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The Impact of Digitalization on the Business Model of German Retail Banks

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Abstract

In recent years, digitalization influenced various industries, including retail banks. It can be observed that retail banks face new challenges such as changing customer demands and expectations. At the same time, the industry is disrupted by new competitors, such as Financial Technology companies and large technology enterprises. The ongoing low-interest environment risks the profitability of banks. These drastic changes make it interesting to examine in detail how digitalization influences the business model of retail banks in the German market.

A multiple case study was conducted to gain empirical data. The aim of the case study was to receive information on digitalization about German retail banks. The sample was chosen to represent a cross section of the German three pillar banking system. All interviewees are well acquainted with digitalization and strategy. In order to analyze the empirical findings Osterwalder's Business Model Canvas was used.

The findings derived from the case study indicate that banks certainly need to adjust their business model to cope with the challenges of digitalization. Digitalization influences all elements of the business model of retail banks. The dimensions affected the most are customer interface and internal processes. Retail banks have to approach those two aspects in order to keep up with the previously mentioned disruptive forces. Although the focus may be on those two aspects, retail banks ultimately should change holistically and take all levels of the organization into consideration when adapting their business model. Banks need to develop towards being a technical enterprise.

Title: The Impact of Digitalization on the Business Model of German Retail Banks

Keywords: Business Model, Business Model Framework, Digitalization, Retail Banking, Strategy, Digital Transformation

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List of Abbreviations

BMC	=	Business Model Canvas
Gafa	=	Google, apple, facebook, amazon
FinTechs	=	Financial Technology companies
RBV	=	Resource Based View

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1. Introduction

“Most banks use business and information systems that are dinosaurs. Like many companies, these banks risk eventual extinction if they do not keep pace with competitors who take better advantage of emerging opportunities afforded by information technology”

- Bill Gates, 1996

Bill Gates predicted drastic changes in the banking industry as early as 1996 and warned the banking industry more than 20 years ago about the upcoming drastic changes triggered by new competitors that make better use of new IT solutions. Now, two decades after the warning, banks are in the process of becoming more digital. This study examines the impacts of digitalization on the business models of retail banks. Due to the evolving competitive landscape in the banking industry, rapid technological advancements, and changing customer expectations, there is a need to analyze the impact of digitalization in retail banks. The study will be conducted at German retail banks.

1.1. Research Purpose

Banks are facing enormous competitive pressure and the need for the development of digital opportunities is urgent to ensure future success. The authors therefore aim to answer the following research question:

How does digitalization influence the business model of retail banks?

The question stated above is noteworthy to discuss for several reasons. Firstly, digitalization is an omnipresent influence nowadays, impacting many industries, including the banking sector (Lünendonk, 2015a). Therefore, it is less a question of if the retail banking is influenced by digitalization, but rather how it is impacted. The way business is conducted is challenged and needs to be adapted to changing circumstances in the market. Secondly, the topic of digitalization has been discussed for more than 20 years, but not until recently banks discovered this topic as ubiquitous and of strategic relevance (Lünendonk, 2015b). Thirdly, digitalization in banking

along with other factors, such as changing customer behaviour, the low-interest environment and increasing regulatory frameworks, is a relevant influencing factor for banks. Lastly, banks have digitalized various front-office processes and products already. The impact of digitalization is a theme of major current concern and meaningful to discuss.

On a theoretical level, the topics business model and digitalization, as well as its impact on markets, companies, and customers, were reviewed to present the current level of knowledge. The use of Osterwalder's business model canvas (BMC) for the analysis breaks down the ways a business is run in different elements. By having subcategories, a more detailed analysis of the impacts can be developed. It shows where and how digitalization impacts retail banks, so a tailored adaption of the strategy to the areas of major concern can be done. The BMC is used to analyze qualitative data about digitalization in retail banking. Within the model the authors evaluate how the elements of the BMC have been influenced by digitalization.

1.2. Research Limitations

In this study, the impact of digitalization on the business model of German retail banks will be examined. One needs to keep in mind that other factors such as the macro-economic situation and regulations have a big impact on the business model of banks, too. Nitescu (2016) identifies the digitalization agenda, regulatory change, changes in customer behavior, credit deleveraging and the development of alternative funding channels as the five key factors that push banks to adapt their business model. When reading this study, it is important to consider the fact that various other factors besides the digitalization impact banks. Yet, those are not covered as it would dilute the study on digitalisation and encompass too broad of a scope given the limited time frame for this thesis.

Digitalization is a topic that is constantly evolving and very on-going. This bears the risk that findings become obsolete very quickly. Peer-reviewed literature and representative data that represents the state of the art is limited. Therefore, reports by research units of banks or consulting firms are used to complement academic literature with the current developments. These can be considered biased to some extent. Also, a qualitative approach with semi-structured interviews was chosen to generate up-to-date and empirical information for the study. Ideally, the results could have been backed up by quantitative data to achieve greater generality.

Business model research focuses on internal dynamics of companies. An external perspective such as market pressure is only considered in a limited manner.

1.3. Outline of the Thesis

The study consists of seven consecutive chapters and begins with an introduction to provide the reader with relevant background information. The second chapter is a literature review which presents the research of two different areas: digitalization and strategic management theory with a focus on business models. In the third chapter, the methodology of the paper is explained including explanations of how the data was collected. Chapter 4 introduces the case companies used for the empirical study followed by chapter 5, which presents the empirical findings. Chapter 6 analyzes and compares the findings from the previous chapter to the theoretical knowledge. The study is concluded in chapter 7 with a discussion and conclusion.

1.4. Background

As the study deals with digitalization and retail banking, the following section aims to provide background knowledge about (1) digitalization in general, (2) retail banking and (3) key characteristics of the German retail banking industry.

1.4.1. Digitalization

Digitalization is discussed by various authors whose definitions focus on different aspects of the term. In order to provide the reader with an overview on those perspectives and their differences in content and scope, several definitions are presented in the following subchapter.

Going through the relevant literature, it could be noteworthy to mention that the concept of digitalization at the current stage still is defined very broadly and vaguely. This might be the result of the wide, unpredictable impact digitalization has on society in general. On a rather technical level, Mahaldar, O. & Bhadra, K. (2015) present

"Digitalization is the integration of digital technologies into everyday life by the digitization of everything that can be digitized. The literal meaning of digitalization gives an apparent idea of development and technology dependent world. In this chapter, digitalization means computerization of systems and jobs for better ease and accessibility."

(Mahaldar, O & Bhadra, K., 2015, p. 503)

Other authors focus more on the process of change, triggered through digital technologies, such as Hess (2013), who presents the following definition:

"Digitalization as the process of changes, which is caused through the introduction of digital technologies and application systems."

(Hess & Heinzl, 2012, p. 23)

Although these definitions provide valuable perspectives, the following definition is used for this paper:

"[...] be the combination of proliferation of mobile devices, use of internet-based technologies and leverage of data analytics in the interaction between market agents (e.g between buyers and merchants, consumers and producers, or customers and banks)."

(Milkau & Bott, 2015, p. 322)

This definition is considered suitable for this context because it incorporates the interaction between several market agents, for instance, companies and its customers. It also reflects different channels of mutual interaction that developed through technological advancements, which play an important role in the era of digitalization.

After having a clear picture about what digitalization is, its impact on businesses is described in the following. Digitalization is one of the buzz-words of the past few years, occurring in the most varied contexts (Milkau & Bott, 2015; Gartner, 2015; McKinsey, 2016). Digitalization initiates structural and economic changes which are driven through technology. It challenges traditional business models, but also provides businesses with new opportunities and customers new benefits (Teece, 2010). It influences how people work, play, consume, interact, and stay in touch (strategy&, 2011). Within the business world, digitalization provides greater customer

insights, supports and triggers the creation of new business models, and increases productivity (strategy&, 2011).

Due to digitalization, companies face a wide range of changes, including both challenges and opportunities. On the one hand, firms are facing an increased pace of market cycles, changing customer demands, and the need to use and implement technological trends in a strategic manner (Lünendonk, 2015a; Châlons & Zilch, 2015). On the other hand, digitalization and its influences also bear potential for various benefits, such as an improvement in operational efficiency, effectiveness, resulting in costs savings, advancement of customer satisfaction, and a better response to competitive threats (Lünendonk, 2015a; Châlons & Zilch, 2015). Despite the urgency and the benefits of this topic, many companies are often slow in incorporating digitalization in their strategy. Major barriers for achieving that inaction are outdated IT systems, a lack of strategic vision, and cultural resistance within the organization (McKinsey, 2014; EY, 2016). This implies the urgent need to see digitalization as a major driver for success.

