

Berlin International University of Applied Sciences

Bachelor's Thesis

“How does the digital era impact businesses and drive change among firms?”

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Current Semester: 6

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I. Abstract

The digital era has come to hand and businesses need to act accordingly and rearrange their overall operations in order to be capable of the new ways work is getting done nowadays. But how should firms integrate digital technologies and how do these exactly save businesses from their failure? What is considered as a digital transformation and how will it be of advantage? The study is going to focus on these aspects as well. Starting with a literature review, presenting the current status of research in that field and moving on with the data collection out of case analyses, interviews as well as secondary data analysis, the study is going to present how vital the use of digital technologies is nowadays and how it actually adds value to a firms operations and overall performances.

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1. Introduction

1.1. General Introduction

There is a step before digitalization, firms generally undergo in order to be able to digitalize. This step is called digitization. By its establishment, digital trends got more attention in the global business world. Looking back to the process, how things were done years ago and bearing in mind how these actions are handled now, the impact of only digitization gets evident. To give a more in-depth insight into what is meant with this, there are following examples: “All customer files, product manuals, repair handbooks were hardcopies.” (Irniger, 2017) Even receipts are nowadays very likely to be sent out electronically before they are getting printed even. So, “digitization is the process of making all of this information available and accessible in a digital format.” (Irniger, 2017) The implementation of digitization got obvious very quickly. Even small steps when doing business but also during our daily life’s made even more apparent how established digitization is nowadays. By converting the analog information into digital information, firms do save time and boost their efficiency step by step. Having seen the potential in these kinds of tools and that it makes some operations more manageable, organizations and technology provider themselves went a step further, and so the term digitalization got popular.

Digitalization then was about making digitized information work for firms in terms of integrating them into the business operations. (Irniger, 2017) According to Gartner’s Glossary, “digitalization is described as the use of digital technologies to change a business model and provide [...] value producing opportunities.” (Bloomberg, 2018) But before even driving businesses to change or come up with a new business model, digitalization acts as “the process of considering how best to apply digitized information to simplify specific operations.” (Irniger, 2017) The process is mainly supported by many tools, applications and software that help in “[making] smart use of digitized information.” (Irniger, 2017) Leveraging digital technologies, therefore, is vital in that context. “In general, digitalization is seen as the road moving towards digital business and [therefore, a] digital transformation [...]” (i-Scoop, n.d.)

So, we come to the question, what digital transformation is and what exactly is different about it when comparing with digitalization. Digital transformation is more than only digitizing data and information and accordingly to that different

than digitalizing business operations in order to make the digital information adaptable to the overall business model and its operations. Hence, “digital transformation is the process of devising new business applications that integrate all this digitized data and digitalized applications.” (Irniger, 2017) It is the way of building new business concepts being fully equipped with nowadays digital technologies.

All in all, it is a kind of route, where all parts are integrated. However, firms can also make use of one single approach only, though following the route step by step would advance firms, who want to enter the digital era anyways.

1.2. Main Problem Statement

Nowadays, the business environment is not only affected by common market conditions, but also by digitalization. Bearing in mind that they can have lots of positive effects on general business operations and the position of a firm in the market, there also needs to be considered how this condition does involve inevitable consequences for the overall business world and all its players. With this continuous development of digitalization and its continuously growing establishment, firms who do not adapt to it would need to think about their further existence. Looking at firms such as Kodak, which has failed in realizing that digital photography is a new technology they could boom the market with (Mui, 2012), the importance of taking digitalization serious and adjusting the business to its trends gets more visible and crucial in that context. Hence, there are lots of companies failing to adapt to digitalization or to undergo a digital transformation – excluding these, which do not even realize the potential digital technologies have. Considering these aspects, it is essential to look at what firms should think of in terms of digitalization as well as what the main complexities are when aiming to adjust. It is also important to be aware of the advantages and opportunities it represents for businesses as well as the risks when not integrating it into the business operations.

1.3. Need and Justification

The study is going to show what kind of opportunities are given when integrating digitalization into the business plan by also presenting how firms, who dismiss the digital trends and technologies – perform in a global business environment as a comparison. Notable in that sense is also to highlight how digitalization and its tools, hereby the automation processes impact the performance of a firm. Hence,

the study is going to redound to a better understanding of the advantages digital technologies have when doing business nowadays and also will raise awareness on the importance of digitalization.

1.4. Research Aim

The research aims to give deep insights into how businesses implement digital elements into their business, where it starts and ends as well as whether there is an end or it is considered as a continuous infinite development. Moreover, it should highlight the importance of digitalization in nowadays business environment by comparing already digitalized firms with non-digitalized firms and different industries accordingly, where digitalization could be more or less important.

1.4.1. Research Objectives

The overall objectives focus on digitalization in general and automation processes as a tool of it. Hence, the objectives are to:

- Critically review the literature on the effects digitalization has on the performance of firms and to relate to case studies being conducted about it
- Present how digitalization helps firms in gaining competitive advantage, especially with the use of automation processes.

1.4.2. Research Question and Hypotheses

The study focuses on one main research question, which comprises two hypotheses that are going to be analyzed in the course of the research. By testing the hypotheses, the research question is going to find an answer at the end of the study. Hence the research question is:

- What are the key aspects of digitalization, and how do these impact firms and their overall business operations?

The aspects of digitalization mentioned here are included in the following two hypotheses, which are going to be tested further on:

- Digitalization increases a firm's productivity and efficiency.
- Firms, including automation technologies into their business operations, will gain a competitive advantage.

2. Literature Review

2.1. Digitalization as a driver of efficiency

The process of digitalization is not only about transforming analog actions into digital processes but involves much more. However, it starts with digitization, which can be applied in any business operations, such as information storing and sharing. These processes and generally the effects coming from including digitalization include “cutting the number of steps required, reducing the number of documents and developing automated decision making.” (Wautelet, 2017, p.2) By making use of digitalization and profiting from these advantages it brings, firms will “achieve up to 90 percent of costs reduction [...]” (Wautelet, 2017, p. 2) Hence, digitalization should make the business operations easy and fast to handle as well as make the business itself much more profitable.

Moreover, previous researches state that „[digitalization] multiplies the benefits of connectivity; it gives multiple times more economic advancement than broadband internet technology.“ (Gulati & Soni, 2015, p. 60), and put hereby emphasis on the circumstances in today’s business environment, having changed and being now concerned with valuable opportunities.

There are lots of advantages given for firms and their operations when making use of digital tools. It, first of all, accelerates processes due to fewer steps need to be done, and most parts getting done through these digital tools.

Hence, research by McKinsey states that digitalized business operations are “cutting the number of steps required, reducing the number of documents, developing automated decision making, and dealing with regulatory and fraud issues.” (Markovitch & Willmott, 2014) through these advantages and solely through the digitization of data, “[...] costs can be cut by up to 90 percent and turnaround times improved by several orders of magnitude” (Markovitch & Willmott, 2014), as being shown by Wautelet in 2017 and mentioned previously as well.

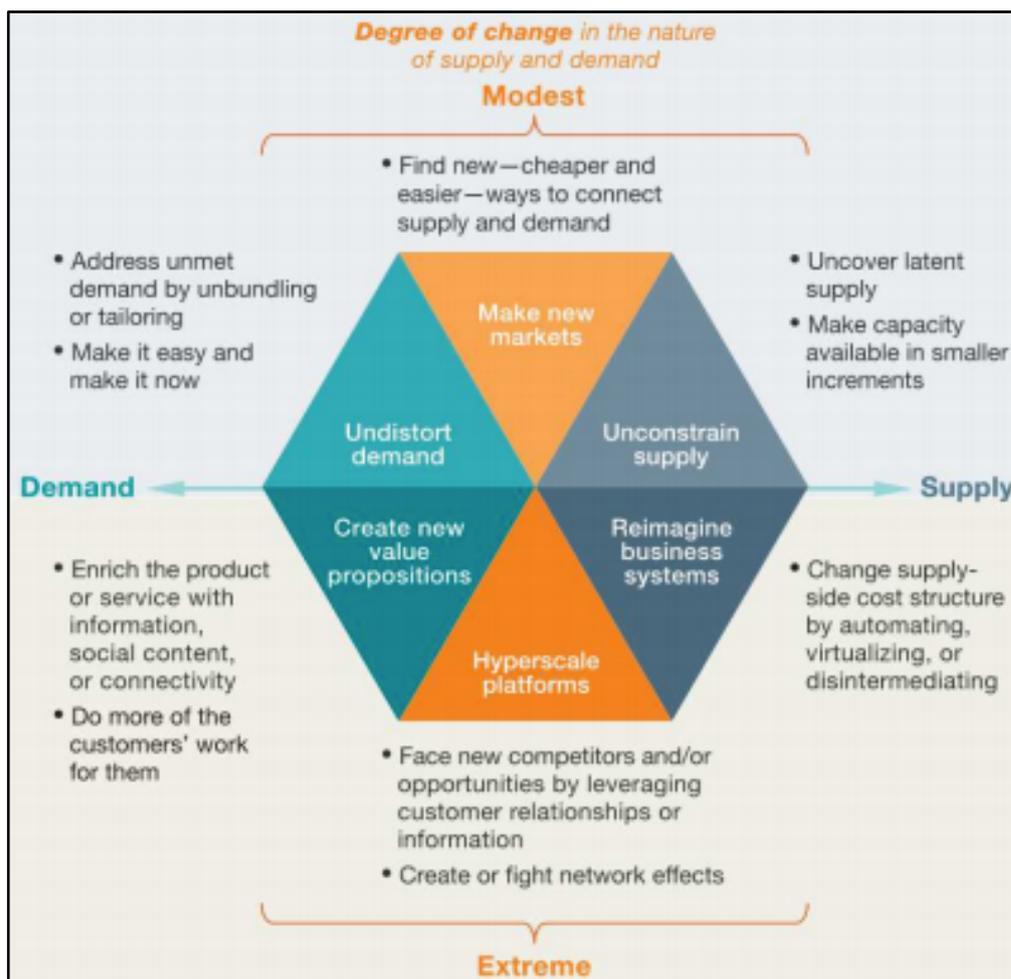
Additionally, researches state that these digital applications do advance processes by making them fast, flexible, and more effective and that they enable to raise qualities for lower costs. (Kroll et al., 2018)

