. We need to step into our customer's shoes and try to help them. (Middle Manager Sales).*

Thus, there are many ways to gather input to try to stay up to date with changes which is not always an easy task. It is more of a reactive approach than proactive. If it were to be more proactive the information gathered should be used to create different ways of enacting with the external environment. The next part will present how managers describe that they currently are strategizing and what support there is for managers in the organisation.

5.2 Strategically developing the workforce's competence tackling uncertainty

The managers describe that the demanding and uncertain environment affects their way of strategizing. Generally, there are differences interpreted between the managerial levels and business areas. Some prefer planning, some by taking actions and looking back, and some try to analyse, map and predict what is coming in order to make strategies. Hence, they can be proactive, reactive, careful, courageous, taking risks or wanting to get control. There are various ways and activities described by the managers and the timeframe deviates. The strategies have more characteristics of being reactive than proactive or cutting edge.

The line manager in logistics describe that there has been formulated a master plan where they are actively working with strategizing for future competence needs and development with a timeframe of five years. The group and middle manager state that they have the ideal state in mind and then they work from that continuously in many different timeframes, three months, two years or five years depending on the situation. The Group manager for innovation and development points out that strategies come by doing and it is hard to plan.

> *I do not like people that sit down and do the strategy first and then start doing, I think you learn when you start doing and then your strategy starts becoming more clear, what it should be, otherwise it very much becomes infographics. (Group Manager I&D).*

The middle and line manager in innovation and development explain that they are not doing any strategic plans. They have clear aspirations for the future and their main focus is to grow the department and deliver results. In two years it can perhaps be beneficial to start doing strategic competence plans. Meanwhile, the IT department has developed a framework for strategic competence development of the workforce helping them look into what competence they will need theoretically and hypothetically in five to seven years time, although it is not a systematic approach yet and that is challenging because it needs to be adjusted along the way.

The group manager of manufacturing describes the strategic process in use, they make a ten year aspiration and then define what activities are crucial within the next three years to get there and then it can be altered along the way if needed.

> *I am not making a Strategic plan for ten years, but each and every one of my direct reports is to present their vision of where we are going to be in ten years and what are the most important things that need to happen in the next three years to get there. Then I just leave vacuum of seven years. But at least we know that there is a direction so when we take day to day decisions then we still have a target picture. Is this taking us in the direction or is it taking us away from the direction? If it takes us away from the direction. Why are we doing it? Maybe there is something that we did not understand or short term limitations that we*

have no choice but to deviate a bit from the long term direction. (Group Manager Manufacturing).

The managers for sales believe that the changes will not stop and that strategically developing the workforce's competence needs to come on the agenda. It is also stated that there is a need to dare to try new things, dare to fail and step outside the comfort zone. Hence, there are several challenges mentioned by the managers when strategizing to change the human resource base and increase the dynamics in the organisation.

5.2.1 Challenges in the making of strategy

There is consensus among the manager's statements regarding the challenges of trying to navigate, lead and strategize in a global manufacturing organisation. Challenges that are mentioned is the culture of the organisation, the overall environment of the manufacturing industry, as it is described as very slow, the uncertainty and the need to take legitimate decisions when competence developing the workforce. Several managers mention that they are an engineering company that wants facts and proof before making decisions but the changing business environment with increased speed and uncertainty forces them to go outside their comfort zone and make decisions with less proof.

Well, yeah you also have to see then, that we are an extremely fact based company, an engineering company, we want proof that it will work. That goes, you see it in finance, sales and certainly in engineering, we want proof, but trust your gut-feeling, of course it is not to make stupid decisions but you have to combine the facts you have and say, okay enough of facts I now have enough information and I am prepared to in three month's time say, hm maybe there is a need for a course correction or maybe I was really wrong on this. But at least I took a decision. (Group Manager I&D).

Hence, the managers describe that there is a need to be more courageous and willing to let go of control and take more risks, trust their intuition, in order to act in the uncertain environment. Carefulness and control are not emphasized in the current environment. However, there is a challenge in this; the aspect of creating legitimate competence development initiatives. When managers are trying to strategically develop the workforce's competence there is the industries constant pressure on short term profitability and being cost-competitive.

To be honest. Sometimes we do a strategic mapping of the competences we believe we need. But the way approvals work here I am constantly being chased on cost. I do not have much freedom to say, I would like to have these competences within the next couple of years. I simply do not have the head-count or the budget to increase that. So it is a very, I wouldn't call it a strategic process, it is not ad-hoc, we know where we are going but it is position by position. Because if I would hire the ten people I think I need in two years, if I hire them now, then I wouldn't have the budget for it. (Group Manager IT),

It is further explained by one manager that, if one manager gets leeway then the others would also want this, leading to the costs going up, profitability down and then the shareholders would not be happy. This, indicates that there is more of a reactive than proactive approach with a higher level of control than risk.

A challenge that can be seen to be hindering the development against credible competence development strategies is the culture and the structure of the organisation. The manufacturing organisation is described by the managers to still shaped by its history. The legacy can be seen as driving the company and as long as improvement in relation to history is done then that is seen as good even though this may indicate that they are losing ground to competitors. Therefore, a key priority explained has been and still is to change the structure and the culture of the organisation to be more outside in and expanding the horizon of all employees in the organisation in order to become more dynamic, innovative, and courageous.

> *So the focus is; How do we create a culture, a way of working, and an organisational structure that makes it possible for us to be so creative and fast, so people can actually innovate faster in this organisation than actors can do outside this organisation. Because the question is how can a large organisation be as effective as a small organisation? (CEO).*

Indeed, all managers describe that the organisation has to become faster, more agile and accountable. Thus, there is a need to balance the contradicting requirements of being stable enough to continue developing value but at the same time dynamic and adaptive to changes in the external environment. The data shows that it is a question of risk mitigation. There cannot be done activities that jeopardise the ability to serve the customers or safety in production, but other than that in a big change process it is argued that it shall be done in steps. Another aspect to consider when balancing stable and dynamic is that it depends on the context.

> *I think you need to decide; is this area, topic, project or function suitable to follow the stable way? or should we do this in a more disruptive way. To be able to live with two kinds of cultures. If we say that everything should be a little less stable, then it can become chaos. I think this thing that we do now by supply chain 4.0 and integrated planning cannot be stable. Because there is nothing to stabilise. Because it does not exist. We need to create something and then have the conscious decision to say that we will do this in a more disruptive, innovative, testing, fail fast and correct way, that is the approach and not try to take the approach here that we should stabilise as quickly as possible. (Group Manager Logistics).*

The managers mention that there are some aspects that can hamper them from being more dynamic. Aspects mentioned by a majority of the managers is that they have a very low turnover and a high middle age. This is on the one hand seen as negative, hence, then there is not a natural evolution and the employees mindset may become institutionalised and

therefore not challenge the organisation with different views. It is also described to be hindering young people from coming into the organisation, because if no one leaves then they cannot recruit. The positive side is that people are loyal and as mentioned in sales it implies that they can obtain a high level of continuity against customers. However, the low turnover and middle age is seen as problematic if there were to be a reduction of employees. Swedish labour law indicates last in first out which means that the newly recruited, perhaps with the needed digital competence, bold ideas and innovative mindset will be let go. Hence, competence that may be needed to handle future challenges in the manufacturing industry. However, the managers in IT state that they have a bit higher turnover than in the rest of the organisation but it is not as high as similar companies within IT.

Moreover, managers mention that aspects such as labour regulations, unions, and not least the employee's self-interests and motivation can make it harder to change the workforce and become more dynamic.

> *Many reasons why it is hard to change the workforce. First of all, if you have European resources, it is typically regulations for what you can and cannot do with the employees. It is simpler in Asia than in Europe. Here it takes a bit longer time. That's my feeling. The second aspect to consider is individual's motivation, desires and the up going market. If you try to push people into things that they do not want, they leave and then you lose that competence that you might have built over 7 years. So this leads to the knowledge and competence in itself. If I lose someone who is key, then it takes us many years to recover. If we lose a number of people in the same area, then we have a bad situation. So it is not easy to tell people what to do or change position. We are a bit tied up and rather dependent on our resources. (Middle Manager Logistics).*

Thereby, there are many aspects to consider that influence the strategies to strategically develop the workforce's competence and the managers mention that it is not easy to know what is the right thing to do, if the right decisions have been made, or how it is best to define the strategy, but they need to start somewhere.

5.2.2 Experienced support when shaping strategy

The managers argue that it could be beneficial to get more support from HR in matters regarding strategically developing the workforce's competence. Hence, when they were asked; what support there is in the organisation considering strategically developing the workforce's competence? The majority of the managers said, "I do not think we have any". Therefore, a follow up question was asked; is there any support from HR? Then the response could be, oh yes, that's right I have a Human Resource Business Partner (HRBP) or Strategic Human Resource Business Partner (SHRBP). Overall, the managers describe that there is

some support in the organisation regarding strategically developing the workforce's competence. The resources are different depending on the level of the manager. Group managers have a strategic human resource business partner (SHRBP) that is considered to be a resource for heavier questions regarding competence development and workforce planning. Meanwhile, middle managers and line managers state that they have local human resource business partners to support in the matter and discuss competence. There is however a wish stated by the majority of the managers that there could be more support in order to be more proactive. The SHRBPs are described to have a very big area of responsibility with approximately 1000-3000 employees and sometimes up to 50 managers to consider. Therefore, there is a time constraint to how much effort can be put in.