1.4.2. Market Situation in Retail Banking

As the study focuses on retail banks, the following subchapter provides an overview of the current market situation. Retail Banking has been defined by Gardner, Howcroft and Williams (1999) as “[...] the provision of banking and financial products to consumers and small businesses by commercial banks and many other kinds of financial services firm.” Retail banks face several threats and disruptive changes such as impacts of the digitalization, new competitors, stricter regulations, and low-interest rates (Bernad, 2010; EY, 2016; Capgemini, 2016). The challenges as well as its implications will be described in the following section.

Retail banks undergo severe changes induced by the digitalization. Further digitalization is required to stay competitive. Although retail banks have digitized key transactions processes and have been making large investments into digital transformation, additional improvements are needed (Lünendock, 2015a). A study by Roland Berger (2015) supports this view by conceding that banks have completed the first wave of digitalization, which focuses on standardized front-end client interactions, such as online banking. Nevertheless, retail banks across Europe have only digitized 20 to 40 percent of their processes (McKinsey, 2014). Further, the investments in digitalization do not exceed 0.5 percent of the total spending of 90 percent of all German retail banks, leading to the fact that a major part of the digital portfolio is rather shallow (McKinsey, 2014).

Besides the previously mentioned changes in the front-end processes, client focus and data analytics are two additional important components of digital transformation. This is noteworthy in relation to the information presented in a paper of Roland Berger (2016) who state that 75 percent of European banks lose information and data when a customer is switching between digital and physical channels. One can say, retail banks seem to have understood the issue, but not reacted accordingly yet. The main barriers to foster digitalization have been described by several sources as complex structures, security, regulatory and compliance issues, as well as legacy IT systems and a lack of internal expertise (Gft, 2015; Orange, 2017).

Furthermore, the customer relationship changes. Expectations of customers increase with the advancement of technology. Customers expect their bank to improve their services, offer omni-channel solutions, and simplify their product portfolio (Lünendock 2015a). Customer loyalty towards banks decreases due to lower switching costs, greater price sensitivity, and greater market transparency (Bain, 2016). The information asymmetry between bank advisor and customers decreases due to greater transparency and information available online, which empowers the customer. Thus, retail banks need to change their mind-set and think more customer- than product-centric when implementing digital solutions (personal communication, 21.04.2017).

The emergence of new competitors is an additional threat for retail banks. Pure online direct banks, global operating digital platforms, such as Google, Apple, Facebook, and Amazon (Gafa), as well as non-banks, such as Financial Technology companies (FinTechs), compete with retail banks for market shares (Lünendock, 2015a). FinTechs offer specialized banking services such as payment solutions and crowd lending. FinTechs are mostly specialized in a niche product and focus on providing one lucrative service in a very customer friendly and convenient manner, making use of modern technology (Laszcak, 2017; Lünendonk 2015a). They benefit from their flexible business model structures and are independent from established processes and path dependency. Thus, FinTechs have a greater customer-centration that banks still lack. FinTechs act as a catalyst in the digital transformation process because they push retail banks to change their established business model to a more digital one. Losing direct customer interaction is another risk banks face. The direct customer contact happens increasingly more between FinTechs and customers. Retail banks lose the direct interaction with customers. This reduces the chance for banks to strengthen their brand, gather customer data, intensify the customer relationship, and cross-sell other products (Paul, 2015).

Besides the competitive pressure, European retail banks also have to implement stricter regulations after the financial crisis in 2008. The European Union legislated stricter requirements regarding the equity capital, the risk bearing capacity, the cash positions, and deposit protection (Lünendock, 2015a). Banks face organizational and structural challenges when trying to implement the increasing amount of regulations.

Since the financial crisis, there has been a period of low-interest rates. This reduces the income of banks and decreases their profitability and growth rates. Generating income from new sources is a challenge retail banks need to solve in the near future (Bain, 2016). Making use of digital solutions could be one approach.

As this study focuses on the German retail market, characteristics of German retail banks are examined in the next chapter.

1.4.3. Retail Banking in Germany

The German banking industry, is the largest in the European Monetary Union, together with the French one, measured in absolute terms (European Central Bank, 2015). In 2014, the European Central Bank (2015) estimated the total assets of German banks to amount to almost 6.8 trillion Euro, which equals roughly 250 percent of Germany's GDP and 28 percent of the total assets in the monetary union.

German retail banks are categorized into commercial banks, credit cooperatives (Volks- und Raiffeisenbanken), and mutual savings banks (Sparkassen). Commercial banks operate in the private sector and are mainly public limited companies. The business activities are profit oriented (Bain, 2016). The Deutsche Bank AG, Commerzbank AG, HypoVereinsbank AG, and Postbank AG are referred to as the four big commercial banks in Germany. Besides several other business units, they also conduct retail banking. They maintain an urban focused branch network. Additionally, there are commercial pure online banks, called direct banks that do not have branches.

Credit cooperative banks are publicly owned and each member has one vote independently from its capital share. The mutual savings banks and the cooperative banks follow similar and relatively simple business models which mainly consist of deposit taking and lending. Both forms are geographically constrained because their by-laws allow them to provide loans only

to borrowers from the same administrative district (Lünendock, 2015b). Both forms conduct retail banking. Their branches are spread all over Germany in urban as well as rural areas (Deutsche Bundesbank, 2015). They are regionally focused. This is in line with the by-law regulated purpose of savings banks to support the local economy and the local population, which limits their profit orientation. The mutual savings banks have 35 percent of the total balance sheet value of the German banking sector. Therefore, they have a significant influence on the banking sector (European Central Bank, 2015).

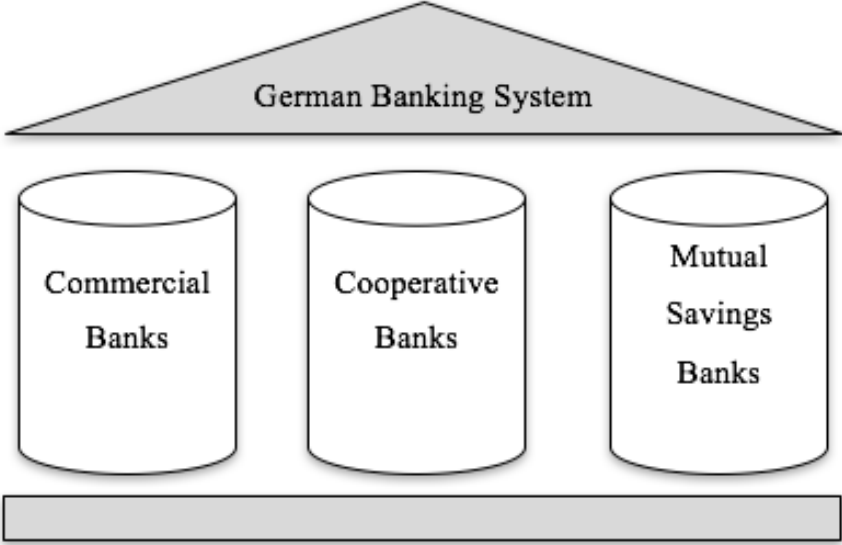


Figure 1: German Three-Pillar-Banking System (created by the authors)

German banks face the same challenges which are described in chapter 1.4.2. Despite the fact that the economic situation in Germany greatly depends on the member states of the European Union, the low-interest rate phase also influences the German retail banks and the amount of institutions decreases as shown in figure 2. (Bundesbank & BaFin, 2015; Bain, 2016). Generating profit is indeed a challenge, which forces banks to achieve greater cost efficiency and new revenue streams (European Central Bank, 2015).

Together with stricter market regulations and decreasing margins, retail banks face intense competition from FinTechs, which altogether puts additional pressure on margins (Bain, 2016).

Digitalization gains ground as processes, services and products become more digitalized in German retail banks. Cost and labor-intensive services such as bank counters have already been

standardized to online banking services. The amount of employees is decreasing and the branch network has undergone restructuring processes to cut expenditures (Bain, 2016).