Therefore, the traditional way of doing business, which includes limitations in flexibility be it through work hours or hierarchical structures should be eliminated, and in this way, efficiency and productivity should be boosted. (Wroblewski, 2018) Hence, digitalization is said to boost not only innovation capabilities but also the productivity in terms of manufacturing as well. (Kroll et al. 2018; Rößmann et al., 2015) Besides it also helps firms in networking and collaborations with “[...] suppliers, customers, and distributors.” (Kroll et al., 2018, p. 5) Researchers interpret, that these kinds of close cooperations foster the effectiveness “[...] of their resource ,supply chain and logistics management system” (Kroll et al., 2018, p.6) So it generally advances the basis of internal operations that affect external operations as well. Thinking about the external environment being in a continuous development, which at the end affects the customers wants, and changing preferences, researcher also state that in terms of increasing demand and wants of variation in products and services, digital tools are important and positively affect the product innovation and accordingly help businesses in meeting the demand of customers and in offering a diversified portfolio. (Kroll et al., 2018) Due to the emerging change not only internally but also externally, it also gets obvious, that “customers are changing [their] behaviour towards a wish for online services rather than personal service [...]” (Bygren, 2016, p.4) Moreover, Bygren states that “[another] most common reason for digitalizing a business could also be seen as reducing costs as other researches have stated as well. This is done through [different digital tools, which are applied at many business processes] and [do contribute to] a lower workforce and quicker action.” (Bygren, 2016, p.4) Hence, knowing that the customer is changing its needs, wants, preferences and buying or consuming behaviour accordingly to these and knowing as well how beneficial adapting in terms of productivity, efficiency, cost reduction as well as customer relation can be, the relevance and need of “[exploiting] opportunities [...] by continuous adaptation and proactive change” (Skog, 2019, p.5), gets highlighted and emphasized. Kroll et al. conclude their research by stating that based on the analyses they have conducted, there is “[...] a clear and positive impact of relevant digitalisation on productivity [...]” and draws also back to previous studies done in 2012,

which have also concluded their research by stating that digitalisation impacts productivity, efficiency and innovation positively. (Kroll et al., 2018, p.14)

Having lots of key players in the digital business market, who have started with the digital business concepts and models, such as Facebook, PayPal, eBay or Amazon, “the economics of doing business across borders, [...] the cost of international interactions and transactions [...] changed. (Wautelet, 2017, p.4) Thus, digitization does not only improve operations within the firm but also has its positive implications regarding any global interactions businesses are going to go through. However, digitalization is also concerned with threats; businesses need to take into consideration. To identify these, McKinsey & Company came up with following the framework.

Fig. 1: Framework to identify opportunities and threats arising from digital disruption



Source: Wautelet. 2017. P.6. Retrieved from:

<https://www.researchgate.net/publication/319273016>. Copyright by McKinsey.

While the above part shows the usual changes digitization has driven the lower half presents the extreme changes any business environment is nowadays facing due to the flow of digitalization at all. All these changes are concerned with opportunities as well as threats. As an example, a move the figure is showing is unfulfilled demand and growing expectations. It is shown as modest change. Businesses may be vulnerable to this change if, “customers face difficulties to get what, where and when they want it” – whereas they can leverage from this change if they improve the “buying process ‘to make it now and easy’”. (Wautelet, 2017, p. 17) However, “the challenges that come with digitization are large, but the opportunity is even larger.” (Boorsma, 2016)

Including the above factors, and knowing that “leading the business, in the dynamic environment [can be] a challenging task for the organizations [...]” (Gulati & Soni, 2015, p.65), it gets even more essential to take also these kinds of current trends into consideration in order to be on track in this volatile business environment nowadays. Hence, researches state that digitalization has come so far that businesses have no other choice than implementing it in order to take the best advantage out of it. It should help businesses to keep up-to-date. Moreover, the expectations coming from outside together with the flow of new-era changes, also need to be considered in order to understand the demand and react accordingly to it. Firms need to realize how vital and immense the impact of digitalization can be on businesses and should therefore build a strategy for it.

Digitalization got a condition for nowadays business environment that fosters businesses to adapt to it. Previously conducted literature is emphasizing that the time has changed as presented in the following quote: “In a world where a smartphone is no longer just a smartphone, but a potential revolution, we invite organisations to explore what digital advances mean for them and their stakeholders.” (The digitisation of everything, 2011, p. 14) Different than the business conditions long time ago, now firms need to face up to digitalization and take action immediately. Articles are stating, that the “customers live in the ‘here and now’ mode – the business that wins a high quality product in the shortest time wins.” (Malygina, 2018) and emphasizing that, as customer behaviour and perceptions change on a daily basis and get affected by digitalization, the need for innovative actions gets more and more important. Due to that, a transformation is said to be the best response to the digital revolution and its consequences.

Therefore, “companies need to develop a comprehensive ‘digital strategy’ [...] to tackle issues like [...] social commerce and the threat of commoditisation.” (The digitisation of everything, 2011, p.10).

Moreover, “digitizing select stages of the customer experience may increase efficiency in specific areas [...]”. However, to realize all these aspects and benefit from these, “[...] companies must search for talent externally [...]”, which could help in utilizing these tools at their best. (Markovitch & Willmott, 2014) But first, to be able to undergo a particular transformation, “[firms] must decide whether they can entrance or transform their existing models, or whether they need to invent a new model.” (The digitisation of everything, 2011, p.10) Depending on these decisions, digital actions vary. When changing only a few analog actions to digital processes, firms will make use of digitization. Reinventing a completely new model or transforming the whole business model on a digital basis, will mainly be a transformation according to digitalization instead of digitization. This difference is also shown in some studies, highlighting the point, that digital transformation is not used as a response to digitization, but rather is another option to deal with the emergence of the digital era within the society and mainly the business environment in that case. Whereas digitization is mostly about converting analog to digital (Raut, 2018) and a one-time action, digital transformation is mainly about the business activity, that is transformed by a backup of technology (Raut, 2018) and a long-time process. Hence, digitalization and its according transformation requires much more than digitization does. Therefore, the implications of the digital flow on businesses can vary.

However, digitalization gets also important when considering international business operations of a firm. Starting with the point of what is challenging international business operations and their management in the past years, there are a few aspects, which can be seen completely different bearing in mind nowadays business environment conditions, stated as follows: “[...] one of the prime obstacles to international business – has been redefined in recent years.”. (Lajevardi, 2014) Hence, researches come to the conclusion, that the way of doing business globally is affected by current changes and trends in businesses, one of them being digitization - and now different than it was before. Thus, “[...] via implementation of digital solutions firms might be able to reduce or eliminate some costs and liabilities that otherwise [...] would limit, eventually even prevent them from expanding abroad.” (Fodor, 2017, p.22) The driver for the redefinition and new