> *Yes. I am quite sure. Our HRBP is doing as much as she can but she is, 'this thin' across her duties so there is simply not time. Competence development is not only a HR related question it is about business development and operational development and in our BA that is leaning on people. So we need to work on finding a way in how to develop operations. That is anything from strategic skill matrices, to development paths, to gap analysis to training courses, man we have a lot to do! To be quite honest we could probably absorb a handful of people to really boost us in this area, instead of maybe recruiting one and helping us over 12 year's time. We could take a good umph! at it to really get going. (Middle Manager IT).*

Hence, it is not only seen as competence development but rather organisational development. Although, a group manager brings up the challenge with HR supporting in matters like strategic competence development due to the need of understanding the business and skills needed. It is said that sometimes HR has to little knowledge and believe that there is perhaps one digital competence to strive for, when actually there is a number of different competences depending on where value shall be brought in the process.

The managers, describe that there is no central process for strategic competence development, also called strategic workforce planning process (SWP), to support the managers. There are although, other supporting global processes like the talent management process, succession planning process, performance review process, recruitment process, trainee program, competence development process on individual level and local employer branding initiatives. Though, there are contradicting views if there is a need for a SWP process. The majority of the manager's state that it could be beneficial since there is a lot to think about so it is sometimes hard to know where to start, thus a process could help with that. The risk stated is although by having it as an isolated process and depending on if the content is very detailed or not detailed enough (referred to by a manager as all-inclusive and not inclusive enough), it might not deliver the value intended.

> *Well it is always a question of how many of these kind of topics shall one treat in isolation, Of course competence planning is needed. Do you need it as a focused area in itself or do you need to bring it with you continuously all the time? If we break away to many of these topics, treat them in isolation, like talent management in isolation, succession planning in isolation, we maybe do not come into something that is really implementable. It will stay on a powerpoint then. So I think it is more important to look at all these three, four, five hundred aspects continuously. But there is a set of standard questions you probably ask in all this. So that we can have. (Group Manager Logistics).*

Hence, it depends on the content and execution, it is stated that it is however hard to know beforehand, when it is too much or too little information. The managers explain that if there were an isolated process it would need to be simple, easy to adapt and execute. It shall guide the managers to define the gaps, see what talents are available, educate people, implement it, rather than discuss around it. It is said that there cannot be a perfect process, the need is a dynamic process so things can be added when skills are changing. Hence, managers express that adaptability is key since the changes are coming faster than they are used to, implying that their probably needs to be some kind of conscious decision in competence development of the workforce. Earlier it may have been a natural evolution but now actions need to be taken and changes will need to be done continuously, perhaps not big changes, but small. Thus, the managers are in agreement that the process needs to fit the uncertain environment, where it is hard to plan to far into the future. Hence, there is a need to be dynamic and adaptive creating the paradox of having reactive strategy and taking conscious decisions to be more proactive. The next part will go into how managers strategically develop their workforce's competence by looking at the organisational routines and activities that help alter the human resource base in the organisation.

5.3 Organisational routines to help alter the human resource base

According to the managers the organisation needs to become more dynamic and increase the speed of adapting its human resource base in order to meet the new demands of digitalisation. They lay emphasis on creating better collaboration, agility and communication in their business area but also between their business areas. It is underlined that digitalisation cannot only be corporate led it needs to be initiated and worked with on all levels. Overall, the managers describe that there are several organisational routines that enables activities on multiple levels and create the ability to alter the human resource base and strategically develop the workforce's competence. For the current workforce it is described that they use training and development, performance reviews, rotation, retaining, information sharing, restructuring, building new teams, introduce new ways of working, to change and develop

their workforce. Although, the managers lay different emphasis on the routines and focus on varying activities depending on the challenges in their business area. Moreover, there are routines and activities to alter the resource base by bringing in new competence. Every manager mentions recruitment, some mention partnerships, utilising consultants or agency workers, and the majority points to the importance of employer branding and attracting activities to support the recruitment process.

5.3.1 Organisational routines to strategically develop the current workforce's competence

A first and big step to change the workforce towards the demands of digitalisation was done when the organisation went through a restructuring three years ago. The central organisation was downsized and the hierarchical lines changed in order to increase accountability on the managers. Every manager is seen to have a key role in driving the organisation forward and if they do not do it, then their position is irrelevant. Therefore, Group management is putting emphasis on the manager's role and having leadership that fits the digital environment.

> *We need leaders who can lead in this digital environment and, I do not know if this is the right thing to say but they have to get what the time is, they have to be able to see that there are different challenges and a different skills set needed. I think good leaders will evolve with that but I think if you have been a good leader and evolved with a certain way of working and if you are not willing to adapt it and understand different ways of communicating and using the new technology that we have, then that can be a struggle (Group Manager Sales).*

Therefore, there is an increased focus on leaders. A challenge is mentioned, that some managers on operative level are holding on to good people rather than letting them develop further which is not beneficial from an organisational point of view. There is rather a need to support employee's development and change of jobs within the organisation. Thus, a manager's leadership affects the way they choose to develop their workforce.

Apart from that it is argued that it is not always easy to alter the resource base and strategically competence develop the workforce. Thus, against the background of the challenges described previously and that the managers have to work with the resources they currently have.

> *First of all, to some extent you have to accept that you have the people you have. Even if, the ideal would be that everyone would be twenty years younger and would have taken the science courses and data science courses from Chalmers, that is not the case. So, then you need to find that to some extent you can change the organisation and change people, but you still have to work with what you have. (Group Manager Logistics).*

Even so, the managers lay different emphasis on the routines and focus on varying activities in order to alter the human resource base depending on the challenges in their business area.

IT and Innovation and Development describes that they work actively with becoming more dynamic. One way they are doing it is by utilising consultants. When they need more competence they hire consultants and when they do not need them anymore they let them go, this makes them dynamic when the market turns. They also describe that they have mainly individual trainings for their employees and that it is up to the line managers to work with this, but there is an initiative to hire an academy lead in IT who will be responsible to develop this further. Although, it is in not easy to do joint training efforts since they have few resources within each competence area. Meanwhile, there is also a lot of learning on the job in IT hence, the platforms they are working on change often and therefore, there are workshops and conferences that the suppliers are arranging.

Meanwhile, Innovation and Development lay emphasize that since they have a lot of consultants they expect them to be trained when they are hired. Though, they mention that it is hard to find people with both software and mechanical knowledge so they need to train for that and all the employees get training in agility. The Innovation & Developments middle and line manager describe that four months ago they have restructured to a new way of working by introducing an agile concept called Devop's. This shall increase collaboration and accountability on each employee and remove repetitive work from people.

> *We have just restructured to the Devop concept since we want the teams to lead their own work and make their own decisions. This indicates that we are transforming from working project based to product based. The way the department was working there was a start and end date which is challenging with the typical software development process. Our process needs to be more dynamic. So we need to change the way we are working, were budgeting and decisions do not happen at the end of the year but every month in a collaborative manor. Is this direction right? Yes, then keep going, if not change it. This is the change from product to project. Project has start to end date, product does not. (Line Manager I&D).*

The IT department restructured into something similar a year ago. Fusing different roles into one capability indicating that employees can work within different roles in a capability and therefore not have the same need to change jobs to be challenged or developed. Hence, the new ways of working are intended to retain current employees. This is seen as a way to become more dynamic, be proactive and limit the uncertainty of having the right competence. In this way it is more fluent and the risks not as immense if someone leaves.

Manufacturing on the other hand has no problem retaining employees, it is quite the opposite, the managers describe that they need to be more dynamic. The challenge they are facing is that with the demands of digitalisation and changes in processes with automation as key they

will need to reduce the workforce and change the way they work. They are introducing group based rotational work for all employees in the factories since this enables them to acquire different skills and creates new opportunities to develop their competence. They are also working with coaching their employees and developing a people transfer plan so redundant employees can be upskilled or reskilled to match new conditions. There are different training programmes for employees and digitalisation webinars for managers. It is emphasised by the managers that they need to work more with this and that they have a societal responsibility in taking care of their employees. Therefore, they try to work closely with trade unions in order to find good ways of developing competence and taking care of their employees.

Moreover, all managers in manufacturing mention that changing the mindset is a key priority. There is a gap in how managers see things and the employees sees things. Hence, there is also a slight feeling of uncertainty from the employees. The managers describe that they try to manage this by sharing information, talking about the future and challenging the employees to develop, think and act independently. There is also an aspiration to have diverse teams with various backgrounds, ages, skills, traits and aspirations so there is a good knowledge transfer and a possibility for the employees to influence each other positively. The group manager describes that there is a need for constant improvement and a mindset in getting good even better and looking at what is good today is that good tomorrow? Therefore, there has newly begun an initiative to build a central team that will support the manufacturing organisation in technological developments, efficiency analysis, clarifying future competence needs, have the visionary picture of the future factories and build corporate knowledge around it. Therefore, there are many activities and organisational routines being done in the manufacturing business area with the focus of becoming more dynamic, being proactive and limiting risks.

The sales department is also changing and faced with new demands. The new value proposition sets new challenges and the value chain will be developed and change the sales process. Therefore, the managers describe that the sales process is changing from being relationship based to insight selling. There is a need to give our customers insight in how they can develop their organisation with our value proposition and products. The Group Manager describes that they will need less people and more efficient ways of working. Thereby, the manager describes that when employees leave they are not being replaced, the team may be restructured, some employees moved around or changed tasks.