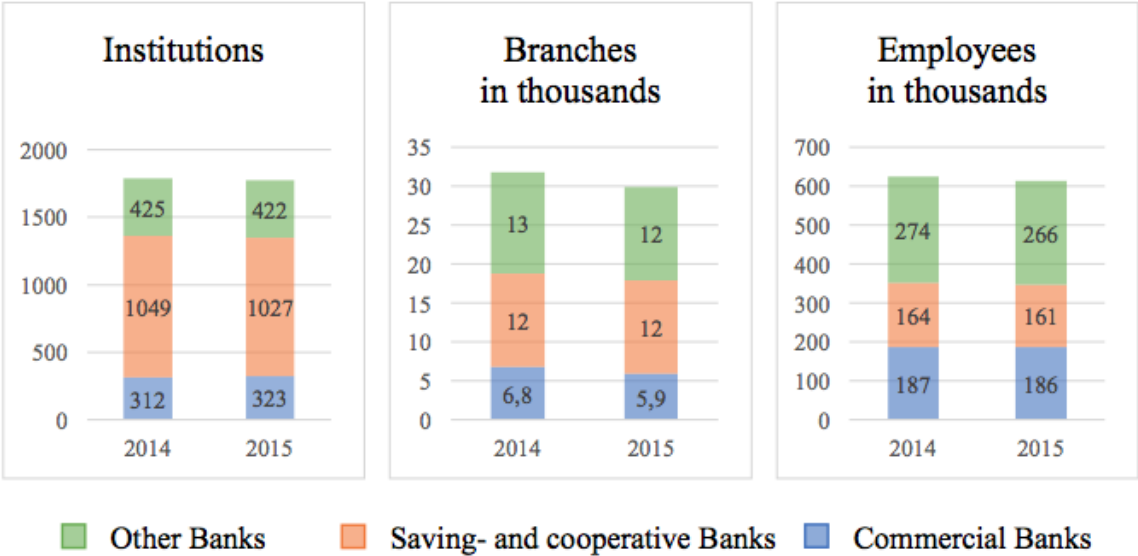


Figure 2: Decrease in institutions, branches and employees on the German market (based on Bain, 2016)

Retail Banks have successfully encouraged their customers to use self-service offers which can be seen with the increasing number of customers using online and mobile device banking. Approximately 60 percent of all retail banking transactions are completed online in Germany. Around 35 percent of the German bank customers use smartphones or tablets for transactions. The number of bank transactions completed via mobile devices has more than doubled since 2012 (Lünendonk, 2015b). However, Germans generally tend to distrust online and digital offers. They are slower in using digital banking services than citizens from other European countries such as the Nordics (personal communication 20.04.2017). Nevertheless, as the technological demands keep increasing. Competition becomes fierce, and changed consumer expectations pushes banks to become more digitalized. Banks need to manage the dilemma between digitally savvy and innovative hesitant customers.

In summary, the German retail banks remain in a demanding market situation due to various competitive forces such as new market entrants, stricter regulations. The challenge to find new ways of generating profit and a flexible and adaptable business model is urgent.

2. Literature Review

The literature review is structured into two main chapters. The first chapter explains the influences of digitalization on companies, markets, and customers. The second chapter reviews strategic management theories but focuses on business model literature.

As previously mentioned, this paper deals with the strategic challenges the German retail banking industry faces regarding their business model, which has been induced through the prevalence of digitalization. The authors follow the structure of a theoretical literature review (Easterby-Smith, Thorpe & Jackson, 2015). It aims to give an overview and synthesis on a body of theory that has developed around the topics of digitalization and business models. Further, it is the aim to provide the necessary conceptual understanding for the framework used in the empirical part. Although the two topics, digitalization and business model theory, are strongly interlinked within this paper, they will be discussed separately in the course of this literature review.

2.1. Digitalization from a business perspective

The subsequent review begins with (1) describing the key impacts of digitalization on an economical and company-level. As the customer-centration is a major aspect in the digital transformation, the second sub chapter (2) targets the influence digitalization had and has on consumer behavior. The final sub chapter (3) describes digitalization in retail banking to clarify the link between those two topics.

2.1.1. Digitalization, organizations and markets

Aside from the question of what digitalization is, which is clarified in chapter 1.4.1, the issue of what and how it has influenced society, economics, and business environment is also a noteworthy point to discuss. Hitt and Brynjolfsson (2000) point out that computer technology had a major contribution to automatization and digitalization, ultimately leading to a

restructuring of economies and new ways of interaction. Cost of coordination, communication, and information processing could be reduced. Computerization and the resulting digitalization had a considerable positive effect on companies' productivity levels. Firstly, it, enabled the organization to make complementary organizational investments, such as business processes and work practices possible. Secondly, the investments into computerization led to a cost decrease in production and output increases (Hitt & Brynjolfsson, 2000).

A further aspect to acknowledge within the business context is the change of economic activities and markets. The most valuable companies nowadays are not the ones that produce tangible products, but those that provide online platforms, for instance retail, hotel booking, and driving services (Kirchner & Beyer, 2016). As a result of the influence of digitalization, the reorganization of markets is necessary. Due to new technologies, a decoupling of products, workforce, and working space can be observed. This leads to a shift from classic production companies to platform-companies that focus on providing the right online platform for a specific market. This implies that many profits are not generated anymore through the production of tangible products, but through the provision and ability to organize the problems of the digital marketplaces. Those are referred to as platforms, which are characterized by delocalization and delegation (Kirchner & Beyer, 2016).

Besides the firm- and process specific adaptations, Moisander and Eriksson (2006) specify on the continuing transformation of economic and cultural life. It is driven through Information and Communication technologies accompanied by digitalization. The authors emphasize the development towards a knowledge-based economy, to which they also refer to as 'information society'. Their perspective is built on by Milkau & Bott (2015), who accentuate the high relevance of data and analytics in relation to digitalization. Personal data can be considered as a way of generating revenue streams. In this context, they emphasize that the underlying economic laws of satisfying customers' needs have not changed, but that digitalization has caused an alteration in the interaction of agents in the market. It has fostered the rise of new intermediaries which have increased transparency about products and prices via comparison portals. Those intermediaries occur in every industry, from person-to-person (P2P) to person-to-business (P2B), which includes retail banking services such as crowd lending.

These changes driven by digitalization highlight the importance of having a digital business strategy, which has been defined as:

“An enterprise-wide strategic initiative whereby the organization does a comprehensive inventory of its core business functions (e.g., Business Development, Product Development, Pricing, Positioning, Branding, Positioning, Marketing, Recruitment, Fulfillment, Customer Service, Regulatory, Compliance etc.) within the framework of the corporate strategy, to determine how and where Digital data and technology can be leveraged to achieve the organization’s goals”.

(Deliya, 2016, p. 222)

2.1.2. Digitalization and customer behavior

As pointed out in previous chapters, digitalization is also triggered by changing consumer behavior. Through the widespread use of new digital means of communication, such as mobile devices, consumer practices have changed (Hagberg, Sundstrom & Egels-Zandén, 2016). Customers’ expectations rose due to the high service standards and constant availability of internet giants like the Gafa. Consequently, customers require improvements in their own efficiency and productivity regarding banking services (Milkau & Bott, 2015). Moreover, customers are attracted by convenience and improvements within their buying experience. These aspects require companies to adjust their customer interface respectively. Further factors pointed out by Kirchner and Beyer (2016) are volatile consumer behavior, which is fostered through high transparency and opportunities for price comparisons as explained in chapter 2.1.3. Decreasing personal interaction of customers and companies, together with a higher market transparency, reduces customer loyalty and trust. Companies need to find new ways of establishing long-term relationships in the era of digitalization.

2.1.3. Digitalization and Retail Banking

The subsequent part demonstrates how digitalization and retail banking are interlinked. As mentioned in chapter 1.4.2, retail banking has been defined by Gardner, Howcroft and Williams (1999) as “[...] the provision of banking and financial products to consumers and small businesses by commercial banks and many other kinds of financial services firm.”

Jakšič and Marinč (2015) and Nitescu (2016) point out that the role of banking does not necessarily change, but the customer expectations do evolve, which urges banks to adapt. Nitescu (2016) further evaluates on the high diffusion of mobile devices which increases the

variety in customer touchpoints. This leads to changing expectations of consumers regarding flexibility and flawless multi-channel banking. Moreover, customers do not only expect a seamless multi-channel banking experience, but wish to be empowered to make their own decisions and even feel entertained. Although the quality of the actual product is still important for the customers, the experience itself counts as well (Jakšič & Marinč, 2015). The increasing technical sophistication of consumers leads to a rise in customer expectations regarding digital solutions. As a result of speed, 24/7 - availability, reliability, and security now play a superior role in fulfilling customer needs.