perspective lies in the opportunities; digitization brings with it – such as “barriers of entry to international markets are being lowered through higher visibility and reach provided by the digitization of business on global scale.” (Lajevardi, 2014) Therefore, “[...] this shift makes it possible for companies to reach international markets with less capital-intensive business models [...]”. (Manyika et al., 2016) Studies also state that in the context of opportunities and advantages provided by the tools and concepts of digitalization, firms are getting able to enter markets easily and are going to “[...] have fewer constraints, are typically more innovative, and are unburdened by outdated legacy systems.” (Manyika et al., 2016) Further, they state that these conditions will have “[...] the power to destroy long-successful business models.” (Weill & Woerner, 2015; Wroblewski, 2018, p. 15) Manyika et al. also argue, that the two components of rising efficiency and productivity, driven by digitalization not only advance the business operations but support and enhance future potential and growth capabilities that are awaiting businesses as well. (Manyika et al., 2016) Another opportunity of digitization of businesses is that it leads to new characteristics being more favourable, efficient, and effective in nowadays business economy. These, for example, are namely transparency, innovation but also the easy access to valuable information given through the advanced technology fostered by digitized actions. Accordingly, previous research states that “as people become more interconnected [via digital tools], information flows more smoothly and thereby enhance firms’ ability to expand the market at a lower cost”, wherefore firms are getting more profitable and tend to invest into other business activities and be able “to do business in a higher number of countries nowadays [...]” (Fodor, 2017, p.17) Moreover, digitizing processes of information storing and sharing enable advantages regarding operations on global scale, since it “has emerged as important ownership advantage”. (Fodor, 2017, p.17) Moreover, the implementation of digitalization is considered as a skill-winning action, wherefore researches state that “skills are considered as a resource – of individual and organizational nature – which would allow competitiveness and productivity advantages to companies.” (Sousa & Rocha, 2019, p. 257) Having these characteristics and more or less being up-to-date technology-wise, digitalization enables firms “to be seen globally shoulder-to shoulder with major players” (Lajevardi, 2014) and will enable them to “sell in fast-growing markets while keeping virtual teams connected in real time”. (Manyika et al., 2016) Meaning, that these characteristics will enable firms to have more or less the right professions for

operating in the global market and profit. As research states, those characteristics and capabilities firms gain from digitizing particular business activities will make it easier for them to enter markets globally and survive: “Digital capabilities increasingly will determine which companies create or lose value.” (Hirt & Willmott, 2014) Having these capabilities and putting importance on innovation will enable firms entering new markets and internationalizing very easily, because “digitization often lowers entry barriers, [that is] causing long-established boundaries between sectors to tumble”. (Hirt & Willmott, 2014)

Important to mention is also that “digitalization does not only affect firms that are doing business in the technology sector”. (Wroblewski, 2018, p.6) As previously conducted studies state, “the [immense] growth of highly digital and innovative companies, [...]”, have changed the overall business environment, so everyone almost gets affected by it. (Wroblewski, 2018, p.2) Hence, digitalization does affect almost all industries, which strive for a strong global presence and a competitive advantage among all competitors. However, acting accordingly to the trends of digitalization does involve many concepts, which cannot be generalized since all of these technological advancements have their specified purpose and areas they are applied at, as stated in the research conducted by Raut in 2018. Hence, “for a manufacturing company, this may mean automating processes to deliver better quality [...], whilst for the service industry this may mean digitising and improving communication and contact points to the customer.” (von Leipzig et al., 2017, p. 521)

However, digitization can also be challenging when considering the internationality aspect. Even if lowering entry barriers is advantageous for businesses aiming to internationalize and hence enter new markets, it forces competition within the market. These competitors can also be smaller companies, “that will never reach scale but still do a lot of damage to incumbents.”. (Hirt & Willmott, 2014) Therefore, researches put also importance on the aspect that, “in an access-for-all global market, the real fundamental question for [firms] remains ‘how to differentiate?’ in a market that is crowded with distinguished competition.”. (Lajevardi, 2014) Due to that, it is very important that businesses need to be innovative in that sense and differentiate themselves from other market rivals. Besides, firms need “to note that digital business is not only about delivering old business ideas and products through new channels but rather it is leveraging technology and globally accessible information to generate innovative and fresh

value propositions.” (Lajevardi, 2014), which puts again the emphasis on the aspect of being innovative when digitizing business, especially in terms of global markets. So, Lajevardi concludes, that businesses will have more opportunities than difficulties with the characteristics gained through taking steps towards a digitized business in case of operating in a global market, wherefore these challenges may be handled much easier than ever before.

In the end, as studies state, these digital innovations are used in order to advantage firms overall business model and their operations. By backing up the business models with the newest technologies, firms are going to be a step forward in terms of competition as well as in maintaining customer loyalty. (Parida et al., 2019) Since these technologies and digital services “have become immersed in our daily routines [and are] influencing how we behave in business and private contexts.” (Denner et al., 2018, p.4) it is no surprise that utilizing these technologies within the business will bring an advantageous resonance. Another advantage as studies state that is forcing the advancements is that these tools and digital innovations altogether “may be mutually reinforcing [...], by harnessing the creative energy of managers and employees [...]” (Zott, 2018, p.14) This again awakes firms innovations, adds value to their differentiation strategies and at the end “[...] [change] value creation processes that in turn [enable] an emergence of new business models”. (Härting et al., 2018, p. 287) Generally, previously conducted researches are putting emphasis on the argument that through digitalization and the according change in the business environment by e.g. lower entry barriers, lots of opportunities are created and by making use of those belonging technologies as well, efficiency and productivity are going to be boosted, so that the firms can take the best advantage out of the given opportunity. (Fitzgerald et al., 2013; Wroblewski, 2018)

2.2. Automation processes enabling competitive advantage

“Organizations face a new dilemma because they have to develop new capabilities to innovate and simultaneously maintain the old ones for their existing business.” (Holotiuk & Moormann, 2018; Ebers, 2017, p. 4) For building, creating these kinds of new capabilities, there are several concepts of digitalization, which include many tools which make it even easier to be a part of the innovation and integrate themselves into the new environment. So come, that “with the integration of more technology into their business processes, firms are deviating from their proven,

existing, and traditional innovation path” and moving on with “[...] adopting new identities as digital innovation intercepts with traditional behavior patterns [...].” (Holotiuk & Moormann, 2018, p. 4)

Automation is one of these tools and enables firms to work on processes more efficiently, accordingly to Heymann-Reder even without the need of human labour. (Heymann-Reder, 2019) Instead, software products are going to be realized these processes in a fast, faultless, recorded, and optimally to the firm adjusted way. (Heymann-Reder, 2019) By making use of these innovations, firms boost their performance and productivity, because employees are no longer charged by any small actions, but instead can focus on the more crucial aspects that drive productivity, efficiency, and stability, which at the end positively affect the firms’ position in the market and their competitiveness. (Heymann-Reder, 2019) Automation takes place in lots of areas of business operations: starting from finance or IT related operations; it is also implemented in logistics and customer services as well. (Gründerszene, 2018) Moreover, the approach of using automation in possible fields does also contribute to employee satisfaction, lower error rate, better-adjusted compliance, and less labor cost. (Heymann-Reder, 2019) Accordingly to Singh, “[...] automating routine tasks, can also help enterprises reduce their costs by up to 65%, while simultaneously improving the time to complete these tasks.” (Singh, 2017) Again, it implies that employees will be able to work on more significant operations which affect their competitiveness. (Singh, 2017) Hence, automation is said to be a tool, that helps firms in focusing on the core operations of a firm and exploiting the opportunities presented in the market to the fullest, without bothering with routine tasks.

Researches state as well that these digital services and technologies contribute to a differentiation of firms in the market when done accordingly. (Zillmann, 2019) Hence, in order to survive in the age of data-driven platforms, digital channels and interfaces have to be built up to be perceived as high quality (Zillmann, 2019) Zillmann states, that by contributing to a better customer experience when using these advanced technologies, which at the end are giving qualitative data to the firms helping them to improve their operations, customers are going to choose them more likely. (Zillmann, 2019) This at the end, contributes to an advancement in the industry and helps to gain a competitive advantage in the market. Zillmann promotes this point also by stating that lots of firms make use of the modernization and automation of their business operations in order to intersect with their

customers and meeting their wants more efficiently. (Zillmann, 2019) Important to touch upon here is also his argument related to the digital businesses, which have been established already into the global marketplace and how they are replacing the traditional businesses in several branches. Not only through the use of automation processes, but also lots of different technologies, digitalization comes along with, helped firms such as Spotify, Netflix, N26, Airbnb, Amazon and much more to break through. (Zillman, 2019) Zillmann also states in his research, that in the global market, start-ups already came up with new innovative solutions on a digital basis and that major corporations perform rather poorly due to not having faced these new digital challenges and due to their low commitment to the digitally shaped market. Hence, he highlights that those start-ups are doing much better in terms of competitiveness in the global market. (Zillmann, 2019) Accordingly, he states also that only 44% of the firms he has involved and evaluated in his research integrated automation technologies into their business to be used for their customer-related operations. (Zillmann, 2019) This is actually showing both: that automation is seen as a productive tool to make use of but also that it is not fully established yet. However, Zillmann still highlights the importance of automation tools by saying that customers do evaluate the services of a company by drawing back to the quality as well as the speed processes are getting done in. Hence, due to automation is having implications on the quality as well as the time, and is somehow boosting these, automation is said to be an essential element when it comes to customer experience. (Zillmann, 2019)

In that context, he also says that automation also includes artificial intelligence and data analytics, which need to be used efficiently without boring the customer. Only by doing it in that way, he states, firms will be able to extract the major potential of the automation processes and therefore strengthen their position through the customers experience being positively boosted accordingly. (Zillmann, 2019) He concludes by saying that 75% of the sample he has considered in his research is planning to invest more into the automation of customer related processes, due to knowing that the reflection of operations on the customers are having immense value and implications on the position and strength of the particular company in terms of competition. (Zillmann, 2019)