> *Our challenge is that we have to become more efficient and sometimes the most efficient way to develop mentally, what we have done is, at first we are not replacing people because in total we have enough bodies. I am sure of that but they are just in the wrong places. What we have gotten to now is if someone will leave, I move some people around, and I change a little in what they work with. Two things have come of it, one we become far more efficient and two we have actually blossomed people's careers cause in doing that, persons are being challenged and sees something different. (Group Manager Sales).*

Additionally, the group manager and middle manager in Sales put strong emphasis on rotation. They wish to develop the employee's competence by rotating them two or three months between departments, business areas and countries. Hence, the more mature countries have longer experience, stability and very high competence levels in their departments meanwhile the less mature countries have a higher speed, more dynamics and are very innovative. Therefore, by rotating people a lot is developed, people, departments and local organisations. However, the culture is seen as a challenge. When people are moved it can be seen as bad performance from other peers and this is often not the case. Another challenge is the labour law, rotations are good but it is not always easy to facilitate.

All managers in Sales agree that performance reviews are seen as a good activity to develop competence. Previously they were mainly focused on results and financial targets, but what has changed now is that they are more focused on behaviours. Thus, this is seen as a way to change the mindset by promoting certain behaviours.

The line manager in sales describes that two years ago there was a joint global upskilling of the salesforce. However, this is not something usual since it is very expensive. Training and development is mainly done on an individual level and in the future there is a belief that the employees will need training in new sales techniques and digital tools. There are currently no programs for that. Therefore, it can be established that the human resource base in sales is being altered continuously and there are some activities to develop the workforce's skills and behaviours.

Meanwhile, the logistics managers describe that digitalisation implies big challenges but also many opportunities for them. The value chain in logistics can be more efficient by the new technology and the start to end process can become shorter. Therefore, emphasis is laid on activities that involve collaboration with sales and manufacturing. It is described that logistics have to come closer to the customers, end-users and understand their needs. Thereby, there is also attention focused on rotation of employees to develop their competence in logistics.

> *We try to encourage people to move on and not sit to long in the same job. I think, we are relatively good to encourage people to move and change functions. If you start in sales, you do not need to retire in sales. To allow this kind of changing in different areas. I think that is a fantastic way to actually grow competence. (Group Manager Logistics).*

In the future there may be a need to restructure the departments, hence, there are many blue collars working in the warehouses and the initiatives toward supply chain 4.0 will indicate that processes will become more automated leading to that roles will change. So far the managers do not mention that there are any ongoing initiatives to prepare the workforces competence within these areas. Although, all the managers describe that employees get training and development on individual level hence, it is a matter of the employee's interest, some can be trained, some want it, some don't and some perhaps are not able to be trained.

Additionally, the managers mention that they focus on retainment of current employees since the logistics process is complex and it takes a long time to learn the different aspects connected. Hence, it is not easy to find the competence they need so actions have been taken to change this by increasing the status on some roles, by altering titles and salaries. Therefore, logistics is currently using organisational routines that increases their dynamics.

5.3.2 Organisational routines applied to reach the competence that is needed

The managers point out a couple of organisational routines and activities applied to reach the competence that is needed in order to adapt its human resource base to the demands of digitalisation. Every manager mentions recruitment, some mention partnerships, or utilising consultants or agency workers, and the majority points to the importance of employer branding and attracting activities to support the recruitment process. The managers describe that every recruitment needs to be approved by higher management and that there is a global process that shall be followed. Every recruitment that is started needs to have a purpose and a business case describing why the competence is needed and how it will add value to the organisation and team. Therefore, the process of adding competence is more reactive than proactive. However, currently the business areas have different circumstances when it comes to adding new competence, some have the possibility to be more proactive than others. The middle manager and line manager in Innovation & Development describes that they have recruited a lot and need to add even more competence this year. They describe that they have 32 recruitments granted this year for their department which is currently 60 people. Therefore, this is a business area that is very prioritised by the organisation and they have the possibility to have more proactive and cutting-edge strategies to reach the needed

competence. However, there is an issue; it is hard to find and attract people with the competence needed, more often than not the competence cannot be found internally.

> *It is pretty dry. I need people with three year's experience since the department is growing very quick so I need someone that can start working directly. So the focus at the moment is just to get competent bums in here and get them working! We can hire as many as we can find. (Line Manager I&D).*

The managers also mention that the salary levels sometimes hinder them from hiring the people they need. It is pointed out that they may not be a software company but they are competing against them competence wise. Therefore, the managers describe that the department hires many consultants since this is a way of getting the competence in quickly and get working with the needed developments. Although, they wish to get in more full-timers since consultants are an expensive way of adding competence and is not reliable if circumstances change on the market. As much as the company can let them go, they can leave on the day as well. Thereby, it is interpreted that their current choices have some risks and they could need more courageous initiatives to be cutting edge and reach the competence needed. The group manager of Innovation and Development emphasises this and points out the need to work with employer branding, have a more offensive recruitment strategy and build networks. Especially since they mainly do external recruitments.

> *We need to recruit a bit more on the offensive level because I must say the people that we have recruited to our department recently, that is very much thanks to somebodies network, it is not with the help of HR and I do not know how much we work with headhunters but if we do, it seems to be very unknown. I do not know how much we use LinkedIn for searching. Because I mean I have a fantastic network from LinkedIn and I have never anybody asking me, do you have any candidates that we could use. So that is very strange and employer branding, that we can talk another hour about. (Group Manager I&D).*

All the managers in innovation and development mention that they will probably need to develop partnerships with other companies to get more competence on machine learning and artificial intelligence but it is important that they have some of this competence in-house so good communication and collaborations can be established.

Furthermore, the IT department is describing a similar difficulty in finding and attracting people with the needed competence, finding the skills is hard but finding the needed personalities is even harder. Hence, it is stated that there is a war for talent and that there is the dilemma of being locked into an industrial setup with salary setting based on an international set of rules and that there are more attractive places to work.

> *Our organization is a good place to work, but there are more sexy things out there. So it is easier to attract people to work in areas like self-driving cars and IT than our products and IT. So it's a struggle. (Group Manager IT).*

The managers have several active recruitments to increase the number of employees with expert knowledge and in order to recruit these highly qualified people the managers lay strong emphasis on employer branding.

> *The teams around the recruitment centre they are doing an excellent job in trying to support but the whole absence of using the companies brand for getting people motivated to apply is limited because "the connotation is still with the heavy industry and the grey haired old man". In the proactivity in attracting talent we have a tougher time than Volvo and other companies. They have an even more attractive brand but also attractive projects and are much more visible on social media, campaigns and spend more money on attracting. We can talk our employees to death of how great we are, if you cannot see it, feel it or touch it then it is just talk (Middle Manager IT).*

The managers of IT describe that they do both internal and external recruitment therefore, it is important with the external employer brand but also the internal. Hence, it is stated by a manager that IT is like a leasing company, there are a fleet of competencies and they are rented out to projects where they are needed. Moreover, the managers describe that a strategic initiative they are following is the Global Trainee Programme. Hence, taking in high potential newly graduates and giving them the opportunity to develop in-house. The middle manager although, states that they could and would probably need their own programme taking in 10 young people and developing them within the organisation to fit the needs of future competence requirements. But there is a time constraint and costs hindering this. Although, it would be worth looking into. Therefore, there is a wish to be more proactive in strategically developing the workforce's competence but it is experienced as challenging due to the setup and brand of the organisation, leading them to act more reactive and increasing the uncertainty in reaching the needed competence.

Meanwhile IT and Innovation and Development have a hard time getting the competence they need to meet the demands of digitalisation, sales, manufacturing and logistics, work with other challenges. Overall, there is generally a focus to use external recruitment to mix up the current workforce, create more diversity by bringing in young people, and get bold ideas from people not fixed in the institutionalised scenery of the organisation, in order to change the mindset and make it more innovative and dynamic. Therefore, sales mentions that it would be beneficial with partnerships with different schools, to get the connections, the

branding and the ideas to develop further and faster. Hence, the managers do not believe it is hard to attract people but they are asking themselves if they are attracting the right people.

> *No I would not say it is hard to attract, but the challenge that I would ask is are we attracting the right people. If your branding is not proper and we just have our product out there and somebody would want to be more involved in digitalisation, they probably would not intuitively go to us. So it is very important to start attracting the workforce of the future. The people that are going to be leading us to where we want to go. As we said earlier we do not need a giant group but we have got to start attracting people that, what we are trying to go to is intuitive to them. Our industry by default does not attract that. Manufacturing in general has a hard time with this. (Group Manager Sales).*

The managers in logistics agree with sales and say that it is not hard to find the competence that they need, the tricky part is to find the people with the personalities that they need. Thereby, logistics is also part of the Global Trainee Programme to shape young employees within the organisation. The managers in manufacturing emphasises that their main focus during recruitments is the mindset and attracting more women. The line manager also describes that they have many partnerships with schools to reach the competence they need when recruiting. Thereby, there are some proactive activities to reach the competence that is needed in logistics, manufacturing and sales. The next part will present how the managers describe that their workforce is changing and will need to change, what competence the organisation has today, and what competence will be important in the future.

5.4 Predicted changes for the workforce and future competence requirements

Overall, the managers have shown that they are trying to think about what will come and what will be required. Thus, there is a general understanding that the ratio and number of resources will change. There will overall be less workforce, although balancing the total distribution with less blue collars and more white collars.