Aside from changing customer expectations through technical development, other factors also present a risk to the classic business model of retail banks (Nitescu, 2016; Jakšič & Marinč, 2015; Sia, Soh & Weill, 2016). As presented in chapter 1.4.2, those factors include the increasing regulatory framework and low interest environment banks face since the financial crisis as well as new competitors, such as FinTechs. The disruptive power of these new competitors is, among other factors, a result of the comparatively slow reactions of banks in adapting to changing market situations (Sia, Soh and Weill, 2016). Although the regulatory framework might slow banks down, it also provides them with a competitive advantage. They possess very specific knowledge on this topic that FinTechs lack (Jakšič & Marinč, 2015; Vasiljeva & Lukanova, 2016). The regulatory framework provides them with the additional benefit that current and potential customers pay them an advance of trust in regards to money and sensitive business information due to high compliance standards. Despite this advantage, banks cannot ignore the disruptive power and the potential for success FinTechs have within the industry, which is illustrated through their future transaction value, presented in Figure 3. Thus, banks have to set up strategies to collaborate with those firms and perceive them as a business opportunity especially in fields of IT (Vasiljeva & Lukanova, 2016; Cortet, Rijks & Nijland, 2016). For a long time, banks considered IT only as a tool to keep the business running, but not as a strategic instrument to maintain and increase competitive advantage.

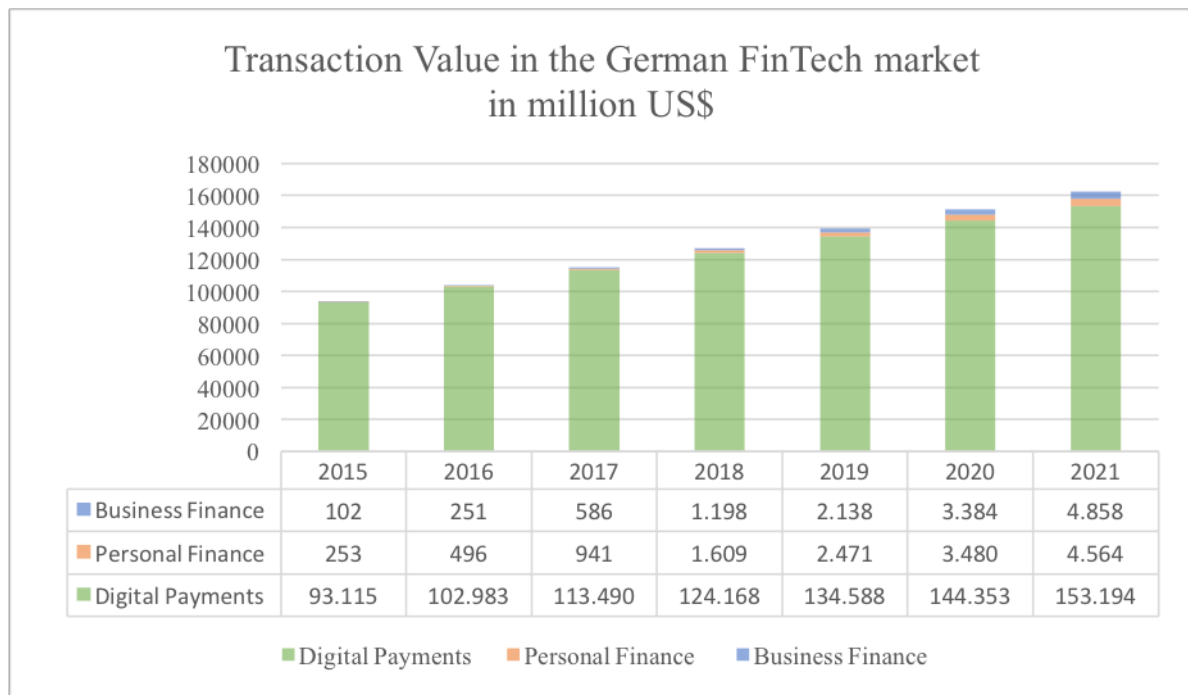


Figure 3: Transaction Value of German FinTechs (based on Statista, 2016)

Originally, the banking business model has focused on economies of scale and the combination of retail, investment and overseas banking. Nowadays, a development towards decentralization, block chains and new competitors force banks to adapt their business model to stay competitive (Nitescu, 2016). This threat is also visible through the observable reduction in physical branches and an estimation of 30 percent to 50 percent net profit at risk (Sia, Soh & Weill, 2016). Banks as an institution are still needed (Jakšič and Marinč, 2015). Thus, the probability that banks will diminish all together is very low. Nevertheless, Vasiljeva and Lukanova (2016) point out, retail banks have to keep track of new technologies in order to provide the best possible, inexpensive and quick solutions to their customers.

Although banks face various threats, also triggered through digitalization, it is important for them not to be lured into scalable transaction banking, but focusing on long-term relationships with their customers (Jakšič & Marinč, 2015). The authors (Jakšič & Marinč, 2015) point out the danger that banks might jump too quickly on purely digital solutions and do not pay enough attention on thinking truly customer oriented. This becomes especially important as customer focus is one of the core aspects within the digital transformation (Jakšič & Marinč, 2015).

As mentioned by several authors (Sia, Soh & Weill, 2016; Liu, Chen & Chou, 2011), digitalization has changed the internal and external landscape by having an influence on the competitive environment and the consequential need for a change in business models. There is a definite need for banks to change and adjust. They need to think about how they can keep the heavily regulated business in the core, but at the same time use the newest technologies to fulfil changing customer expectations, while keeping a high quality of the bank's products. A company's ability to quickly adapt its strategy and business model is of high relevance in these times of constant technological change (Teece, 2010).

2.2. Strategic Management Theories

Business model and strategy are closely linked. Therefore, the relationship between strategy and business model needs to be looked at. The strategy of firms can be analyzed by using many different theories and frameworks. This section gives an overview of three theories and frameworks in strategic management. Literature about (1) the resource based view, (2) Porter's competitive forces and (3) business model is reviewed to find the most suitable theory for this study.

Digitalization implies structural changes and generates the need for digital strategies and business model (Teece, 2010). Therefore, the relationship of strategy and business model needs to be contextualized. It is a subject that is continuously discussed and no consensus is reached. The point of conflict is, if strategy and business models are separate theories that are related to each other or if business models are a part of strategy (Chesbrough, 2010; Osterwalder, Pigneur & Tucci 2005). Chandler (1962, p.23) defines strategy as “the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals.” A strategy is the roadmap of how to run a business and is therefore closely linked to the business model theory. Österle and Winter (2003) perceive business model as part of the strategy whereas Osterwalder and Pigneur (2004) see business model as “the strategy's implementation into a conceptual blueprint of the company's money earning logic”. Following Osterwalder and Pigneurs's definition, business model can be seen as the connector between strategic planning and implementation as seen in Figure 4.

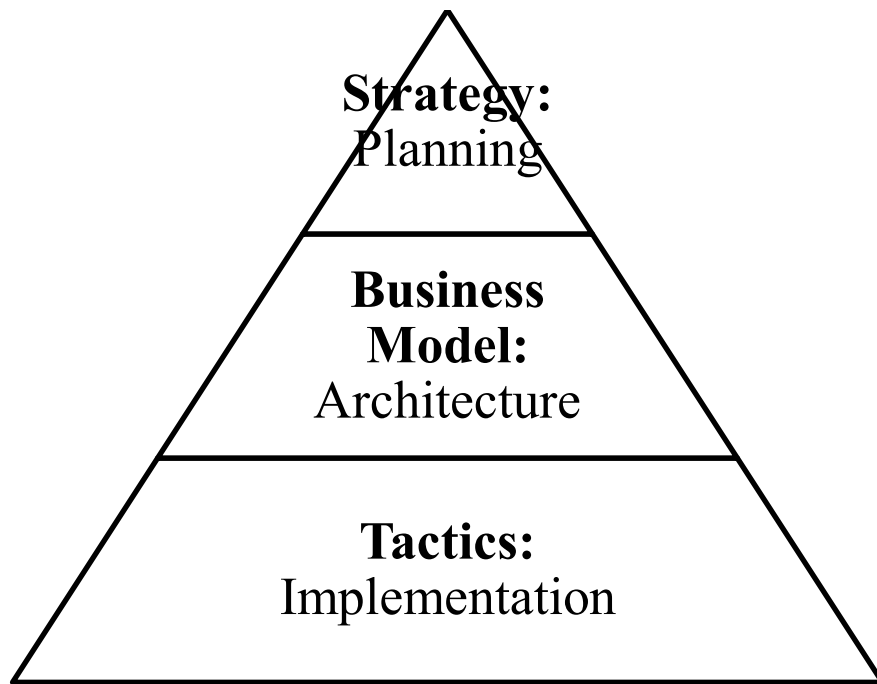


Figure 4: Connection of Strategy and Business Model (own representation based on Casadeus-Masanell and Ricart, 2010)

The main task of strategy is to pursue long-term planning on a corporate level. Business models describe a system how the units of business interact, reflect a company's implemented strategy and builds the foundation for a successful implementation (Magretta 2002; Casadeus-Masanell & Ricart 2019).