Back in time controversies started, that machines and those kind of automation technologies are going to replace human labour. Even in 1982, "IG Metall published a study on technological mass joblessness which carried the speaking

title Maschinen wollen sie – uns Menschen nicht”, meaning that machines are preferred rather than humans. (Schröter, 2019, p.4) This, considerably “[...] destroyed the more or less positive attitude [people and firms] had so far towards new technologies.” (Schröter, 2019, p.4) Accordingly to a research conducted by Gründerszene, employees who are not familiar with these up-to-date technologies, are mostly not fully involved into the applications and are in some cases also afraid of not being able to use these tools effectively. (Gründerszene, 2018)

However, researches state that it will not be possible to stop the pace of automation, and that it will be established definitively in the course of time. At those times even, researcher predicted that latest by 2000 the technologies will be implemented and most of the employees will adapt to it. (Schröter, 2019) Even if researchers present the fear of employees against automation as a replacement there needs to be considered as well, how through the increasing and stronger getting establishment of IT technologies also many “[...] jobs [are] created in the computer industry itself”. (Schröter, 2019, p.5) This is also stated by another article, saying that with the expanding establishment of those technologies, there need to be more responsible professionals who look after it to ensure that everything is working. (Frisch, 2018) Therefore, the dilemma somehow includes a balance in it. There are also researches, stating that even if automation is a very popular tool for nowadays business and could replace some operations employees would usually have done, human labour will still remain a fundamental part in companies, especially in fields such as production etc. (Fraunhofer-Institut, 2018) This is also supported by Singh, who is concluding his research with the statement, being that “automation will only create more employment, through more demand for higher skilled jobs [...]”, which at the end as he states is more advantageous for the overall economy than the circumstances before. (Singh, 2017) However, there are also researches stating that cutting jobs due to digitalization is not stoppable, whereas automation could be an option to reduce unemployment, due to new market gaps being opened with the immense need of innovative and new technologies. (Amlinger et al., 2017)

3. Research Approach

3.1. Research Method

The study is based on a qualitative data collection method because it is more appropriate in the context of this topic. To be able to conclude the research, it is

more important to clarify questions on how the digitalization affects the firms in nowadays business environment and how it drives them to change or at least to adapt to it. Also, it is important to look at how they are going to end up in a surplus at the end by adapting or changing.

In this context it is more important to focus on the opinions and experiences in order to clearly understand the underlying reasons, triggers, effects, and all aspects concerning the topic. Through these inputs, the qualitative method helps in developing a pattern out of the experiences and effects regarding this field, following researchers can work on further.

3.2. Research Procedure

The procedure includes a mixture of a deductive and inductive approach, but will mainly follow a deductive approach, which is starting with the hypotheses, moving on with analyzing already conducted and current data and ending with testing these hypotheses based on the data being extracted. However, after having tested the hypotheses an element of the inductive approach will be used by coming up with a slightly different conclusion that is updated with current observations on the topic, in order to present a contemporary view on the issue. The hypotheses used in that context are limiting the scope of the study, because the field of digitalization would be too broad in that frame.

3.3. Research Tools

Accordingly to the qualitative data collection method, tools such as secondary data analysis, case studies and interviews are applied. Due to the topic being very current, there is already lots of research conducted and also lots of firms having acted accordingly, wherefore there are lots of scenarios showing the reality, which are presented in the study as well. The tools help in gaining better understanding and in getting a practical view on the field of digitalization. However, disadvantages such as the credibility and reliability as well as bias will maintain due to limitations, which occur in almost all cases.

4. Data Collection and Data Analysis

4.1. Data Collection Procedure

The key words that were mainly used during the searches were power of digitalization, digital transformation, digitalization, tools of digitalization,

automation processes, digital business, digital competitiveness as well as power of automation. Those key words helped in finding the most relevant studies and sources concerning the topic and the covering the research aim.

The data considered in the research was generally collected from ResearchGate and Google Scholar. Besides general Google searches were also crucial in that context. Additionally, the interviews that have been conducted were considered as well. Studies and articles from Harvard Business Review and McKinsey were also part of the data.

When having found studies that already have been conducted in that field, I firstly looked at the abstract to get a broad insight on what the paper is going to elaborate on. Afterward, key topics and the concluding findings were selected, read and carefully analyzed further on.

In order to analyze these key aspects, I have used the content analysis technique which fit the most into the framework of my research. It rather helped to conduct a descriptive and interpretive analysis by identifying an overall scheme in the collected data. Hypotheses testing was a complementary data analysis technique in that context, which helped in elaborating further on the assumptions stated in the beginning.

The sampling technique considered here is convenience sampling because all the data was collected due to their accessibility being easier and faster to reach. The limitations concerning the techniques will be covered in the end.

4.2. Data Analysis

4.2.1. Case analysis

Amazon is an online retailer, founded back in July 1994 by Jeff Bezos – who still is the CEO. The online retailer started as a book seller and is now a world leading provider of a diverse and huge variety of goods and digital services, such as their electronic books. (Rouse, 2014) An important milestone in their path was when they also invited third-party sellers to offer their products on the platform. Hence, “adding third-party sellers transformed Amazon from an online retailer to an online platform, which required Amazon to develop new capabilities [...]” (Gupta, 2018) So came, that Amazon got not only into competition with the usual retailers like Wal-Mart those times but also with online retail provider such as eBay. Having already caught a trend by acting as a digital retailer, which offers various products, Amazon continued making use of further opportunities over time. It started when

music streaming applications got popular, wherefore Amazon launched, parallel to Apple – many applications enabling them to serve in this segment as well. They have entered the segment with their application called Unbox, which later was renamed to Amazon Instant Video. (Gupta, 2018) Now, Amazon fills these segments with Amazon Music as well as Amazon Prime Video. Whereas Amazon Music opens an apparent competition with all other music streaming applications like Deezer, Spotify, Apple Music – Amazon Prime Video acts in competition to Netflix, Maxdome etc.

Amazon did not stop and developed further by coming up with the Kindle tablet, a device acting as a digital book and continued competing with Apple further on in that context.

Generally, “Amazon expanded its scope around its customers” and tried to always improve and reach new customer segments by making use of all these current innovations. (Gupta, 2018) Going along the digital path dominating in the course of time helped Amazon in that sense.

Besides their various offerings, they provide for their customers, Amazon is also well known for being very customer-centric. A significant tool, which enables them being like that is their use of automation. Amazon mainly uses automation in its marketing and sales processes. (Ray, 2013) Their automation strategy gets mainly visible in their product surveys and the way they create their customer surface. (Ray, 2013) In the product surveys, Amazon gets back to its customers after the product is delivered and used for a while in order to ask for ratings and feedbacks – which they are going to use in terms of improvements in future operations. (Ray, 2013) In terms of the customer surface, Amazon makes use of its extensive data analytics tools and filters the most valuable data out of it by analyzing buying histories and previous purchases in order to create patterns of what the customer could purchase next and to suggest it accordingly. (Ray, 2013)

These are only a few examples of how Amazon has established a system that is “automatically [segmenting the] customer lists [so that they] have real time information on what [the] customers have bought [and want exactly].” (Ray, 2013) Due to being more customized in that context and acting customer-centric, Amazon supports its customers “[...] in their buying decision, but will also help them buy more [...].” (Ray, 2013)

Pitney Bowes is a global technology company founded back in 1920 by Arthur Pitney and Walter Bowes. The company is headquartered in the United States and

mainly known for its postage meters, products for customer information management, business intelligence, etc. The business covers many segments today. When digitalization boomed the entire business world, Pitney Bowes needed to come up with a solution, so that their business can survive the immense challenge of digitalization. Since digitalization is also connected with a decrease in the need for papers, Pitney Bowes postage meters business got affected directly. Hence, they had to adapt to the current conditions in the market in order to survive and maintain their reputation they had during all the years they have operated in the market. So, they came up with their own commerce cloud and “[...] leveraged their experience in shipping to help other companies more efficiently ship, communicate, and pay.” (Newman, 2017) They also went a step further by realizing how popular shopping on digital platforms got and supported major firms such as eBay in their shipping coordination. (Newman, 2017) “They even created a completely new business unit [...]” for this. (Newman, 2017) After having taken the initiative and diving into the cloud business, Pitney Bowes “[became] one of the largest software companies in the world, with customers relying on it for everything from location intelligence to global e-commerce and customer information management solutions.” (McKinnon, 2017) This step “represents a huge shift and strategic milestone in the company’s evolution”. (Ray,n.d.) Aria Systems was one tool that helped Pitney Bowes in overcoming the digital transformation, so that they are able to compete further on the basis of current conditions that were and are still booming the business world. As the Vice President of Pitney Bowes, Joseph Schmitt stated in an interview: “[...] we are able to quickly respond to our customers’ needs in terms of product and service offerings at a speed that was once unthinkable with traditional technology.” (Ray,n.d.) Another digital aspect they got well-known for today is their location intelligence, firms such as Zillow and Twitter make use of in order to “[...] show the locations of their 1 billion+ social media users.” (Newman, 2017) Hence, Pitney Bowes is a good example of how firms can make use of the power of digitalization in order to advance themselves. They simply transformed from a rather traditional mailing company to a global technology company that covers many segments today. (Newman, 2017)