> *On the newly implemented fully automated production line there is 28 people. A normal production line has about 100. Although, this is not only to the benefit of digitalisation. It is a benefit of new ways of working and technology. I do not want you to get the wrong picture. (Middle Manager Manufacturing).*

Thereby, there will also be a need for different competence profiles and there are two clear sides when all managers think about future competence requirements. The first is skills and the second is the mindset.

5.4.1 Future skills

There is a slight variety in which skills the managers believe to be important in the future depending on business area, since the technology introduced will be different then specific

skills to match the technology will be needed, but despite that variation there are some common themes. Skills like statistics, analytics, data science, e-commerce, machine learning, data mining, security, cloud technology, artificial intelligence and change management will be needed. Whereas, change management is emphasised by many managers since without that nothing will happen.

Positions such as business analysts, solution architects, service owners, agile coaches, social media experts, security experts and engineers are mentioned many times. It is also seen that there is a need for increased knowledge of the internal processes leading to a need of multidisciplinarity and multinationality competence i.e. the combination of business and software or software and logistics will be highly demanded. The managers mention that it is not so easy to find people with these combinations. Thus, when this is the case it is described that there will need to be an increase in communication and collaboration between, individuals, teams, departments, business areas, and the hierarchical levels.

The majority of managers also believe that digitalisation will have implications on the current occupations and may even create new positions that they do not have today. Thus, automation, robots, artificial intelligence, machine learning and other new technological developments will replace certain occupations tasks and demand new ways of working. This is likely to be developed which implies that most employee's tasks will be affected in some way. These changes imply that employees in manufacturing will need to be a touch more academic. However, this is not seen as a surprise and should not be so for a manufacturing company working with these kinds of investments. Thereby, this indicates that there is a high level of certainty that occupations tasks will change and that it will influence the competence requirements.

How the tasks and competence requirements will change has not been established by the majority of the managers. It is stated that there has not been done any outspoken analysis or assessment on organisational level with the purpose of trying to get a grasp of and predict the future needed competence. Although it is stated that every time a project is initiated the competence required to achieve the project is considered. Thus, there are not any top-down analysis being made. The only manager that mentions that they currently do analysis is the middle manager in Manufacturing. They are doing some analysis, mapping and have meetings to discuss competence on a strategic level. It is pointed out that perhaps they cannot visualise exactly the needs but it will serve as reference along the way and it is possible to

build around it. However, IT describes that they sometimes have done competency mapping and continuously meet on all levels and discuss competence needs meanwhile the other business areas do not. Other tools, that are stated by logistics, used to get a grasp of the future competence needs are competence matrixes and skills mapping. Hence, these can serve as a roadmap and are done by managers. With this in mind, there has not been many initiatives to try to predict how the competence requirements will change by the majority of managers which can be seen as hindering the mitigation of risks, the level of control and the possibility to be proactive. It may even prevent the ability to be courageous.

5.4.2 Changing the mindset

The managers are very distinct when talking about future competence requirements that the personal traits or mindset of the individual is excessively important.

> *I can drop Albert Einstein in this company, the smartest guy in the company but if he does not know how to navigate things and how to influence people and connect people and all that you are really not enabling, so I think that is sometimes lost because people may view them as softer skills but I think they are pretty important! (Group Manager Sales).*

Personal traits like courage, empathy, passion, clarity, flexibility and the ability to lead under uncertainty, comprehend large amount of data or the holistic view of settings, being self-driven, innovative, analytic, and ready for change are mentioned continuously. It is stated that digitalisation implies so many things so it is just our imagination that stops us. The aspects that were historically impossible are now possible. A manager describes the mindset needed by referring to collectors and hunters.

> *Generally, there is always a mix, I think if you go really simple, there is collectors and hunters. At the time we have to many collectors. Collectors pick up things and care for it as if it were there children. The hunters, they go out and find new grounds, new animals to kill and explore more things. If I could choose I would suppress the collectors a little bit and push for the hunters and be out there with business, take risks, engage, passion is something that I desperately miss at times. When I see people with it, I go for them. (Middle Manager IT).*

Hence, there are too many collectors and there is a need to have more people with passion, courage and a cutting edge mindset. However, the managers describe that it is hard to make this happen. It is not just to let the people go with a bad mindset and recruit new, there are a lot of things to consider in order to competence develop the workforce in a credible way. Hence, the culture and mindset is stated to be a problem. It is pointed out that employees have the presumption that it is not their own responsibility to make things happen it is the "organisations". What is forgotten is that they are the organisation. Therefore, the managers argue that there is a need to create an atmosphere that promotes people that take initiatives,

and were it is better to act than not. Thus, also having managers that can lead this. Historically it may not have been as crucial but in the current environment this is not the case, managers state if it goes to slow then companies no longer survive. Thereby there have during recent years been initiatives to change the culture and the mindset of the organisation.

> *Being a legacy company, one thing that we have worked with is to change the culture to a more needs driven, action oriented, speed oriented culture where people take a holistic responsibility for the outcome. Cause, you know, changing the organisation is the easy part but to change the way people act is another thing (Group Manager Manufacturing).*

Although, managers state that they are not there yet. They need to become more agile in how they do things, and think. Employees need to get more responsibility and that responsibility needs to overlap with other people in different places of the organisation. Leading to that managers should not have to be involved all the time, which is currently not the case, thus the organisation is still seen as rather hierarchical according to more than half of the participants.

The majority of managers describe that in order to get these traits and mindset in their workforces they believe in a mixture of younger inexperienced employees with a natural mind for digitalisation and the older employees with a lot of organisational and process knowledge. Thus, there is a belief that by having young people that are grown up with technology, have a natural connection to it, and empower them, then it is easier to drive digitalisation forward. Meanwhile, the majority of manager's mention that the skills and process knowledge is still a central competence for the organisation. So personal traits need to be combined with the adequate skills.

Nonetheless, there is an openness that it is hard to know now what competence will be required and which occupations will be emerging in the future.

> *Yeah sure. I think the worst is probably that we do not even know what we need in the future. Maybe we don't even know what we 'should' have today. Who can be completely sure that what we have today is right? (Group Manager Logistics).*

> *Competence and skills is something that is a moving target all the time. We cannot say that know we have the right competence. We need to keep investing in it. Competence is always to develop the people but also the business. (Line Manager Logistics).*

Therefore, there is a well-established level of uncertainty and risks of not having the right competence indicating a need to balance the requirements of being reactive to shifts, proactive to acquire the needed competence due to technological developments and creating cutting edge skills and mindset if the intention is to lead developments and be more innovative than other organisations.

6. Analysis

The following section uses the theoretical framework to analyse and shed light on the empirical findings in different ways, thereby also connecting to previous research and elaborating on advantages and weaknesses in the managers current strategizing.

The empirical findings indicate that the demanding and uncertain environment affects the way of strategizing. It is clear that strategizing includes many choices and that it involves both conceptual and analytical exercises where in this case the heart of strategy is made by the managers of the organisation. Generally, there are differences interpreted between the managerial levels and business areas on how they strategize in the uncertain environment. Some prefer planning, some by taking actions and looking back, and some try to analyse, map and predict what is coming in order to strategize. Hence, they can be reactive, proactive or cutting-edge, careful, courageous, taking risks or wanting to get control. There are various ways and activities described by the managers and the timeframe deviates. The strategies have more characteristics of being reactive than proactive or cutting edge. So what does this tell us about strategizing in the era of digitalisation? Is there one best way which gives maximum value to the managers, employees and the organisation? How are the managers balancing the contradicting requirements? Should it be done differently or can it be done better? By applying the theoretical framework with different strategizing approaches, that have different advantages and disadvantages, the way managers strategize can be analysed further, shedding light on the complex phenomena in various ways. The analysis will continuously try to describe effects on micro (individual), meso (organisational) and macro (industry) level in order to show differences and the complexity of various aspects affecting the strategizing process.

Taking Mintzberg et al (2009) approach to strategy into consideration it can be clarified that depending on the content of strategy the strategies can be seen as *position* or *perspective* (Porter, Mintzberg et al, 2009). Position implying where the organisation or products of an organisation is located in relation to the external market, thus, having an external view. Perspective being focused on the internal view and an organisations way of doing things. Digitalisation seems to be affecting the positions of organisations on the market, hence start-ups and other actors now have the possibility to compete with large organisations, leading to less hundred year companies on the market. Therefore, with the manager's expressions in mind digitalisation seems to require the manufacturing organisations to change their

perspective in order to keep their position. According to Mintzberg et al (2009) changing position while remaining perspective is seen as easy meanwhile changing perspective while maintaining position is not. Hence, the CEO stated how do we create a culture, way of working and organisational structure that makes it possible for us to be more creative and faster than other actors on the market. The issue expressed was how can a large organisation be as effective as a small organisation? This is described as a major challenge since it is not only the organisational structure and processes that need to change it is the humans mind and actions which usually takes a long time. Therefore, it is a challenging task to formulate strategies that help change perspective meanwhile remaining position. It requires an understanding of both the internal and external conditions. What is it that shall change on the inside in order to fit the outside? And, how do we make sure we have the competence needed to do this? That is when dynamic capabilities are stated as beneficial, hence how an organisation alters its human resource base to reach a fit with the external environment and depending on the content of the capabilities they can contribute to competitive advantage.