To understand the relationship between strategy and business models, the following sub chapters present two different perspectives on how to formulate a strategy followed by business model theory.

2.2.1. Resource Based View

The Resource Based View (RBV) is a theory within the strategic management field which aims to understand how a company can achieve a sustained competitive advantage (Eisenhardt & Martin, 2000). The RBV has an inward pointed angle that mainly covers the resources of the respective company (Amit & Zott, 2001). More specifically, the RBV promotes the understanding that a company can reach a competitive advantage when it bases its strategic imperative on its own, internal resources (Eisenhardt & Martin, 2000; Barney, 1991). In the

optimal competitive environment, those resources are heterogeneously distributed among firms, meaning that different firms have different strategically important resources, which prevail over time (Amit & Zott, 2001; Mahoney & Pandian, 1992; Eisenhardt & Martin, 2000). A further prerequisite specified by Barney (1991) is the immobility of resources between firms. Besides those two conditions the resources need to fulfil the ‘VRIN-framework’, which refers to the attributes valuable, rare, inimitable and non-substitutable. Thus, a company needs to take into consideration the resources that fulfil these requirements to define a strategy that provides it with a competitive advantage. Only then, the company can create a competitive advantage through implementing value creating strategies that are difficult for other companies to duplicate (Eisenhardt & Martin, 2000; Barney, 1991). Resources that play a relevant role within this framework are physical capital, human capital and organizational capital (Wernerfelt, 1984). A company’s resources are considered valuable, when they either decrease a firm’s cost or increase its revenues (Amit & Zott, 2001).

Opposing to other theories that focus on the competitive environment including the simplifying perception that industries are homogenous and resources highly mobile, the RBV opposes this assumption (Priem & Butler, 2001). Further, RBV has promoted the thorough analysis of a company’s internal strengths and weaknesses and to build its strategy on those aspects. As pointed out by Priem and Butler (2001), this strategic framework has encouraged organizations to analyze the efficiency of a firm from an internal perspective, rather than the product side.

Despite those positive aspects, the model has also been exposed to criticism. One factor that has been raised frequently is the lacking consideration of the external environment. Barney (2001) points out that the model comprises a rather simplistic perspective on the link between the right resources and the strategy a company pursues. It delivers the understanding that a company only needs to have the resources that fulfil the VRIN-criteria and automatically develops a strategy that leads to a sustainable competitive advantage. Hedmann and Kalling (2003) question this understanding by pointing out the relevance to rather have unique outcomes than unique resources. Further, it has been criticized that through the strong focus on long-term competitive advantage, the model does not provide solutions to deal with highly volatile markets (Eisenhardt & Martin, 2000; Priem & Butler, 2001; Amit & Zott, 2001). According to Eisenhardt and Martin the model “lacks the logic of change that is crucial in dynamic markets ...” (2000, p. 1118). Moreover, they point out that in volatile markets the capability of sustaining competitive advantage over a long period of time is neither necessary

nor possible. They propose that companies instead should rather focus on achieving a series of shorter competitive advantages.

Banks need to be able to cope with today's changes by adapting their internal resources. However, those challenges are triggered through changes in the environment, which could also be referred to as a volatile market, to resume Eisenhardt and Martin's (2000) argument. As mentioned beforehand, RBV does not take this perspective into consideration. RBV has a focused and narrow point of view on internal resources when analyzing a company. Factors such as customers, processes and financials are hardly considered. Although RBV could provide interesting information about the internal resource allocation, a rather holistic perspective with more levels of analysis is missing.

2.2.2. Competitive Forces Model

In contrast to the RBV evaluated in the previous sub chapter, the competitive forces approach takes mainly environmental factors into consideration and is based on the structure-conduct-performance paradigm of industrial organization (Teece, Pisano & Shuen, 1997). Porter as one of the main representatives within this field developed and introduced the model of the five competitive forces that shape strategy (Porter, 2008). Porter not only considers the external factor of competition, but also four more categories. Those are power of buyers, the power of suppliers, threat of new entrants, and threat of substitute products (Porter, 2008). The key aspect of this model is the industry a company competes, which influences the ultimate strategy formulation (Teece, Pisano & Shuen, 1997). The status of the previously mentioned five competitive influences determine the profit potential of a specific industry (Teece, Pisano & Shuen, 1997; Porter 2008). Thus, a thorough industry analysis provides a firm with a solid understanding of its competitive forces. Simultaneously delivers the respective company with an opportunity to anticipate behavior of competitors over time and formulate its strategy accordingly. The strongest force within an industry becomes the most relevant to consider in the strategy formulation (Porter, 2008). Thus, the process of strategy formulation according to Porter does not consider much more than judiciously deciding between different investments alternatives (Teece, Pisano & Shuen, 1997). Porter defines three strategies to approach the industry situation are differentiation, cost leadership and focus (Porter, 1980; Miller, 1992). Within this concept, differentiation aims on offering a unique product, cost leadership on having

the lowest production costs and hence the largest profit margin. A focus strategy offers a product to a very specific group of customers (Speed, 1989).

The model has found high acceptance within business professionals. One reason might be its provision of a very systematic way of thinking about how to analyze external and competitive forces at an industry level (Teece, Pisano & Shuen, 1997). Further, this model provides a good framework for practitioners not to incline towards one aspect, but to incorporate all five forces within their analysis (Speed, 1989). Altogether, according to Speed (1989), the model provides a good analytical tool to analyze a competitive situation quickly.

Despite these positive implications, especially from a practical perspective, Porter's model also was criticized mainly in methodology (Speed, 1989). According to various authors, the model lacks empirical evidence that support Porter's conclusions. Furthermore, authors such as Speed (1989) and O'Shaughnessy (1984) criticize the choice of the five forces, because they seem too arbitrary.

Porter's model could be interesting for the analysis within this paper, especially because it considers new market mechanisms, which can be observed for instance through the increasing presence of FinTechs in the financial market. Also, the customer behavior, or "bargaining power of buyers" is considered, which in the context of this paper is relevant due to the changing customer behavior in the Financial Services sector. However, to answer the research question of this paper, it is of more use to analyze the given situation by focusing not only on external forces but to incorporate an intra-company perspective.

2.3. Business Model

Business model theory is the underlying theoretical concept for this thesis. Therefore, the following section is divided into (1) business model definition and (2) business model frameworks.

Business model have gained increasing attention and importance in recent years and are widely used to analyze a company's context, operations and environment within strategic management (Baden-Fuller & Morgan, 2010). Compared to Porter's Competitive Forces Model and the RBV, that have a rather narrow view on external factors or specific areas of a company,

Business model apply a broad view on firms (Osterwalder & Pigneur, 2004). When analyzing the impact of digitalization on retail banks, the concept of business model seems reasonable as it explains the way a company creates and delivers value and runs its business (Teece, 2010).

A business model is a conceptual tool to provide companies with an understanding of how they do business (Osterwalder, Pigneur, & Tucci, 2005). Theory about business models gained increasing attention since the mid-1900s, but there is still a lack of a generally accepted definition (Bieger & Reinhold, 2011). Consequently, business model can be interpreted in many ways and there are different opinions regarding the scope of a business model (Magretta 2002). Amit und Zott (2001) define business model as “the design of transaction content, structure, and governance so as to create value through the exploitation of business opportunities”. The importance of value creation can also be found in Osterwalder and Pigneur’s (2004) understanding of business model. However, the question of for whom value should be created is not answered. Casadeus-Masanell and Ricart (2010, p.197) go one step further with their definition and incorporate the stakeholder perspective, which is missing in the previous definitions: “Business model refers to the logic of the firm, the way it operates and how it creates value for its stakeholder”. Concluding from this definition, companies should not only create value for customers, but also for its stakeholders. Magretta (2002) points out that business models are good to describe companies as systems and how pieces of business interact, but the dimension of competition is missing. Business model therefore need to be closely connected to strategy. According to Chesbrough and Rosenbloom (2002, p.533), the functions of a business model can be described as:

- *“Articulates the value proposition (i.e., the value created for users by an offering based on technology);*
- *Identifies a market segment and specify the revenue generation mechanism (i.e., users to whom technology is useful and for what purpose);*
- *Defines the structure of the value chain required to create and distribute the offering and complementary assets needed to support position in the chain;*
- *Details the revenue mechanism(s) by which the firm will be paid for the offering;*
- *Estimates the cost structure and profit potential (given value proposition and value chain structure);*
- *Describes the position of the firm within the value network linking suppliers and customers (incl. identifying potential complementors and competitors); and*

- *Formulates the competitive strategy by which the innovating firm will gain and hold advantage over rivals.”*

The idea of business model brings together the traditional RBV, which says a company should have rare and valuable resources and invest accordingly in their core competencies, and the customer perspective (Barney, 2001). Both perspectives, the RBV and the customer focus, are combined in the value proposition of a business model that allows companies to see how value can be created by offering services and products customers need and are willing to pay for (McGrath, 2010). In the business model a direct connection needs to be made between how a company can combine resources and how that combination then brings value to customers which they pay for (Teece, 2010). A business model describes how a firm creates economic value by meeting its customers’ needs and converting key resources and capabilities into revenue streams (Teece, 2010). Simplified, a business model holistically describes how a firm does business.