4.2.2. Secondary Data analysis

“Even in 2012, and under substantial controls, relevant impacts on both production efficiency and innovation performance could be detected.” (Kroll et al., 2018, p.22)

But it is much more than the term digitalization that contributes to it. Rather, specific technologies and tools, which are applied accordingly, do contribute to production efficiency and innovation performance. (Kroll et al., 2018) Researchers state that simple digital technologies are already established in previously embedded frameworks and have already shown positive effects in production efficiency. Though, “[...] the deployment of digital technologies remained incomplete or at least less than fully effective [...].” (Kroll et al., 2018, p. 22) But still, based on the analyses conducted by Kroll et al. and their hypotheses testing based on several indicators “[...] digitalization has a first robust impact of simple, straightforward measurements of productivity or innovative performance [...].” (Kroll et al., 2018, p. 22) However, firms also need to consider that the transition and implementation of such digital technologies does not necessarily need to be unproblematic or not connected with any additional costs. (Kroll et al., 2018) Quite the contrary, in those initial phases, firms may face some difficulties or at least declines in their incomes and revenues. Even Pitney Bowes faced in their initial phase of implementing digital technologies a decrease in the revenue from \$3.9 billion to \$3.6 billion within one period. (Ray, n.d.)

It is also stated that firms need to think about approaches on how to manage digitalization and come up with “a digital technology-focused procurement strategy [...]”, in order to manage the “increasing global competition, price volatility, and cost reduction pressures [...].” (Garg, n.d.) Garg further states that “there is no doubt, that the combination of new technologies from Big Data Analytics to Automation – is revolutionizing companies’ operational and administrative processes [and] thereby creating new revenue opportunities as well as streams for cost savings.” (Garg, n.d.) Hence, he concludes that in comparison to traditional approaches, digital solutions rather improve firms performances and open up new visions and opportunities. (Garg, n.d.) Ebenezer supports this as well by stating that “[these] can help deliver the necessary efficiencies and potentially achieve greater savings than a traditional efficiency drive.” (Ebenezer, 2018) As a report conducted by the World Economic Forum in 2016 states as well, “digital transformation provides [industries] with unparalleled opportunities for value creation.” Moreover, they state that the combinational effects of - [all technologies, digitalization comes with] - [...] are accelerating progress exponentially” and therefore help saving time and human capital capacities. Further, the report states that “digital technologies are creating new profit pools by transforming customer expectations and how

companies can address them.” Especially customer expectations need to be considered in that context, since these are part of the most crucial challenges when it comes to digitalization. By putting importance on these and operating accordingly, firms are going to be a step forward in terms of digitalization. As the report states as well, “these challenges need to be addressed by industry and government leaders to unlock the substantial benefit digital offers society and industry.” Ebenezer also explains how performances are actually boosted when making use of such technologies. He states, that when moving business operations on a more modernized technological base, “the organization achieves the efficiencies it wants by driving down management costs.” (Ebenezer, 2018) To the question, how this exactly opens up new opportunities and visions, he states that through this simplification of operations enabled by digital technologies, cost and time savings can be utilized elsewhere, the company may see future growth potential at or simply what needs more consideration within the business. (Ebenezer, 2018) Another aspect are the tools of digitalization that enable efficiency and productivity. Automation, big data or artificial intelligence are some of these tools. (Ebenezer, 2018) Through the valuable data, firms get from these tools, they “[...] can create transformational views of their customer, citizens or patients” (Ebenezer, 2018) But more than that, “[...] the insights from the data can provide greater value by enabling the organization to identify new opportunities for growth or further savings.” (Ebenezer, 2018)

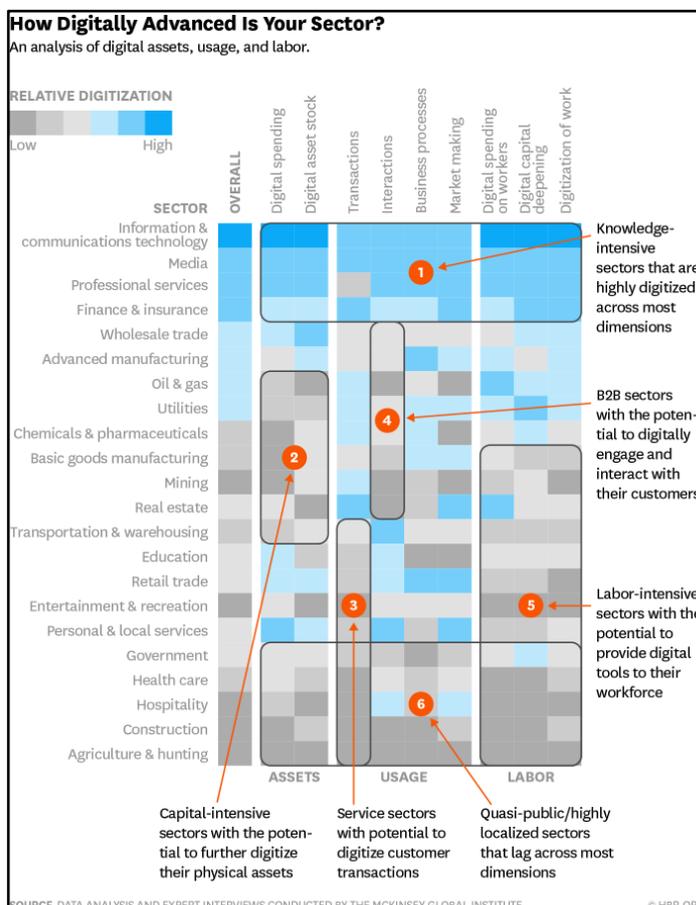
Besides those, there are specific indicators that are influencing the meaning of digitalization for some firms. These could be the company’s age, size, research-intensity and organizational structure as well – which also includes not only the employee structure but also the company culture. These aspects do affect questions such as “How important is digitalization for us as a firm?”, “How can digitalization help us and is necessary actually?”, “Does our size and structure allow to take actions towards digitalization?”. When thinking about major firms and their movements towards digitalization, these questions get reasonable. It is for example always more difficult to transform a large-scale enterprise which is already established for years and has a rather traditional structure. An example could be firms such as Kodak or the German company Quelle, which have not managed to survive after digitalization started leaving some crucial footprints in the global market. Rather, firms that have started on digital basis, being digital-natives, have started taking over their segments and until now are performing very well. The

importance of a firm's size on the implementation of digital tools or even on digital transformation was also thematised in a paper conducted by Liu Yang, who is stating that “[...], larger firms could increase productivity because of economies of scale, however, on the other hand, larger firms could also face more difficulties of management [...]” (Yang, 2018, p. 2) But as mentioned it is not only the size, also the age of a firm has implications on the digital transformation of a firm. Researches state as well, “[...] that older and more established firms are likely to have more developed routines and established processes [...]” (Carr et al., 2010, p. 184) The researcher move on by saying that older firms are mostly not able to react to current trends and conditions, such as digital technologies - very quickly. (Carr et al., 2018) Since being already established for a while, processes and structures being already embedded into the routine, it is way more difficult to rapidly change. Another aspect in terms of tackling digital transformation based on these indicators is the aspect of organizational structure, culture as well as the employee structure, which need careful consideration as well. “The world went digital, [...]. And this caused paradigm shifts in the way people perceived people-related processes, performance goals, training opportunities, workplace facilities, and organizational values.” (Raj, 2018) Hence, firms somehow need to shift accordingly and employee engagement needs to be there to its fullest. But the workforce does not necessarily want to be engaged and part of this process, because digitalization also creates fears in employees minds caused due to following assumptions; “In 2013, researchers at Oxford predicted almost half of all jobs [...] were likely to be ‘automated’.” (Mueller, 2018) Moreover, “in November 2017, McKinsey concluded that up to one-third of the constituent activities would be automated, implying substantial workplace transformations and changes for all workers.” (Mueller, 2018) Hence, employees may be afraid of that when it comes to contributing to the further development of digitalization. However, there are different perspectives on these kind of thoughts, also stating that through digitalization more jobs are created instead of jobs being cut due to the automation of operations. Even if this causes a problem among the employees, articles state that “leadership is the mothership of engagement – it is the responsibility of top management to formulate, articulate, and initiate their commitment to driving people-centric values.” (Raj, 2018) Hence, the argument that leaders need to take the responsibility of giving employees an understanding of digitalization, making them familiar with it and taking their fears gets supported in many articles. By doing that, businesses are going towards

fostering employee engagement and get a step further in terms of digitalization. But generally, this plays an important role because having the right workforce in that period is crucial in terms of overcoming digital transformation effectively. The most suitable team will lead to the best results a firm could gain from digitalization – when other aspects are fulfilled as well.