6.1 Dynamic capabilities in relation to environmental dynamism

Based on Schilkes (2014) definition of dynamic capabilities, thus, organisational routines that affect change in the organisations resource base, several capabilities can be identified in the empirical findings. The majority of the managers describe that they use performance reviews, training and development, rotation, retaining, information sharing, restructuring, building new teams, introduce new ways of working, to change and develop their current workforce. Meanwhile, in order to acquire new competence every manager mentions recruitment, some mention partnerships, or utilising consultants or agency workers. Although, it is not the capabilities in themselves that increase competitive advantage it is how they are done, if they are unique, not easy to copy and dynamic. Hence, this is in line with Schuler and Jacksons (1987) approach which emphasises that the human resource activities have got to be chosen wisely, since they contribute to the strategy and therefore, the chances of enhancing competitive advantage. Previous research by Teece et al (1997) and Jöranli (2017) mention that important organisational routines in order to adapt the human resource base to reach competitive advantage is recruiting, training and development with upskilling and reskilling, and restructuring. Thus, the managers in this case see many more organisational routines to help adapt the human resource base to create a fit between the internal environment of the organisation and the external business environment. Worth considering when arguing for the dynamic capabilities contributions is although, Schilkes (2014) factor of environmental

dynamism, thus, how fast is the environment changing. It can be distinguished that the managers believe that the manufacturing industry used to have a low degree of dynamism. Hence, the industry has been stable, slow and rather predictable. However, this is said to be changing. It is described by the managers that the pace is increasing and therefore, the ability to alter the human resource base needs to follow the development, by becoming faster and more adaptable. The level of dynamism is from a macro perspective becoming more intermediate. Hence, it is not a high level of dynamism since the pace is not comparable to the software or telecom industries.

These circumstances are seen as beneficial since dynamic capabilities are most advantageous when the dynamism is intermediate. When it is slow or fast, the level of needed restructuring is either too slow to be beneficial compared to the costs of changing resources or too fast to what can be handled therefore, creating other costs. With this said, a slight difference of experienced pace can be established on meso level, hence, between the different business areas. The software and IT related business areas describe a higher pace and a more competitive market to acquire the competence they need and keep the competence they have, compared to the descriptions made by the managers in manufacturing, sales and logistics. Indicating that in order for their dynamic capabilities to be beneficial they need to be altered faster and prioritized in relation to the external context. Therefore, creating other costs. This is seen in the IT and Innovation and developments areas hence, both areas are using a lot of consultants to get the internal competence that they need and have introduced new ways of working demanding new ways to measure performance and set salaries therefore, leading to additional costs.

6.2 Intended or Realised Strategies

When looking at the manager's ways of strategizing to develop the workforce's competence by adopting a traditional approach to strategy (Mintzberg & Waters, 1985) the empirical findings show that there are both *intended* and *realised* attributes. Hence, if it would have been only intended no adaptation would have been done along the way. A formal planning process would have been done. This is not the case it is rather that the managers have an idea of the ideal state, priorities set to be followed and take action from that. Then adoptions are made along the way if circumstances change. Therefore, it has influences of being *emergent* strategies (Mintzberg & Waters, 1985; Mintzberg et al, 2009). Since there is an intention it is not purely emergent and since it adapts along the way it is not purely *deliberate*. There is

both control and learning along the way leading to the good mixture that reflects the ability to predict as well as react to unexpected events (ibid).

Taking managers statements as examples it is clearly expressed that there is a need for agility, more dynamic strategies and processes hence the challenges expressed due to digitalisation demands there to be learning and adaptation along the way. A manager mentions that it is not always beneficial to first sit down and formulate a plan and then start acting. It is better to start acting, try different things and then see what comes of it, hence, then the plan gets more clear. Meanwhile, another manager mentions that there may be a need for more proactive actions "We will see changes coming faster than we are used to. So we probably need some kind of conscious decision to do something with competence development, it has been a natural evolution in the past but I think we will need to take some action, to make changes here." There has to be more intention in decisions and strategic choices. Therefore, the current strategizing can be seen as mainly being done with attributes from realised strategies leading it to be more emergent. This indicates that there is emphasis on reactive strategies since this enables them to adapt to external conditions. However, with the increased pace it is harder to react. Hence, in order to be able to react the managers need to be very aware of the internal and external conditions by receiving input from various sources which can be rather uncertain and takes a lot of time. Thereby, it could be beneficial to try to predict what can be predicted to be able to make more strategic choices, proactive strategies and activities leading them to be a bit more ready when circumstances change. This leads to the question is there one best way to strategically develop the workforce's competence in a manufacturing organisation? and is it to have reactive strategies with a little bit of proactive activities?

The empirical findings imply that there are differences between the business areas and managerial levels. Although, the traditional approach to strategy does not really enable a more detailed level of analysis therefore, the SaP approach is adopted to give more insight on how strategy is done and clarify how this is the case. Thereby, focus will be on the practices, practitioners and praxis in a micro and meso perspective (Jarzabkowski & Spee, 2009).

6.3 Strategy as Practice and Dynamic Capabilities

As argued in the theoretical framework section the dynamic capabilities theory and strategy as practice approach can be connected. The *practice* theme described by Whittington (2006) is according to my perception closely related to Schilkes (2014) definition of dynamic capabilities. Hence, the *practices* identified in this case is the mentioned organisational

routines in the part of dynamic capabilities. By focusing on the themes of *practitioners* and *praxis* in strategizing. Thus, *who* and *how* it is done, not only *what,* as the dynamic capabilities and practices accentuates can be argued leading to a better understanding if the praxis's are reactive, proactive or cutting edge.

6.3.1 The practitioners involved in the strategy-making process and their influence

In line with Whittingtons (2006) and Jarzabkowski & Spees (2009) definition of *practitioners*, being either individuals or aggregated groups, internally or externally, there are several actors identified to be influencing the strategy-making process. The managers can be seen as individuals or the aggregated groups of group, middle and line managers. They can also be aggregated to strategize within a business area, hence, manufacturing, sales, innovation and development, logistics and IT. The managers as individuals are influencing the strategy-making process from an internal perspective and can in this case be seen as navigators, decision makers and action-takers. They are the actors that are responsible for sensing and considering the external environments conditions to then translate this into organisational actions. They decide how the competence within the workforce shall be developed; shall there be recruited new employees or shall training be initiated. Thereby, they are central actors in the strategy-making process.

Another aggregated group of actors that can be identified as internal practitioners are the HR professionals. They influence the strategy-making process by supporting with knowledge, different HRM related processes, such as talent management and succession planning, and in the future perhaps even a strategic workforce planning process which according to findings shall be easy to execute and adapt to fit the external environments conditions. Hence, which Granberg (2011) points out is important in order to reach competitive HR practices. The HR practitioners are also affecting the strategy-making process by providing managers with services in recruitment, training and development, and discussions on competence, although there is a wish to get more support. However, it is not argued that HR shall lead the discussions or process but they could if they had more time be bouncing partners in more proactive activities. Hence, this is in line with Chapmans (2009) recommendations. Another, identified internal aggregated practitioner influencing the strategy-making process are the current employees. Their individual motivation, aspirations and current competence affect how the workforce's competence is strategically developed. Leading to the importance of having employees with a dynamic mindset and will to learn, hence, this is also emphasised in

previous research on competence. The soft skills will become even more important in a digital business (Eurofund AM, 2017:18). Hence, more interactions, interdisciplinary communication and collaboration will be required leading to the need of employees with competence to communicate in complex environments (Van Houten & Scholten, 2016), be creative, and have a problem-solving attitude (Acatech & Forschungsunion, 2013).

Moreover, there are some external practitioners influencing the strategy-making process. They are the people with the competence that the organisation will need in the future. Thereby, also how many they are, where they are to be found and if they find the manufacturing organisation attractive. Thus, with previous research stating that it will become even harder to recruit by 2020 (WEF, 2016) this is a factor that has extensive influence on the strategy-making process and the managers are already expressing that it is hard to find the needed competence. The last practitioner being identified are the trade unions. They are an external actor whose actions and interactions impact the organisation's strategic competence development strategy. Therefore, there are many practitioners influencing the strategizing process in the manufacturing organisation and this indicates that there is an *interactive strategizing* occurring, where several actors outside top-management are involved through different interactions (Hendry et al, 2010). However, this also creates an increased complexity for the managers as navigators, decision makers and action takers in the strategizing process since there are a lot of actors, views and aspirations to consider.

When analysing the empirical data with Whittingtons (2006) definition of *praxis* in mind many praxis's can be identified. According to Jarzabkowski & Spee (2009) different descriptions can be established depending on if you look from a view of the practitioners being individual or aggregated groups, thus, managers, managerial level or business area, or in a micro or meso perspective. The theme *praxis* refers to all formal and informal activities happening in the formulation and implementation of strategy, hence, how *practices* are being done. All the managers use the praxis differently depending on their context so in order to get a better picture, it will be further analysed from practitioners being aggregated groups. Hence, in line with the studies intention showing if and how there are differences in navigation and strategizing depending on which managerial level or organisational boundaries the managers belong to. This is especially interesting since, the dynamic capabilities approach (Teece, et al 1997) emphasises that all managers shall take a strategic responsibility and shall sense and shape opportunities and threats, and seize opportunities, in order to remain competitive.

6.3.2 Aggregated group managerial level and praxis in micro and meso level

When looking at the praxis from the aggregated group of managerial levels, hence, group, middle or line level differences can be found. The group managers in the study are the participants with the most authority. The majority of them have global responsibility and are in the top-management team reporting to the CEO. Therefore, they have a substantial influence on the strategy-making process for their business areas as well as the organisation's overall strategizing. The group manager's decisions influence the direction of how the workforce shall be strategically competence developed. Therefore, the middle and line managers strategizing is affected by how the group managers refers to and works with it. For instance, when managers wish to recruit, to get needed competence, it has to be approved by managers above them, and the group manager sets the prioritisations for the workforces.