A firm's competitive strategy can be outlined by using a business model framework. Two common frameworks to analyze a business model are Osterwalder’s BMC and Johnson, Christensen and Kagermann’s model, which are described in more detail in the following chapter.

2.4. Business Model Frameworks

After understanding what a business model is, it is important to find out of what aspects a business model consists. Since mid-1900s several concepts and frameworks in the field of business model were published that all analyze how a company creates value (Amitt & Zott, 2001; Osterwalder and Pigneur 2004). The different frameworks and concepts share similar characteristics but differ in certain nuances. Reviews of what a Business Model framework should contain can be found in Baden-Fuller & Morgan (2010), Hedmann und Kalling (2003), or Teece (2010). The business model framework encourages the discovery of early signals of a changing business situations and stimulates the exploitation of new models (McGrath, 2010). The focus of the next section lies on the comparison of Osterwalder and Pigneur’s (2004) BMC and Johnson, Christensen and Kagermann’s (2008) business model framework described in ‘reinventing your business model’. Johnson, Christensen and Kagermann’s (2008) framework illustrates how companies with an existing business model can successfully change

their business model. As many retail banks face the challenge to “innovate its business model, which is still contributing revenues and profits, but whose future effectiveness is likely to be undermined by changes in its external environment (Sosna, Trevinyo-Rodriguez & Velamuri, 2010, p.383), Johnson, Christensen and Kagermann’s (2008) framework seems to be a suitable option to analyze the impact of digitalization. As Osterwalder's BMC is based on e-businesses and digitalization drives retail banks to adapt e-business features increasingly, the BMC is the second framework that could be used for this study.

2.4.1. Johnson, Christensen and Kagermann’s business model elements

Johnson, Christensen and Kagermann (2008) underline the relevance of understanding the current business model first before trying to change it. Johnson, Christensen and Kagermann’s (2008) model can be categorized into customer value proposition, profit formula and key processes and activities. The aim of the customer value proposition is to satisfy a customer’s need in a better way than competitors do. It can be broken down into target customer, job to be done and offering that should fulfill an important need for the target customer. The profit formula examines how the company generates profit by delivering value to customers. It includes the revenue model, cost structure, margin model and resource velocity. On the number of sub-elements, it can clearly be seen that Johnson, Christensen and Kagermann (2008) emphasize the importance of financials more in their model than other authors do. The value proposition, that define how the offering is created, is delivered by key processes and resources. They can be broken down into rules, metrics and norms. deliver the value proposition and define how the offerings are created. They can be broken down into rules, metrics and norms.

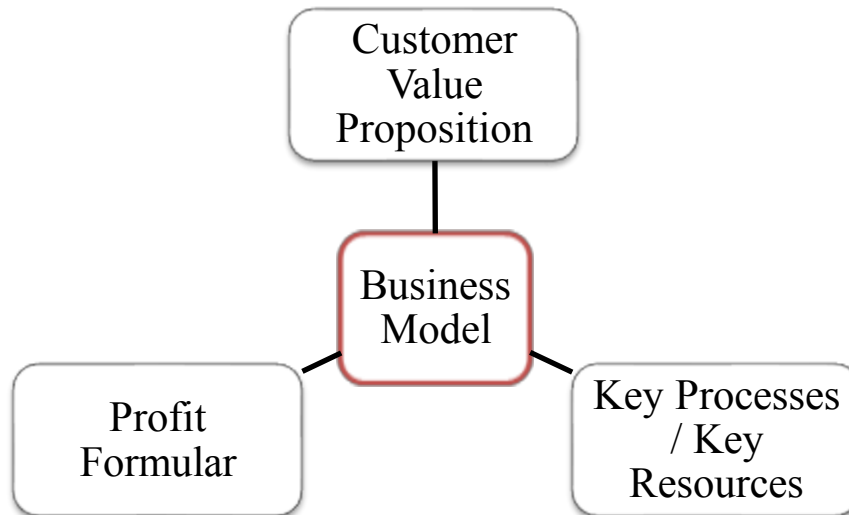


Figure 5: Elements of a business model based on Johnson, Christensen and Kagermann (2008)

2.4.2. Business Model Canvas

The BMC can be used for comparison and benchmark purposes, for performance and competitive analyses as well as for management, communication, and innovation purposes (Osterwalder, Pigneur & Tucci, 2005; Bocken, Short, Rana & Evans, 2014). Osterwalder and Pigneur (2010) identify nine elements that can be categorized in four pillars (see table Table 1).

Pillar		Element		Description
I	Customer Interface	1	Customer Segments	A company aims to create value to different segments.
		2	Customer Relationship	Describes the connection a company establishes between the customer and itself.
		3	Channels	Means of interacting with the customer.
II	Product	4	Value Proposition	A company's promise of value intended to make a product or service attractive to customers.
III	Infrastructure Management	5	Key Resources	Describes the assets needed to create value to the customer.
		6	Key Activities	Actions a company does to create value.
		7	Key Partners	Network of external partners a company cooperates with to make the business model work.
IV	Financial Aspects	8	Revenue Streams	Generated revenue streams resulting from successfully offering value to customers.
		9	Cost Structure	The representation in costs that incur when running the business.

Table 1: Elements of the BMC and descriptions (Adapted from Osterwalder and Pigneur 2004 & 2010)

I Customer Interface Pillar

The customer interface pillar focuses on the customer and value based perspective. It answers the question “who” and “how” people interact with the company (Osterwalder & Pigneur, 2010). It identifies the company’s target customers, which channels are used to deliver products and services to them and how relationships with them are managed. Shortly, it defines the way a company interacts with the market, approaches its customers and stays in touch with them.

(1) Customer segments: A customer segment clarifies for whom a company creates value and who are the most important customers. Segments define the different types of people a company aims to reach and serve. Profitable customers are essential for the survival of every company. In order to better satisfy customers' needs, a company may create segments of customers with identical needs, behaviors, and other shared attributes. By having a homogenous group of customers, needs can better be understood and served (Osterwalder & Pigneur, 2004). Customer segments differ in the offer they request, through which channel they are reached and the relationship between a company and customers as well as the willingness to pay for different aspects of the offer.

(2) Customer relationships: Customer relationships describe the different connections a company builds up between itself and its customer segments. The strength of relationships can vary from weak to a strong and long-term one, which usually creates more value for companies. They should therefore pay attention to which relationship is relevant and brings value. Osterwalder and Pigneur (2004) suggests three methods of establishing long-term relationships:

- Personalization: Making use of data about customers to develop customer segment specific offers
- Trust: Trust can be built up through open and transparent communication
- Brand: The brand shows the values of a company. If those match with the values of customers, mutual identification is easier.

(3) Channels: Customers channels show how a company reaches out to its customers. Channels create customer touchpoints which are used for interaction. Customer channels are the bridge between the company and its customers (Osterwalder & Pigneur, 2004). A purchase process consists of up to five steps, namely awareness, evaluation, purchase, delivery and after sales (Osterwalder, Pigneur & Tucci, 2005). During each step customers need to be reached via different channels.

II Product Pillar

The Product pillar defines the products that are offered to the market through the value proposition.

(4) Value Proposition: Osterwalder and Pigneur (2004, p. 71) define value proposition as “the way a firm differentiates itself from its competitors and is the reason why customers

buy from a certain firm and not from another”. It can be seen as the offer a company makes to deliver value for a certain customer segment. In the value proposition the products and services that are targeted towards the needs of a segments need to be described (Osterwalder & Pigneur, 2010). Newness, performance, customization, “getting-the-job-done”, design, brand status, price, cost reduction, risk reduction, accessibility, convenience, and usability are possible elements that can contribute to customer value creation (Osterwalder & Pigneur, 2010).