One also needs to think about which industries actually need it and whether every industry is affected by digitalization. Thinking logically, digitalization does not necessarily make sense in all businesses but it can be helpful in almost all industries. Hence, one cannot take digitalization so general, rather industries need to think about the specific tools digitalization stands for. Whereas automation and robotic-specified tools could have an immense impact on manufacturing it would not be that significantly important in trading or healthcare sectors. Hence, every sector needs to find their tool, that suits and from which they could get the most significant advantage. Some industries may be very research-intensive and some not. Hence, some would require rather data-giving tools with the purpose of getting as much information as possible

Figure 2: Digital Status of Industries



Source: Harvard Business Review. (2016) Retrieved from:

<https://hbr.org/2016/04/a-chart-that-shows-which-industries-are-the-most-digital-and-why>. Copyright by HBR.

Others, being not that research intensive would rather require tools that advance them in terms of force such as in building, working and constructing things. Generally, “digital transformation is creating an opportunity for innovation across all industries that is nothing short of a renaissance.” (Marsh, 2019)

4.2.3. Interview analysis

The first interview was done with the Marketing Director of Berlin International University of Applied Sciences, Ferat Kocak. The interview touched upon aspects such as digitalization in general, automation as well as the relevance of these in terms of future operations but also the effect of those on employees. Berlin International uses automation in its Student Affairs and Marketing departments. The most crucial field where it is applied, is the application system, where each student who applies to the university is in a specific status. When documents are uploaded or the person is accepted and therefore moved a step forwards, the system sends out the according mail automatically. In this mail, all further proceedings are stated, so the employee does not need to take care of sending out mails anymore. The marketing department also works with the automation of mails when it comes to student recruitment. There are several landing pages with contact forms underneath, from where potential or interested students can contact the university. They are getting automatic emails with the most relevant information through the system SendinBlue. What is going to be implemented and also as a digital tool, is the CRM system the university is still working on and think they are dating back in this respect. Though, in comparison to other universities of applied sciences, Ferat says that he thinks they are in a good position. But also in comparison to the state-owned universities, he thinks Berlin International has an advantage. He reasons his view by stating that it is easier to transform and shift smaller companies rather than transforming huge and older institutions or at least shifting them towards digitalization. Smaller firms and institutions are less bound by something, different than major institutions. He illustrated his view by saying it is way more difficult to shift a huge ship than a small ship. When asking him what he thinks whether automation is a danger for employees, he said that it depends on the conditions but

generally automation does not eliminate jobs, rather it also creates more jobs and help employees to use their human capital elsewhere, where it is more important. He also said that these kind of digital tools are rather an optimization of processes instead of a replacement of human capital. Hence, he thinks very positively about digitalization since it optimizes processes, helps firms in reaching new markets and eliminates borders. Moreover, he states that it is important to consider this during operations, since he also distinguishes between online and offline marketing activities – which are even more emphasized by digitalization. Additionally, he said that it is important to react to digitalization based on the research-intensity of a business. Hence, he said that a kebab shop would not need to go through a digital transformation. But he also gave the example of Quelle and Otto. Otto still has managed to shift, but Quelle did not managed the shift from traditional to digital. So Amazon came into play as a digital-native firm taking the place of those traditional retailers. So, he also made clear the distinction between those firms one having started traditional and the other having started digital. Comparing them is rather difficult in his opinion. But of course, he thinks that those firms that do not shift will probably fail in the course of time. But he did not only touched upon the research-intensity digitalization depends on but also the target group. Depending on the target group, a digital presence could be important for firms and advance them in their operations and external presentation.

The second was done with one of the CEO's of Uhura Creative Media, Philipp Paul. Uhura is a digital media agency. He states quite in the beginning, that it is crucial to get digital in order to survive in the highly digitalized market. Though, there are also products that do not necessarily need to be present digitally, but in general it is not realistic to keep in advantage without facing digitalization in his opinion. He reasons his point by saying that firms will face a decrease in their productivity when not using digital tools to accelerate processes. Hence, they will loose their advantage in comparison to other firms, that are making use of it and working more efficiently. Additionally, he states that digitalization is an ongoing process and will not stop for now. Rather, it is going to develop further in the course of time. He supports the positive effects of automation by giving an example of their own firm. They are also making use of automation not only internally but also externally and create unique selling points by doing that. He said, that in that sense they offer something not every firm offers and therefore boost their position in the market. Moreover, they offer the technical tools that cover not only digitalization in general

but also automation specifically. By offering that and showing a clear understanding of the systems, they gain a competitive advantage, which in his opinion also got remarkable in their performance in comparison to their competitors. But when making use of not only automation but digital tools in general, he said that firms need to know what they are automating and digitizing, so that the efficiency and performance rises and they touching upon the right motivation. Uhura themselves make use of several digital tools which in Philipp's opinion boost their productivity. These tools cover many different aspects such as controlling, project management but also marketing. The advantage of these tools is that they interfere at some point and therefore exactly help to advantage the efficiency and to get more productive among several divisions.

The third interview, which was done with the Marketing Director of aifora, a firm offering big data platforms with the purpose bring together brands and retailers. Moreover, they offer customer-centric merchandising systems and algorithms. firm, was also mainly supporting the aspect that firms need to adapt to current conditions and highlights the importance with the fact, that firms need to always act accordingly to the current circumstances may it be political or financial conditions. Therefore firms should invest into new technologies, start to train the employees in order to ensure secure proceedings. She also was supporting the aspect, that firms that do not adapt to digitalization are going to fail in the future. To the question, whether automation is concerned with the problem of lowering the need of human capital, she said that they personally are not going to replace the employees but rather are going to automatize simple tasks and provide the their teams more time to focus on more innovative tasks connected with more strategy-thinking, empathy and so on. Hence, she concludes that digitalization at all rather forms an increase in the need for human capital, since technologies always need to be developed further. Moreover, she adds that the conditions rather contribute to a rearrangement of jobs, wherefore the main focus of the job market may change. Furthermore, she states that the industry of firms also play a role in terms of adapting to digitalization. Industries, which are more innovation-intensive are less likely to be digitalized whereas industries that are mainly concerned with routine, repetitive and manual tasks digital tools may be more important. The interview is concluded by the statement that automation is a main tool they make use of across lots of divisions and see lots of success through. Hence, she states that automation

does help them in working more efficiently, broaden their focus and therefore help them to expand in order to gain a competitive advantage.

5. Discussion and Conclusion

5.1. Discussion of Results

The cases show that both firms have successfully managed the shift from rather traditional to digital. Hence, these both cases are good examples, illustrating the advantages of digitalization and how firms can actually make use of them. Both have shown, that it does not matter when a firm is established and operating for years and also huge in size. Rather, both examples present how digitalization lowers the borders and enables firms to enter into new segments very easily without facing strong entry barriers. In that context, especially Amazon did not only started serving in many segments, but also presented a significant step in the global economy indicating that “the rapid development of technology is making data and software integral to almost all businesses, which is blurring industry barriers faster than ever before.” (Gupta, 2018) Even if both firms started with very traditional business models, such as selling books and offering postage meters – they have managed to understand what digitalization is about and what kind of potential is in it for them. Hence, these examples are not only showing how beneficial it actually can be for businesses to face digitalization, but they are also showing that it is not impossible to adapt to the current trends even if the firm is huge and has started with a rather traditional business model.

Hence, referring to both hypotheses, there is a positive relation stating that not only automation but the movement of firms towards digitalization in general show a positive impact on not only competitive advantage but also the performance at all. Although, these practical cases show that digitalization and tools such as automation stay in positive relation to the performance of a firm and its competitive advantage, further research shows that there are some key factors, the success or failure of a firm, that wants to digitalize – depend on. These factors may be the age and size of a firm, the industry it operates in, the employee’s commitment towards digitalization as well the general structure of a firm, which also goes hand in hand with the age and size. This view gets also clear when looking on nowadays market structure, where many old large-scale enterprises are getting replaced with rather newer digital firms, because they have failed to digitalize. Sometimes, as mentioned

previously as well, formulated strategies or taken procedures may be the main factor for the failure. Revising again the number of firms that fail to digitalize, makes clear that it is actually concerned with more. But also a firms view on digitalization could be a factor for failure, when they may think they are not going to be able to digitalize due to their structure or that it is not that essential. Hence, already conducted researches and many cases show that perceptions on the success or failure differ. However, these aspects do not change the fact that firms operating in a knowledge-intensive and research-intensive industry need to face digitalization by adapting to the most current trends in order to survive not only in terms of competitiveness but rather to still be alive in the market. Amazon and Pitney Bowes are really good examples in that sense. The interviews support this as well and state that digitalization brought lots of advantages firms can benefit from in order to push themselves. Hence, firms should utilize these potentials and make the best out of these without getting much negatively influenced by previously mentioned factors. Furthermore, research clearly supports that automation enables firms lots of benefits that in turn advance their innovation, performance, operations at all as well as their revenues. Part of those benefits are aspects such as cutting costs, accelerating processes, working goal oriented and more effectively. Though, the interviews address also the aspect that firms should react to digitalization depending on the industry they are operating in, because as research has shown as well, the need for a firm to digitalize depends on the industry and its research-intensity. Depending on that not only the need for digitalization but also the respective usage of tools gets clear. A rather problematic aspect concerning a firms digitalization is the fear being about the power of digitalization enabling the replacement of human capital. Generally the views on that differ. However, based on the findings the fear is reasonable. Though, based on the involved studies and interviews, the emergence of automation and other digital tools will not replace human capital. Researches state that tasks are going to be automated as also shown through a study conducted by McKinsey, but this will only change the employees routines and the processes of how operations are getting done instead of cutting jobs. As Ferat also stated in the interview, digitalization and its tools rather act as a complementary than replacing human capita. Other researches also state that digitalization is going to create more jobs, since the technology sector will get advanced and the demand for more and more developed technologies will rise. So human capital will be needed there also.