The middle managers and line managers express that they convey the messages from the upper levels of hierarchy. However, they express that they also push up their views and ideas to challenge the upper management. A middle manager expressed "I do not see myself in the middle of it, I am in the lead of it. If upper management are doing something I believe to be wrong, I will tell them and say I want to do this. So I would like to feel that I am at the centre of it and not anyone else". Hence, the lower hierarchical managers feel empowered and believe that they have a strong position and possibility to influence the strategy-making process. Furthermore, a difference in praxis can be seen in if the managerial levels meet and discuss competence. The group managers that are in top-management meet and therefore, have the possibility to discuss it. Meanwhile, there are no meetings for the other managerial levels. Though, leaving the question open if it would be beneficial to have.

Group manager's praxis is in majority aimed at holistic strategic decisions some on organisational level and some on business area level. Hence, changing the culture, the mindset, navigating through meeting other companies, analysing the market, sensing their competitors, developing the organisational routines, setting priorities and emphasising certain activities. Meanwhile, the middle managers are balancing being strategic and operational, for instance recruiting both externally and internally, changing ways of working to more agile, getting input from other external sources, internet and articles. The focus is more within the business area and interdepartmental. Moreover, the line manager's praxis is mainly departmentally-or team focused. Hence, concentrated on actions as internal or external recruitment, individual or joint training, informing and coaching employees to understand the changes, input from articles or other managers. The line managers express the aspiration to

change the mindset of the workforce and become faster and this is done through challenging the employees to take initiatives and come with ideas. Therefore, their role can be seen as both strategic and operational almost to the same extent as middle managers. Hence, the process of approval hinders them from having a more strategic position. Therefore, with consideration to the studies intention to understand if there are differences in the strategizing between managerial levels it can be argued that there is.

6.3.3 Aggregated group business area and praxis in micro and meso level

There are similarities and differences in the empirical findings if we look at the praxis from the aggregated group of business area. Hence, if the managers are within manufacturing, logistics, innovation and development, IT or sales. The managers in manufacturing indicate that digitalisation with emphasis on automation, is demanding them to change the way of working, reduce the number of workers, reskill some employees, upskill all employees and recruit experts within new areas. This is closely related to what previous research stated as likely changes (Eurofund AM, IIoT, AIR, 2017). This is being done through introducing a group based rotational work, development of a people transfer plan, creating a central team focusing on trying to define future changes and competence needs, coaching, employees undertaking different training programmes, and managers being upskilled by digitalisation webinars. Thus, training is central to the development for future conditions which was emphasised as especially important for employees in production hence, their way of working is likely to be very affected by the technological advancements (WEF, 2016; Eurofund AIR, 2017). Moreover, there is collaboration with schools to get the competence they need in the future and managers expose their employees to other factories to increase understanding and knowledge. Hence, these two can be seen as important proactive initiatives. The managers also challenge their employees to take initiatives, come with ideas and think differently than they are used to, emphasising the importance of the softer skills also in blue collar occupations (Rübmann, 2015; Eurofund IIoT 2017). There is also currently begun some competency mapping and strategic analysis. Hence, many praxis's can be identified.

Meanwhile the praxis identified in sales is connected to a clear aim of rotating employees between departments, business areas and countries, creating as previous research points to multidisciplinarity and multinational competence (Van Houten & Scholten, 2016), recruiting from external sources to get bold ideas, getting in young employees, individual training and development through e-learning, performance reviews to develop the behaviours of current

employees, reducing the workforce by not replacing employees when they leave and discussions on the importance of employer branding and attracting the right employees. Moreover, by meeting customers, distributors, several conversations and input on the market, aspirations, challenges, and competence could be discussed, leading to a cross collaboration which was argued important in the reports by Eurofund (2017) and world economic forum (2016). Within logistics the recognized praxis's are rather similar to sales having individual training through e-learning, encouraging people to move around, rotate between departments and countries, working with HR to increase status and salaries on certain roles, recruit trainees, discussing competence within the management team and other managerial levels, working from a departmental master plan, thus, indicating some activities to proactively predict competence needs.

In Innovation and Development several praxis's can be determined. The new way of working called the Devops concept, which was emphasized in Eurofunds additive manufacturing report (2017), consultants utilised and sometimes hired, individual training opportunities and joint training sessions to upskill employees understanding of the business and products, recruiting internally and externally, and having discussions with HR on how performance shall be measured and salary set with the new Devops concept. Moreover, the managers encourage employees to go to external conferences, staying updated on the internet and learning on the job. Also, the managers stay updated by listening to the employees and networking through meetups. IT has similar praxis's to innovation and development. The praxis identified is a structure introducing the new agile way of working building capabilities within specific areas, several active recruitments; which was likely to be according to the world economic forum report (2016), recruiting trainees, consultants utilised, individual training programmes, an academy lead is recruited to develop new training initiatives, strategic competence mapping has been done and there is a master competence plan aimed at the next 5-7 years. There are active discussions with HR and within the management team and different levels. Input is gained through multiple external sources, such as, LinkedIn, consultants, meetups and networking. With this in mind, there are many praxis's identified in the five business areas some are the same and some differ but this indicates that there is a complexity to strategically developing competence in one organisation. Therefore, there cannot be one best way of strategizing the development of the workforce's competence if the intention is to maximise the value to every employee, manager and department. Therefore, also the whole organisation.

6.4 Reactive, Proactive or Cutting Edge

All in all, the praxis's can be described as mainly conditioned by reactive initiatives. It is not that proactive activities do not exist. There are quite many but the overall approach is more reactive i.e. the managers express that it is hard to be more strategic because there is not budget for it and the need to have a clear business case for all initiatives. Given the statements of activities there does not seem to be any cutting-edge initiatives for development of competence. There is rather a focus to alter the resource base to the environmental conditions with the timeframe of 0-12 months. Thus, there is a short timeframe and informal way of planning. The findings indicate that short timeframes are seen as beneficial in order to be reactive to changing circumstances. Although, a reflection is does the timeframe need to be short in order to be dynamic and reactive? Why cannot a plan be made with more proactive activities, a further time frame and be altered along the way? There is a slight variation indicated between the business areas referring to this. Manufacturing, IT and Innovation and Development can be seen as having more proactive activities than sales and logistics. It could be argued that this is because their conditions are undergoing more changes. Hence, manufacturing is facing many internal changes with a lot of technological advancements being introduced, such as the fully automated production line, replacing many employees forcing them to change their workforce's competence. Meanwhile, IT and Innovation and Development are faced with high external pressure due to the competitive market to reach the competence needed. So far sales and logistics are rather stable though this is likely to change when the digitalisation projects of integrated planning and supply chain 4.0 is up and running. Although, this indicates that they could be working proactively to prepare for these changes that are possible to predict, start developing reskilling, upskilling and creating a people transfer plan just as manufacturing currently is doing. Hence, would it not be beneficial to have a plan with more proactive activities, a further time frame and the possibility to alter it along the way?

With the previous research in mind taking into consideration that digitalisation is likely to have significant impact on employment levels, occupations, competence, leading to job displacements and widening skill gaps (WEF, 2016:1). The need for proactive strategies are emphasized. Otherwise there is a risk of not reaching the competence you need on the competitive market. It is argued that it is not enough to be reactive, organisations need to be able to anticipate and prepare for future competence needs in order stay competitive, seize the opportunities and mitigate the risks (ibid). Therefore, it could be beneficial for the

organisation to think about if they can make any activities more proactive or even cutting edge. The managers are clearly stating the challenges they have and perhaps will have in the future. Therefore, there is a possibility to do more proactive initiatives within these areas even though they cannot be certain that the environment will not change. Hence, IT and Innovation & Development could benefit from more aggressive recruitment strategies and smart partnerships, meanwhile manufacturing would benefit from having employer branding focused on young women and men to get a diverse group with a different mindset than there currently is because otherwise the competence may have become even harder to find, get and keep. This, could be accompanied by a reskilling programme for the current employees so they do not become redundant. The question is then how uncertain is the environment and how much are the managers actually doing to simplify their navigation by predicting the future? Previous research expresses that "business leaders are aware of the challenges but have been slow to act decisively" (WEF, 2016:6) and that it is important to have leaders with the ability to focus on the present but also visualise the future, think bigger and more innovative in order to shape the wished future state (Granberg, 2011:278).

6.5 Actions in uncertainty

The managers mention that digitalisation and the current business environment makes it hard to plan and predict the future, and indicate that they have to base decisions on less evidence and more on theoretical hypothesis. By adopting the uncertainty theories of Courtney et al (1997) and Wiltbank et al (2006) further analysis can be done to analyse and understand how the managers are working with making the unknown known.

Courtney et al (1997) believe that the unknown can many times be known if the right actions are taken to handle the uncertainty. They argue that by classifying the uncertain situations into four different levels each connected to a certain set of actions, the conditions can become clearer and decisions can be based on more facts. The empirical findings suggest that the uncertainty level could currently be between a two and a three. A two being that there are alternate possible options and level three that there are multiple plausible outcomes. Whereas, a four is when there is no possibility to predict. The managers describe that the business environment is changing and that start-ups are creating competition on the market increasing the speed and uncertainty. Meanwhile, it is stated that the whole industry is slow and therefore, will not change so fast, distributors and suppliers are not so evolved and so far there is not a high pressure from customers to get developed digitalised solutions. It is stated that the technology is out there for all actors to use so it is a matter of implementing it and

altering the internal processes and competencies to fit the new investments. Therefore, it is not clear when the competitors are ready to use it. The findings also show, that there is a high middle age which could serve as an indication on some natural transition of employees hence they are likely to retire within the near future. The organisation is actively exposing itself to companies that may have come further in the process in order to understand the demands that are set and predict what is coming. This indicates that the level of uncertainty is not four.