III Infrastructure Management Pillar

The Infrastructure management pillar addresses the question how a company creates value. It specifies the needed resources needed, the activities required to perform and the partnerships that are used to fulfil the value proposition.

- (5) **Key resources:** Key resources can be described as the assets needed to formulate the value proposition and necessary to run the business, earn money and to create value to customers (Osterwalder & Pigneur, 2010). The resources can be categorized physical, financial, intellectual, or human. The right amount and combination depending on the kind of firm is essential to create value to customers.
- (6) **Key activities:** Each business model requires a set of activities that need to be done to create value. The activities differ depending on the business model type. They can vary from production and problem solving activities to network or supply chain management activities (Osterwalder & Pigneur, 2010).
- (7) **Key partnerships:** Companies create partnerships with different players to make the business model work. According to Osterwalder and Pigneur (2010), there are four different types of partnerships that can be formed to achieve economies of scale, reduce risk and uncertainty or acquire certain resources and activities. Companies can form strategic alliances, coopetition, joint ventures and buyer-supplier relationships.

IV Financial Aspect Pillar

The financial aspects pillar defines a company’s cost structure and revenue model, resulting in profitability. It defines the business model’s economic performance because customer interface, value proposition, and infrastructure management have an influence on the financials.

(8) Revenue streams: Revenue streams are the cash flows a company generates by selling its services or products. A revenue stream can only be generated when a company offers services or products customers are willing to pay for. Revenue streams directly results from pricing models such as fixed list prices, bargaining, auctioning, market dependent, volume dependent or yield management (Osterwalder & Pigneur, 2010). Revenue streams can either be transaction revenues occurring from a one-time payment or recurring revenues from on-going payments (Osterwalder & Pigneur 2010).

(9) Cost structure: Cost structure describes all the occurring costs needed to operate a company's business model, where all element cause costs. A business model can only function if costs are kept lower than earnings. Business models can either be cost-driven aiming to minimize costs, or value-driven such as offering personalized products or services (Osterwalder & Pigneur 2010).

2.4.3. Comparison of the frameworks

In order to decide which framework better fulfils the purpose of the study, the two previously described frameworks are compared in Table 2:

Element	Johnson et. al	Osterwalder & Pigneur
Customer	yes	yes
Offer	yes	yes
Partnerships	no	yes
Profit Formula	yes	yes
Costs	yes	yes
Processes	yes	yes
Sales channels	no	yes
Customer Relationship	yes	yes

Resource Velocity	yes	no
Margin Model	yes	no

Table 2: Comparison of the elements of Johnson, Christensen and Kagermann's (2008) Business model framework and Osterwalder's business model framework (created by the authors)

As seen in Table 2 the components of the two frameworks are relatively similar and only differ in three of the chosen characteristics. Both frameworks consider the customer perspective, products and processes as well as the profit formula, but categorized in a different way. Osterwalder explicitly considers partnerships and channels in his models whereas Johnson, Christensen and Kagermann (2008) emphasize the financials more by having the additional elements resource velocity and margin model. Since digitalization enables companies to interact in new ways with their customers and new customer touchpoints are created (Nitescu, 2016), the authors perceive that element as important and decide to include it in the study. As described in chapter 2.1.3, FinTechs are disrupting the retail banking market and retail banks have started partnerships with them. Johnson, Christensen and Kagermann (2008) do not consider this component. Osterwalder's BMC seems to be more suitable for the purpose of the study, because of its greater customer focus.

Summarizing it can be stated that all presented models would provide an interesting perspective on the analysis and topic. The BMC helps to get a holistic view of a company as it contains elements of the resource based view such as key activities and key resources as well as more customer driven elements. Due to its background in e-business as well as the consideration of a broad range of internal elements this model is considered most suitable for the analysis within this paper. After reviewing the literature, it can be assumed that digitalization influences the business model of retail banks. The way they are impacted is examined in the following.

3. Methodology

The following chapter (1) elaborates the research approach, (2) explains and justifies the research design which is done in form of a case study, and (3) states how the data was collected and the motivation for the chosen procedure.

3.1. Research Approach

The purpose of this empirical study is to increase the understanding of digitalization's influence on the business models of banks. It explores the characteristics of business models of retail banks that are in the process of modifying their business model towards a more digital one. The BMC is used to see the key impacts of digitalization.

The first step to answer the research question was to get a deep understanding of the fundamental as well as recent theory within the fields of retail banking, digitalization and business models. Thereafter, the researchers were in contact with academic as well as professionals working in the banking industry to clarify if the topic is of interest and relevant to study. Due to the positive response from several industry players, the study was conducted.

The study is based on fundamental management theories about strategy and business models complemented with recent information about digitalization and retail banking. The retail banking industry is disrupted by effects of the digitalization which can be seen on competitive pressure as well as increased customer expectations. The effects of digitalization on the common practices and recent strategic developments in the banking industry need to be considered.

For this study, an abductive research approach is used. There exists a rather big amount of literature about business models which would indicate a deductive research approach of testing hypotheses. However, as digitalization is a relatively new influence on business models, where on-going changes can be seen, a combination of inductive and deductive research approach, named abductive, seemed most beneficial for the purpose of that study. An abductive research

approach is based on theory generation or modification initiated through empirical findings and previous theory (Gardener, Howcroft & Williams, 1999). The study can be argued to be abductive, as it contains deductive elements in form of the literature review and inductive ones in form of the case study. Therefore, first a literature review is conducted to examine the theory from an academic perspective and explain the used framework. The theoretical part is the foundation for the case study with semi-structured interviews that are conducted. The purpose of the case study is to reveal empirical insights. For that reason, the data generated from the interviews is analyzed using the BMC using a pattern-making approach (Yin, 2014).

3.2. Research Design

3.2.1. Theoretical Part

By setting the research purpose on investigating the influence of digitalization on the business model of retail banks, it is necessary to first investigate the theoretical domains of digitalization, retail banking and business models. In the first step, an exploratory study of the literature was conducted, aiming for gaining a deep understanding of the research fields (Easterby-Smith, Thorpe, Jackson, 2015). The fields for the exploratory study were chosen because digitalization, retail banking and business models have gained substantial attention separately, but there are only few studies and findings, in which all three theoretical areas are studied together (Teece, 2010; Nitescu, 2016; Paul, 2015). In order to find suitable literature, the search was conducted via databases such as google scholar and EBSCOhost, which accesses a wider range of academic databases. Books from the library were also used. After a broad and very generic search, the key search terms were identified as business model, business model framework, digitalization, retail banking, strategy, digital transformation. The theoretical study contributes to the purpose of investigating existing literature and integrating gained knowledge of the different research areas to get a more holistic view which enabled the researchers to answer the research question. Through the exploratory study in combination with the BMC, the key aspects and characteristics of a business model in retail banks, that are striving for a more digitized appearance and operations, were identified. After having a broad overview of the different research domains, and empirical case study was conducted.

3.2.2. Case Study

The purpose of the study is to find out the impacts of digitalization on the characteristics of business models of retail banks. As digitalization in the banking industry is a topic of high relevance and on-going developments are seen, empirical data is needed to complement the theoretical knowledge.

Digitalization has an on-going impact on retail banks and new opportunities are constantly evolving. Therefore, different banks react and implement digitalization differently in their business model. In order to grasp the different actions and strategies and conclude patterns, a multiple case study was chosen. It is beneficial to get an understanding of complex and multi-aspect developments (Larsson, 1991). Diverse interpretations of systems as well as interrelations and patterns derive from case studies, after they are analyzed (Brymann & Bell, 2015, Yin, 2014). In the course of the case study, the representatives from different banks were interviewed and patterns are identified. Jack and Kohleif (2007) point out that case studies are a good way of gaining empirical data about consistently changing and less explored topics where existing knowledge needs to be enhanced. The case study approach allows researchers to interpret generated results and to find out patterns which contribute to a holistic view of complex problems (Bryman & Bell, 2015).

Case studies as research design can be criticized because findings cannot always be generalized and applied to issues outside the case field (Bryman & Bell, 2015). Yin (2014) differentiates between statistic and analytical generalizability. The case study in this paper aimed for analytical generalizability by examining and interpreting multiple observations and applying derived patterns to existing theory.

3.2.3. Case Selection

As the topic of the thesis indicates, the participating companies needed to be retail banks. Convenience sampling in form of personal connections as well as non-probability sampling were used to find suitable case companies. The search was executed using online research in industry specific blogs, newsletters and websites as well as making use of personal connections.