5.2 Revisiting Research Objectives and Research Hypotheses

Based on the research being conducted in the literature review as well as in the data analysis and the interviews being conducted, digitalization has a positive impact on a firm's productivity, because it helps advancing processes which lead to many positive aspects such as a boosted innovation performance, the decreasing costs, but also the discharge of human capital capacities in routine tasks. All these aspects can be used elsewhere across the operations where it is much more effective. Furthermore, digitalization is concerned with many different advantages, such as for example the entry barriers being lowered, which again supports businesses in their operations and help them to expand their scope. Though, when making this statement, it is also important to consider aspects such as the age, size, and structure of a company. It is also important to consider the industry it operates in. Because these aspects do influence the way a firm goes towards digitalization and the respective outcomes. So based on these, the effect may differ as described in the previous parts. But generally and based on the findings, digitalization positively affect a firm's performance.

Referring to the second research hypotheses, automation enables firms to have a competitive advantage, but it is sometimes a rather few steps taking progress than a direct one. As understood from the interviews, automation can in some cases lead to a competitive advantage directly as being the case for Uhura. They differentiate themselves in the market and mark themselves off by making use of automation within their operations. In general terms, it also attracts the customer and acts sometimes as a main reason for choosing the agency. The rather long-term effect is when automated softwares help firms in working more efficiently, fast, faultless and optimally adjusted to the current market conditions and set goals. Hence, through these advantages, firms can focus on more crucial aspects of their business that are more likely to advance their competitiveness – rather than routine tasks may do. Automation also contributes to the cut of costs – so the saved capital can be used in further differentiation based projects, which again advance the competitiveness in the highly digitalized market. As the previously conducted researches, cases and interviews present, automation helps firms in making use of the by digitalization given opportunities without bothering with routine tasks. Hence it enables a more focused way of working, which is key in terms of meeting goals.

5.3 Conclusion

To conclude and answer the research question, there are many key aspects digitalization is concerned with positively as well as negatively. But generally and based on the findings of this study, digitalization and its tools are contributing to many significant advancements for a firm. Even though, it also acts as a challenge for traditional firms, it creates immense opportunities businesses can make use of by facing it and integrating digital tools into their business operations. By these benefits, firms can not only boost their performances but carry their business to different dimensions, enter new markets easily and therefore expand their scope and capabilities as well. All in all, when having a fundamental strategy and motivations, digitalization can mean a lot for firms and their future path.

5.4 Theoretical and Practical Implications

As practical implications it can be said, that businesses, no matter whether they are old or new, large-scale or small-scale, traditional or up-to-date – need to face digitalization. Only digitizing – as almost all businesses have in terms of their operations, will not be enough in the course of time, when digital technologies are getting unfolded and integrated into business operations more and more. Again, the fact that digitalization does impact firms in nowadays business environment gets highlighted, wherefore based on all the results, firms need to make use of in order to maintain their market position or get even better as well as to boost their productivity. By that, they are going to get effective outcomes and advance their awaited outcomes respectively. Hence, the results mainly appeal to the management of firms, which need to initiate the process of digitalization or even digital transformation, make it familiar to the employees, so that problems and fears – which are relevant, can be prevented. Moreover, it would also be important to offer training opportunities for employees, so that they are getting prepared well for the shift and their fears are taken. Considering those aspects among many others, that are examined in the study, will form a stable ground for a shift or at least an adaption. Hence, the research shows what needs to be considered when thinking about the digitalization of a business. However, when coming also back to the current state of research and looking at the theoretical implications, the study strengthens the positive effect of digitalization and its respective digital technologies, as the literature does. However, it opens a view that includes key factors, the effect of digitalization is depending on. Therefore, on theoretical basis,

outcomes out of the digitalization of a firm and the respective procedure of digitalizing a firm need to be elaborated. Generally, the study acknowledges the theories of how a shift in the business accordingly to current market conditions – in that case the flow of digitalization, can be supportive in terms of productivity and therefore in gaining competitive advantage. Though, approaches on digitalization, digital transformation and respective procedures as well as outcomes need to be analyzed further.

5.5 Limitations and Future Suggestions

Hence, the above mentioned aspect could be considered in terms of future research. It is important to present also the view of rather traditional keeping businesses in order to understand also the quota of failing industries but also in order to elaborate further on their less-involved nature towards digitalization. This could help in terms of decreasing the quota of failing firms and provide a framework or an approach presenting a nearly optimal way of how digitalization or also digital transformation could be carried out according to the size, age and industry of a firm. Here, a distinction between the ways of digitalization, such as digitization, digitalization and digital transformation need to be considered as well. Moreover, future researcher could in that context complement their studies with insights from digital consultants in order to form an approach on strategy-making when it comes to the digitalization of a firm.

Since current literature is missing a broad view on digitalization and is very limited in that context, future researcher could present a rather general view without considering any specific industry the whole study is based on. Rather they could give examples of many cases and base their study respectively to end at the point on how to use digital technologies for one's own benefit in the market and utilize its resources best. But generally, future research needs to focus on the key aspects of a firm to present a rather effective approach on the digitalization of firms and its effectiveness accordingly.

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7 Appendix

Interview #1

Philipp Paul – CEO

Uhura Creative Media

D: What is digitalization?

P: It is actually hard to describe what digitalization exactly is. It is no more an extra topic, rather it acts as a part of our daily business life's. And that is in my opinion the problem.. People think that digitalization is an extra aspect, even though it is a solid component of all activities and operations. But generally it means that entire processes and tasks are recorded throughout digital channels, so it means that almost all operations are somehow getting replaced, supported or getting more effective through digital products.

D: Where does the digitalization start and when does it end? So when does a firm start to be digital and when can you say okay, the firm is completely digital now?

P: Hm, completely digital would mean that I do not need any human capital anymore. (Laugh) Where does it start? Actually, it starts when I as a firm start being available on digital channels, communicate through digital channels and when I start to make services I offer available digitally. The question, where it ends is actually hard to answer, because especially in the B2B business the personal contact you would need in the last steps is important to have and therefore cannot be digitalized. But this is in that sense very academic and a philosophic question.

D: Saying that digitalization is not covering the personal aspect in your previous answer, what do you think are disadvantages and risks concerning digitalization – but what are advantages as well?

P: Advantages are definitively that lots of processes are getting easier through the use of automation tools, which are presented by digitalization. What was the other question?

D: What risks and disadvantages are.

P: Disadvantages could be maybe that firms do rely too much on the data given by these digital tools, because capturing information and data very quickly. And also that, firms rather rely on given information and data than on their core competencies. But also when digitalization is used as an all-round solution for all problems.

D: How important is it for a firm to adapt to digitalization?

P: Actually it is of vital importance. (Laugh) Because everyone who is not digitalized is not going to be realized in the market. Nowadays each customer pick their smartphones to start searching for things throughout digital channels. And here it is also important to look at which industry a firm is operating in. the importance of the presence on digital channels or the use digital technologies varies accordingly to the products and services a firm offers. Here we can think about an ice-cream shop, which cannot sell the ice digitally, but can make it visible on digital channels to provide a shops opening hours, contacts, ingredients of the ice cream and so on.

D: Here, we come also to the question about how the industry plays a role in terms of the digitalization of a firm.

P: Actually the control and efficient way of getting things done should be the case in each industry and respectively in each firm. So firms should back up the simple tasks with digital tools in almost each industry, because in every case if they are not doing this they will have a lack of productivity among other competitors. And what is obvious is that firms, which do not adapt to digitalization are having problems in nowadays business. Especially when you look at the actions by Tesla and Uber – which are originally industrial products and services which now getting replaced or supported by disruptive technologies and approaches. Actually it depends also on the customers' expectations, firms need to meet in each industry.

D: What does it mean to adapt to digitalization and how do you measure a firms digital maturity?

P: For now, I think that digitalization will not stop in the near future, because it is not a kind of ending process. Rather technologies are going to be developed further and firms cannot fully say now we are completely digital because technologies will change but also the way how digitalization is used will change. So more important is to define a benchmark to know how to proceed. Some firms definitively have problems because they do not formulate any strategies, do not know where to start and where to end actually.

D: How does the use of digital technologies affect the effectivity and productivity of a firm?

P: It is always a matter of what a firm wants to reach through the use of digital technologies. When we work with automated reports or data being available through digital tools such as automation and artificial intelligence, necessarily not all do work with, it gets more important to create such USP's in that sense.