The actions suggested by Courtney et al (1997) to be taken when the uncertainty level is two or three are using different valuation models and scenario planning. By doing this it shall be more possible to predict and make the unknown known. The empirical findings show that there is not any outspoken scenario planning in the organisation. The actions to predict the future are mainly shown in logistics and IT where there has been done initiatives to put together a master plan with a timeframe of five to seven years with the possibility to alter the plan along the way. It has been created through different valuation models by managers and HR connected to the business areas. The manufacturing area has recently put together a central team that shall work with trying to look into how the "future factories" will be. Therefore, also what competence will be needed. Nonetheless, all business areas report that they are receiving input from different sources both external and internal. This also gives them information to help predict the future. Thereby, it can be concluded that the business areas are working with different levels of uncertainty and predictability and by prioritising and taking initiatives it is possible to make the unknown more known and parts of the uncertainty more certain.

Wiltbanks et als (2006) approach the question; what shall organisations and managers do to strategize in uncertain situations? Is it to plan or adapt; hence, deliberate or emergent strategies (Mintzberg et al, 2009), thus, reactive, proactive or cutting edge strategies. Wiltbank et al argues that it is related to the ability to predict changes in the environment and to control (2006:987). There is a basic conception that what can be predicted can also be controlled and therefore it can be planned or strategized (ibid). The second approach that can be adopted to try to handle unpredictability is clearly expressed by the managers in the interviews. Thus, the aspiration to have adaptable strategies and processes, investing in flexibility and having short planning horizons. The ways of working are being changed to more agile, if a workforce planning process would be developed it should be simple, easy to adapt and execute, in order to change the plan when the circumstances change in the environment. Hence, there is a wish to have reactive strategies. The third approach possible

to be adopted according to Wiltbank et al (2006) is in accordance to that the future is possible to predict and governable so by imposing the vision for the future the environment can be shaped to reach the desired outcomes, thus, having proactive or even cutting edge strategies. This can be argued to appear from a digitalisation point of view hence, the organisation has initiated several digitalisation projects, where the fully automated production line is in centre and is considered a bold and big step into the future of factories. Hence, putting pressure on other actors to evolve in order to be competitive. Though, this is barely identified from a competence development point of view since the activities utilised are not affecting other companies, it is rather other industrial companies, the managers mention Volvo, that are affecting them. The fourth approach is not shown in the empirical findings, hence the aim is not to collaborate with other actors and create totally new business models through digitalisation. It is rather to use digitalisation to develop the current business model, effectivise, simplify and develop current processes.

There is nothing saying that by utilising these actions stated by the approaches that the right decisions can be made. It rather indicates that decisions can be based with a little more information and evidence. By taking actions to understand how unpredictability can be handled it may be that the uncertainty can be seen as a slightly less fearsome challenge. The managers express that strategizing and making decisions for the future is based on courage, trusting your intuition, go with your educated guess or gut feeling, and the willingness to experiment and fail fast. However, it can be argued that the current competence development strategies made by managers are balancing the contradicting requirements of carefulness and courage, and control versus risk, more against carefulness and control. Reflection wise it may have something to do with the culture. These strategies and initiatives are legitimate and institutionalised. Though, not to forget is that there has since three years back begun a cultural transformation to be more bold, courageous and action takers. Something, that is stated as beneficial in previous research (Acatech & Forschungsunion, 2013; Eurofund AM, AIR, IIoT, 2017) Therefore, the development may be going against more cutting edge ideas. It can be indicated that it already is happening due to the newly adopted initiatives on agile ways of working and the central team in manufacturing defining the future of factories. However, it would be interesting to see what would happen if the manufacturing organisation not only left their comfort zone related to developing technology but also in competence development activities. This could lead to an effect on other actors in the external environment.

6.6 Connecting the micro level to the macro level

Since the SaP approach has been criticised for being descriptive and not having focus on the outcome, hence, what does this explain? an attempt to elaborate on this and connect the micro practices to the macro level is done (Jarzabkowski & Spee, 2009). Looking into the praxis's of the five business areas it is apparent that there is a connection between the praxis's utilised and the challenges and aspirations the area is facing. For instance, IT and Innovation and Development are working with becoming more agile, recruiting new competence and discussing with HR how to develop the performance review and salary settings of the employees. This is crucial in order for them to attract the competence they need and retain the current competence that they have. Without this the business area will not have the competence they need to be competitive. The same is for the other business areas. Therefore, the praxis the five business areas choose to do and focus on contributes to and influences the competitive advantage of the organisation. Hence, this is in line with Schuler and Jackson's (1987) approach emphasising the connection between competitive strategies and human resource practices.

The managers in this case describes that the demands digitalisation sets on the workforce's competence leads to many HR related activities. The activities appear to be in line with their aspirations and overall strategy. However, even though there are many current praxis's to be identified, there are many activities that is mentioned that could be done or would be good if they did. Such as strategic mapping, gap analysis, establishing development paths, skills matrixes, best practices of the future competence for certain roles, creating partnerships with schools to reach and attract young employees in an early stage, rotate employees not only within the business area but outside the business area, create collaborations with other companies to get the competence that is hard to reach or acquire. By doing these activities the strategy to competence develop the workforce to meet the demands of dynamic capabilities in the era of digitalisation would be developed, with a closer connection to the external environments and therefore, increase the possibility of enhancing the competitive advantage.

The activities of creating partnerships with schools, having multidisciplinary competence and collaborate with other companies are highlighted as vital in previous research (Bryn Mawr College, 2017; Eurofund 2017; WEF, 2016) and would therefore be beneficial to look into further. This is not only beneficial from a micro or meso perspective, it is also beneficial for the macro perspective. The activities could benefit other institutions in society and other organisations in the industry. By collaborating and sharing knowledge with schools, labour

market institutions and other external actors the strategic competence development strategy could be influencing a larger scope. Perhaps even decreasing the challenges formed by digitalisation, hence, educations are influenced by practice and can therefore be shaped according to the needs of organisations, leading to more relevant competence on the labour market, simplifying recruitments and attracting people to the manufacturing industry. Therefore, there is a complexity to strategically developing the workforce's competence and the actions taken on micro level affect the meso and macro level, as well as the context on macro level influences the meso and micro level.

When analysing the empirical data, it is clear that many praxis's have recently changed or are currently changing. This could be seen as the practitioners are trying to adapt their current human resource base to fit the external environment. Hence, as dynamic capabilities would indicate create or sustain a competitive advantage. Thus, the managers are using the praxis's to balance the contradicting requirements of having a workforce with competence stable enough to continue deliver value in the current environment but at the same time dynamic and adaptive to a quick shift. In this case it is not the stability that is the issue rather the adaptability and dynamics. Hence, there is a wished need from managers to get more support from HR in creating praxis's with adaptability and speed, that contributes to creating a fit with the external environment therefore, the competitive advantage. In conclusion, the SaP approach indicates that all the praxis's being conducted by the practitioners in relation to the practices is the strategizing. Thus, what is being "done" not what they "have". The strategic competence development strategy of the manufacturing organisation is thereby, the activities done by multiple actors, affecting multiple levels.

7. Conclusion

This report has through a case study in the manufacturing industry, explored how managers navigate, in order to strategically develop their workforces competence, to address rapidly changing business environments in the era of digitalisation, to meet the demands of dynamic capabilities. The theoretical framework used to analyse the empirical findings is based on Teece et als (1997) theory on dynamic capabilities and different strategy theories connected to the traditional approach (Mintzberg et al, 2009), Strategy as Practice (Whittington, 2006) and uncertainty approach (Wiltbank, 2006). By applying these diverse strategy approaches, that have different advantages and disadvantages, the way managers strategize could be

analysed to shed light on the complex phenomena in various ways. Therefore, the analysis could point to effects on micro, meso and macro level and elaborate on the complexity of aspects affecting the strategizing process. The method used was of qualitative research design. Hence, seven informant interviews, and 16 semi-structured in-depth interviews were conducted, complemented by a review of secondary documents. The data collected was coded and analysed through a grounded theory approach and presented with consideration to Wolcott's (1994) approach on transforming qualitative data.

The study reveals that it is clear that developing strategy includes many choices and that it involves both conceptual and analytical exercises where in this case the heart of strategy is made by the managers of the organisation. Thereby, strategically developing competence in the era of digitalisation addressing the fast changes in the business environment with high uncertainty is seen as a necessary but complex activity. Leading managers to the uncomfortable position of strategizing and making decisions based on less evidence and more on intuition, theoretical hypothesis and educated assumptions.

The managers are seen to be navigating in the uncertain environment by balancing the contradicting requirements of being stable and dynamic, being careful versus courageous, having control versus taking risks, which leads them to develop reactive, proactive or cutting edge strategies and activities. However, it is a challenge to balance these themes in a convincing and legitimate way. The empirical findings indicate that there overall are more reactive than proactive strategies to develop the workforces competence in the organisation. There are although differences interpreted between the business areas and managerial levels. Manufacturing, IT and Innovation and Development have more proactive activities than sales and logistics. This can be connected to the environmental dynamism, hence how fast the environment is changing, varying on meso level. Manufacturing has many changes internally due to technological developments, IT and Innovation and Development have a very competitive fast moving external environment affecting their strategizing. Sales and logistics on the other hand appear to currently have a more stable environment and it is first when the internal projects to implement integrated planning and changing the value chain that they will feel a higher degree of dynamism. Therefore, there is not one best way to strategically develop the workforces competence in order to maximise the value. There has to be a possibility to adopt it to the current conditions and challenges in the business areas so the praxis's can be chosen that contribute to the competitive advantage.

Previous research by Teece et al (1997) and Jöranli (2017) stated that important dynamic capabilities to alter the human resource base are recruiting, training and development by reskilling, upskilling, and restructuring. The results show that there are many more ways to achieve dynamic capabilities and alter the human resource base to create a fit between the internal and external environment. Them being rotation, introducing new ways of working, performance reviews, rotation, retaining, coaching, information sharing, partnerships, utilising consultants or agency workers. The capabilities in themselves do not increase the competitive advantage it is how they are done, if they are unique, not easy to copy and dynamic. Hence, this is in line with Schuler and Jackson's (1987) approach which emphasises that the human resource activities have got to be chosen wisely, since they contribute to the strategy and therefore, the chances of enhancing competitive advantage. However, a challenge expressed is the limited level of support from HR due to resource constraint, sometimes lack of business understanding, or a simple, easy to execute and adaptable strategic workforce planning process taking consideration to the current uncertain business environment.

By applying the uncertainty theory (Wiltbank et al, 2006; Courtney et al, 1997) it is revealed that the unknown can become more known if actions are made to try to predict what is coming. The managers are not using many tools to try to predict the future. Although, there has been started some initiatives to change this i.e. building up a central team in manufacturing to try to vision what the future factory will be like and how that will affect the need for competence and competence requirements. What has been predicted is very much in line with what previous research highlights. Thus, the empirical findings indicate that there is not much of a choice when it comes to digitalising a manufacturing organisation. It is a necessity to stay competitive in the current and future business environment, occupations tasks will change, there will be less workforce overall, especially blue collars, and there will be many new competence profiles with an emphasis on the personal traits and mindset of the employees. Hence, digitalisations demands and the uncertain environment implies a need for a more dynamic, high speed, try and fail fast mindset, something that is not currently natural in an old global manufacturing organisation. Therefore, this manufacturing organisation could probably benefit from working more with proactive or cutting edge strategies and actions to reduce the challenges within each business area, in order to change the human resource bases competence, to create a fit between the internal and external environment, in order for the organisation to maintain its position while changing perspective. Hence, there

can and should be reactive strategies but there also needs to be proactive and cutting edge activities in order for the organisation not to be faced with competence gaps and seize the opportunities presented.

7.1 Future research and contributions to knowledge

Since the study implies that managers navigate mainly based on reactive competence development strategies and activities with high adaptability, further research is recommended on how the HR practices and HR processes can be developed to fit the wished requirements. It would also be beneficial to investigate if there are more tools or ways to enable further prediction of an uncertain environment. Therefore, also how the macro perspective influences the micro perspective with consideration to digitalisation. For instance, how the macro perspective is working to predict and change the societal institutions competence requirements due to digitalisation. Are schools changing their way of educating people to fit the digital business environment? Since this also has implications on organisations competence development strategies and future competitive advantage.

This research contributes with a greater understanding to the scientific field by connecting micro and macro practices in line with the SaP approach and by establishing that environmental dynamism is a factor influencing the costs in the dynamic capability developing *competence*. Therefore, this study contributes to Schilkes (2014) findings on how environmental dynamism influences the dynamic capabilities by confirming the connection when studying another capability. Something he recommended in future research. Moreover, the research contributes with transferring knowledge on multiple levels. On macro level it may influence researchers to do similar studies within other industries. On meso level it can be beneficial for manufacturing organisations wishing to alter their human resource base to fit the requirements of the digital environment. On micro level it can be a help for managers and HR-practitioners in their long-term work with strategies to competence development the workforce. Lastly, considering that the study is only based on one case and sixteen interviews it could be beneficial to do a similar study on several manufacturing organisations which could lead to a more comprehensive analysis of how managers navigate to strategically develop their workforce's competence in the era of digitalisation, with high uncertainty. However, this study does not attempt to provide "the one true story" but should be understood as one researchers attempt to understand a complex phenomenon and hopefully generate some new information.

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9. Appendix 1

9.1 Structure for the interviews with managers:

Introduction of myself:
My name is Elisabeth Hjelm and I am undergoing my master's program in Strategic Human Resource Management and Labor Relations at Gothenburg University. For the moment I am writing my master thesis in collaboration with your organisation and the Group Recruitment Centre. I have work experience within recruitment and talent acquisition. During the autumn I did an internship in the people management processes team at Group HR.

Information before we start:
The information that I will gather during the interview will only be used for the specified purpose and you will be anonymous in the research, hence your name will not be shown in the report. The report will be proofread by two managers within the organisation so that confidential information will not be revealed. I hope that it is okay that I record the interview. The purpose of this is to be able to focus on our conversation during the interview and then when analyzing the material, I will be able to go back and hear your formulations. The recording will not be shared with others and it will be deleted when the thesis has been graded. I am very happy to be here and thank you for participating!
→ *Start the record.*

Short introduction of the study:
The thesis project is intended to look into how managers strategically develop their workforces competence to address rapidly changing business environments in the era of digitalization. Interviews will be conducted with managers across the organization with focus areas Sales, Manufacturing, Innovation and Product Development, IT, and Logistics. The managers are on different levels in the hierarchy, hence, directors, middle managers and line managers. This in order to get a holistic view and a grasp of the complexity that changes in the business environment can imply. Focus in the interviews will be on how digitalization has affected the business area and how it influences the need to develop, reconfigure and hire people with new competence. Moreover, the focus is to understand how managers think about the future, navigate in the context of uncertainty and fast paced changing environment. Therefore, also anticipating what drivers will influence the business area and affect the need for new competence. Thereby, exploring how managers balance the contradicting requirements of having a workforce that is stable enough to continue developing value but at the same time dynamic and adaptive to a quick shift when circumstances change?

There are no right or wrong answers to the questions, the aim is to start talking about it and try to understand what the future holds, how we think about digitalization and competence, and what we can do to prepare ourselves for future challenges and take advantage of the opportunities it brings. Lastly, I want you to focus on your business area.

Quick reference guide for supplementary questions:
- What, how, why, who, when and where?
- Tell me more, please explain or elaborate…?
- How do you mean?
- Can you give an example…?
- Scenario.

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1. Shortly introduce yourself, your responsibilities and your business area:

1. How long have you been in your position?
2. What countries do you work with?
3. How big is the workforce in your BA?
4. What is the approximate distribution of positions?
5. Is there a low or high staff turnover?
6. Do you work project based, task based or function based?

2. Concept definitions:

From your perspective:

- How would you describe digitalization?
- How would you describe competence?

3. Digitalization:

1. Tell me a little about digitalization within your BA?
2. What is your vision for the future within this area?
3. Which are the success factors?
4. What challenges are you facing?
5. How do you stay up to date with upcoming changes internally / externally?
6. There is a lot of buzz about digitalization, how do you know what to listen to?

4. Competence

1. What is your general impression of what competence you will need in the future?
2. Have you done any projects / analyzes to find out the need for future competence? if yes, what have you done?
3. What skills do you think you will need in the future?
4. What personalities do you think you will need in the future?
5. How about strategic competence?
6. What about communication? Collaboration?

5. Strategic competence development

1. How do you work with strategically developing your workforces competence?
2. How do you plan for developing your workforces competence?
3. How is your timeframe when planning your workforce? (1, 3, 5 or 10 years)
4. How do you know what to develop?
5. Do you work consistently with strategic workforce planning?

6. Strategic process

1. Would you say it is easy to change your workforce? in what way?
2. How often do you change it?
3. When you do, is it usually quick changes or long-term strategic?
4. Do you meet the managers in your business area and discuss competence?
5. Where do you get input that it's time to change from?
6. How do you open up your thinking?
7. What if it does not turn out the way think it will? Do you scenario plan?
8. How do you act if the circumstances change?
9. Are changes usually driven by internal forces or external forces?
10. Top- down or bottom up?
11. How do you anticipate the changes?
12. How do you navigate in the fast paced changing environment?

Recruitment

1. How do you think about future recruitment needs?
2. What do you think you will need to recruit?
3. Is it easy to find the people with the competence you need?
4. Do you mostly do internal or external recruitments?
5. Do you have consultants in your workforce?

Training and competence development

1. Are there joint training efforts for certain professions?
2. What training are employees facing today?
3. Are there occupations that are going through reskilling or upskilling?
4. What kind of training will you need in the future?

Restructuring

1. Do you think you will need to restructure the competence in your workforce within the future due to digitalization?
2. Will many of the occupational groups' tasks change due to digitalization changes?
3. Do you think you will need new positions that you do not have today?
4. Are you experiencing many organizational changes?

Support

1. What resources are there in the organization to support in questions concerning strategic competence development?
2. Do you think you lack any support resources? If yes, what would you like?
3. How can HR support your business better?

7. Concluding questions:

- Do you feel as if I should have asked you anything else?
- Is there anything more that you would like to say or contribute with?
- Do you have any questions?

Conclusion:

I really appreciate that you participated in the interview and I want to thank you for your input and time!