D: How do firms adapting to digitalization have a competitive advantage?

P: They are more likely to be realized. So firms can look at what is missing in their business they could complement through digital tools and therefore use it in a way that it advances them in their competitiveness. When thinking about search engines, how people start using things. Let's take the example of how we could attract the customer. Here we could make use of the data given by digital tools as automation for example in order to select and filter the words being used in search engines when looking up things. So knowing which words and phrases are mostly used and integrating them into the own channels, will make it much easier to be find by the customer. In our case for example, that we use such automation tools in our technological part provides us a competitive advantage among our competitors. So it is also about to offer services and products that are not offered by everyone, being embraced and easier to be captured through the tools of digitalization.

D: As you talked about automation, how do you think does it support businesses in their efficiency?

P: Automation does definitively make processes easier, but you also need to know what you are going to automate actually. You can create a resource efficiency, use project management tools which are also based on automation technologies.

D: And what could be disadvantages of such automation tools?

P: Firms need to be sure to individualize the data they get out of their automation technologies so that they suit to the expectations of the customers as well. The direct

contact should maintain here, and could be effected negatively when not making use of the tool in a good way.

D: And what's about the fear some people may have, that automation or digitalization in general is going to decrease the need for human capital. What do you think about that?

P: It rather will contribute to a rearrangement of job profiles rather than replacing jobs. The interest will lay in another area.

D: What about a firm, which does not want to adapt to digitalization and rather keep traditional?

P: They will lose. But depending on the industry, some firms may rather survive but the demand for digital technologies will rise in almost all industries and firms will need to react to that in order to survive.

D: And from which tools do you generate the most success? What helps your firm in terms of boosting productivity?

P: We work with many different programs that are used to be digital tools. But mainly cloud-based programs and technologies are important for us and enable us working efficiently together without losing time and resources. So we prevent content-based problems in that sense. But there are many other tools that help us in terms of controlling, finances, project management, time management and so on. Slack, Asana, Harvest App are some of these. And with all these technologies we are able to create an interface, which enables us switching from one point to another without big efforts. So a kind of ecosystem is created and helps us a lot in our operations. I think that the programs are one point that boost our productivity, but important is also that we know how to use the data and information being captured and also to understand the technologies and features given by digital tools. And we can do this and also support our competitive advantage in that sense.

D: Okay thank you for your time.

P: You're welcome.

Interview #2

Ferat Kocak – Marketing Director

Berlin International University of Applied Sciences

D: Do you use automation technologies during your business operations?

F: Yes, we use very simple technologies, which are not very advanced but still do help us in our tasks. David, from our Student Affairs Team is using mail applications, where he integrates his replies, which he can easily select accordingly to the mail he gets from interested people and students. It is not directly considered as automation, but still can be seen as a step away from operating manually. This is the first step going towards digitalization. More important is that we have integrated automation in our application portal. When we change the status of the applicants, they are getting automatic mails with regards to their current status and what they need to do. So we do not write them personally anymore. The system is doing it for us. What we do not have for now and what is going to be our next step is the automatic response to anyone contacting us. So a CRM system. Even though, we are operating since 5 years, we do not have a CRM system, so we need to work on

that. But our management needs to involve everyone and make them familiar with the system to ensure that it is used consistently.

D: So do you think the university is lagging behind or still running good in comparison to competitors?

F: In comparison to other industries we are definitively lagging behind, but considering other private universities and generally universities in Germany we are on a good way and good in time. What is important here is also that we are a rather small university, which makes it easier for us to adapt to these situations. At Allianz we always said that major firms cannot react easily to current conditions. You need to imagine a huge ship, it is more difficult for them to rotate, whereas small ships can rotate themselves very easily. But generally small universities will always be able to react fast to those conditions than a FU or TU.

D: Do you think that through automation human capital is getting less important or do you think it will be quite the opposite?

F: I think in this university it does not play a role. But generally, I also think that automation rather acts as an optimization rather than an replacement of human capital. It drives changes in routines and helps employees to focus on more relevant things.

D: And a very general question, what do you think is digitalization?

F: It is very broad. For me digitalization is when you look at a company that it is present in the digital world. For me it begins at that point, when a brand, name or company is available in the online world. There is a separation I also make use of during my strategy and campaign planning. I separate actions based on online and offline marketing and think that this is a very important component when also thinking about digitalization, because these two fields are working differently.

D: So what do you think is positive about digitalization and what may be disadvantages?

F: Advantages are that processes can be optimized, advantages are that new markets can be reached easily, advantages are that borders are eliminated. Disadvantages could really be that in a few cases, employees could be replaced – but this is only the case in very manual tasks and does not significantly impact the previous question. But we need to think about how to catch these people, since we cannot stop digitalization but we need to see how working processes can be created and how human capital can be saved and used more efficiently so that the job market is remaining. But we also think about tax policies and how to regulate taxes for machines, because employees are paying taxes for the work they are getting done and how should these be done with machines? This needs to be handled by the government and we as Berlin are lagging back with regard to that.

D: As you know there are still some firms, which do not adapt to digitalization. Do you think they still will survive or not?

F: Don't forget to judge relating to the firms, because a kebab shop is also a company.

D: I know, I rather mean firms, which could benefit from digitalization but still are not doing anything for it.

F: Okay, and why should these firms not make use of these benefits.. If they don't make use of it they will fail for sure. But it does not make sense to not use something, which at the end will benefit your operations.

D: Of course it does not make sense, but there were firms which were replaced because they haven't used digital tools for their benefits.

F: I give you an example, Quelle for example. Amazon has replaced Quelle and Otto somehow, even though Otto is still operating. However, Amazon managed to weaken their business with its model. But this is what I've meant. Quelle and Otto had to manage the shift from traditional to digital. Amazon was digital from the beginning. We see the same thing in the banking sector. New firms try to shift the banking sector to a rather digital scale.

D: N26 for example.

F: Exactly, the problem is that when bringing it to a completely digital scale you will lose human capital due to closing down offices and making everything digital. But you need to integrate these people elsewhere, conduct trainings, and ensure safety for employees. But of course to refer to the question, firms that do not adapt will lose their market position.

D: To what extent does the industry play a role in terms of digitalizing a firm? We talked now about the kebab shop for example, when we look at some examples like Hakiki, who has opened their new kebab shop in Charlottenburg and made use of digital tools and digital channels to present themselves and advertise their opening. What do you think?

F: It is not necessary in all areas. In that case, a kebab shop does not necessarily needs to go through a digital transformation.

D: And what's about digital presence?

F: It is also not needed always, it really depends on the target. When looking at Mustafa's Gemüse Kebap or Zaddy, who went back to these digital presence approaches. It of course creates another dimension of relation to the customers.

D: That's it, thank you for your time.

F: You're welcome, let me know if you have any other questions.

Interview #3

Jessica Smith – Marketing Director

Aifora

D: How does the adaptation to digitalization and the use of digital technologies affect the productivity of a firm?

J: We think that it is a must to adapt to digitalization. As firms would have to react to political or any other conditions and invest accordingly in order to be on track. Investments could be done in employee trainings respective technologies so that the firm is on a good way and has the right foundations to go towards digitalization. Important is also to have the to make changes, because if not they will probably fail in the future.

D: I have done some research and saw that you offer different softwares and one does support the automation of price setting. How do these kind of automation softwares decrease the need in human capital?

J: Of course, this is a fear we are also getting confronted with. But we are not saying that we want to replace human capital, rather we want to automate these manual tasks, in order to ensure that employees can work more efficiently and concentrate on many other aspects, a machine could not do. Things like, being innovative, creative, forming strategies, working with customer, showing empathy. These are things no machine cannot do. Generally the working routines will only look different, the roles and tasks will change as well as the skills needed. But we are not going to replace the human capital. Employees will rather need to go through some trainings to be ready for it.

D: So, do you think automation has rather a supporting effect?

J: Yes, I do not think that will have a unsupportive effect, rather it forms a rearrangement of jobs. But there will always be jobs, which are getting done by humans.

D: What do you think, how do firms adapt to digitalization will have a competitive advantage?

J: A definitive competitive advantage is really given through digitalization and especially automation. We also make use of many tools, especially in terms of automation that support our efficiency throughout all dimensions. So we try to initiate digital technologies in almost all segments in the business in order to support the processes and boost our competitiveness.

D: Last question would be following, there are for sure firms that are less attractive to digitalization and some being more attractive to it. What do you think about that?

J: Hmm. I think industries which are concerned with many manual tasks and routines that are repeating themselves, digitalization will play an important role in. But in other industries, where it is more important to show empathy, having the contact with customers and so on, it will take a bit until digitalization is fully established. But, there also needs to be said that it is continuously developing and so many technologies, which are adaptable to almost all areas nowadays.

D: Okay, that's it thank you for your time.

J: Oh okay, you're welcome.

Declaration page

How does the digital era impact businesses and drive change among firms?

By

Damla Keles

Submitted in partial fulfillment of the requirements for the degree of
**Bachelor of Arts in Business Administration |
International Management & Marketing**

At Berlin International University of Applied Sciences

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