The companies for the case study were identified according to the following criteria. Firstly, it was important that they operate as retail banks. Secondly, the operating market was important to have local, national wide as well as internationally operating cases to get a holistic view. It was also intended to achieve a sample that mirrors the three-pillar system of the German banking industry. Lastly, even though the companies operate on different levels, the origin had to be Germany. Only banks operating in the German market were considered in the research process because external factors such as country specific characteristics heavily influence the strategy of banks. For better comparability and to exclude the effect of external environmental factors, retail banks that oblige the German law system were searched for. It was assumed that the external conditions are similar and better generalizability could be achieved.

Moreover, the sample size was of relevance. A multiple-case study was chosen for the benefits of recognizing the specifics of a particular bank and identifying the characteristics that are applicable to all banks. One single case might have been biased and would not allow to make industry wide comparisons of the key impacts of digitalization on retail banks. When selecting the cases, it was also paid attention to select the right amount of companies to find a good trade-off between the quantity of cases and in-depth studying (Kalling, 1999). When selecting the case companies the focus was on having a variety of banks with highly different business models rather than interviewing a large amount. Four different banks as well as one industry expert and one independent consultant who is specialized in digital transformation seemed to be the suitable to find out industry wide patterns and impacts. The amount also allows to study every single case well enough to get a good understanding of the case specific characteristics. The researchers were convinced that this approach is more beneficial to answer the research question as the in depth-study of the small amount of companies clearly showed company specific differences, but also industry wide patterns in the business models.

Applying the selection criteria, Sparkasse Nürnberg, Commerzbank, BNP Paribas Germany – Personal Finance, and Consorsbank were part of the multiple case study as retail banks. Another interview was conducted with an industry expert who has extensive experience in working in banks. The united digital group helped to get a less biased external opinion on digitalization in the banking industry.

Since the case companies cover a wide range of different business models¹, it can be said that the case study supports the objective to explore the impact of digitalization on banks on an industry level. However, generalizability of the results is only possible to some extent. Firstly, because digital transformation is happening at a very fast pace and the business models need to keep evolving and cannot be seen as static. Secondly, the search as well as the definition and the resulting selection might have been influenced by personal biases and personal connections.

3.3. Data Collection Method

3.3.1. Qualitative semi-structured interviews

Empirical data can either be collected through qualitative or quantitative methods. Given the research purpose, the actuality of the topic and the limited time frame, qualitative data collection was considered as the suitable method. Qualitative data enable researchers to get an impression of different interpretations, expressions, and opinions (Bryman & Bell, 2015). The aim is to get a deeper understanding of the characteristics of changing business models. Therefore, qualitative data were collected in form of semi-structured interviews to allow a rather open dialogue (Alvesson, 2011). The approach of semi-structured interviews allowed the researchers to be flexible in asking clarifying questions depending on the given answer. The semi-structured interviews helped to get a diverse understanding of the interviewees' perceptions of the impact of digitalization based on the strategic actions of their company.

In preparation for the interviews, a questionnaire was conducted, which was structured around the theoretical framework touching upon all elements of the business model. The semi-structured interview guide can be seen in Appendix A. The questionnaire was slightly changed for the consultant, as the aim of that interview was to get an external and broader industry perspective. The questionnaire was used more as a guide depending on the course of the conversation and the questions were chosen depending on the respondents' answers. Having a

¹ Differences in the business models of the types of banks are described in chapter 1.4.3. Characteristics of each case bank can be found in chapter 4.

rough guideline during the interviews helped gathering similar data about a specific topic from different respondents which make comparisons possible (Bryman & Bell, 2015).

The interviews were hold via FaceTime or Skype due to the spread locations of the respondents. By conducting the interviews via video conference, body language and non-verbal clues were still seen to some extent which make the evaluation of the given statements more accurate. However, face-to-face interviews would have been better for the non-verbal clues. The interviews were recorded and transcribed to make sure all important information are captured. The interviews started with a short introduction, a briefing about the purpose of the study and ensuring anonymity. To ease the flow of the conversation, rather open questions were asked in the beginning, which let the interviewee speak freely. Afterwards, the questions were targeted towards the different elements of the business model framework.

The interviews resulted in a large amount of qualitative data that helped to get an understanding of the impacts of digitalization on banks after an analysis which is described in detail in chapter 6.

3.3.2. Selection of the Respondents

During the selection process of the interviewees, it was important to have selection criteria which the interviewees had to meet in order to ensure a valuable contribution to the research purpose. Therefore, it was beneficial if the respondents had a good overview of the ongoing business activities, especially regarding strategy, business development and digitalization. That way a comprehensive picture of the current situation of the company's business model and the influence of digitalization could be drawn. All participants are in the upper or top-management and have positions that are closely related to strategy and digitalization. Because of the strategic position of all respondents and their extensive knowledge about digitalization and business model, one or two representatives per company was enough. The research purpose is to gain an industry wide perspective. Thus, it was more important to interview people from different banks than interviewing a large amount of people from one case company. The amount of case companies was more important than the number of interviewees per company as the research goal is to find out industry wide impacts of digitalization. These were identified through the comparison of the data. Ultimately, it was the aim to differentiate between unique commodities and factors applicable to all banks. The six conducted interviews showed sufficient different perspectives and resulted in valuable data to answer the research questions.

The collection of participants was restricted to people who work directly with digitalization and strategy. They have extensive knowledge about those fields and are more willing to accept future oriented changes in the business model. Therefore, the question remains whether the view of digitalization that was obtained in the interviews is representative for the company as a whole. Interviewing employees from other departments and customers could have extended the data pool. Moreover, it should be noticed that 75 percent of the interviewees were men, which may have reduced the diversity in the answers. Nevertheless, it is reasonable to assume that the participants provided representative data.

Five out of the six interviews were conducted in German, which is the mother tongue of the researchers as well as the participants. The interviews were transcribed in German. The quotations used in the empirical findings are translated into English by the authors. One interview was conducted in English.

3.4. Data Analysis

The gathered qualitative data is analyzed using the pattern-making approach presented by Yin (2014). To identify patterns from the empirical data that are applicable to the whole industry, a matrix technique was used (Miles & Huberman, 1994). The matrix was structured into categories centered around the BMC. The nine elements of the BMC were represented in columns and the responses from the interviewees in rows. An excerpt of the matrix can be seen in Appendix B. Following a matrix approach increases quality of the data analysis by being more systematic and enables better comparison (Easterby-Smith, Thorpe & Jackson, 2015). After assigning the statements to the nine elements, conformities were identified to see industry-wide patterns. The patterns in form of the most important findings are described in chapter 5. Having a matrix and using the predefined elements of the BMC canvas reduce the risk of including areas in the analysis that are irrelevant for the purpose of the study (Yin, 2014). It helps the researchers to focus on the needed data. It also ensures that the researchers use the same approach and level of analysis for all cases, which is of relevance in a multiple case study (Yin, 2014). The researchers are aware that the predefined categories of the BMC in the matrix may influenced the examination of the qualitative data as the researchers were biased to find data that support the nine elements. However, the researchers paid attention to that when analyzing the interviews.

To eliminate misinterpretation of statements made by the case participants, the matrix was sent to them. The participants were asked to review their statements to make sure they are understood in the right way. The statements were all categorized and translated into English in the meaning the interviewees intended to transmit.

3.5. Quality of the data

In qualitative research, it is important to guarantee credibility of data. Credibility can be ensured through reliability and validity, that are best known from quantitative research. Against the background of reliability and validity, there seem to be ongoing discussions about the applicability of these criteria in qualitative research (Noble & Smith, 2015). Moreover, generalizability is another criterion to consider in qualitative research (Collis & Hussey, 2014). Despite those concerns, Noble and Smith (2015) point out that reliability, validity and generalizability are suitable within a qualitative context. Validity considers in what way the research measures what is supposed to be measures (Noble & Smith, 2015). Reliability refers to the consistency of the applied research (Noble & Smith, 2015; Bell, 2006). Generalizability as the third metric provides insights in how far the findings of the respective sample can be applied to a population (Collis & Hussey, 2014).

3.5.1. Validity

As part of the data collection, the authors developed a questionnaire for the interviews. The authors based its structure and content strictly on relevant literature and furthermore incorporated iterative feedback from the supervisor. As it was grounded in relevant theory and professional input, the questionnaire itself provides higher validity.

The validity was further increased through the choice of interviewees. All persons interviewed are very familiar with the topic of digitalization, banking and business models, which provided a high-quality content regarding the topic and the answering of the RQ. In order to ensure the same understanding and comparable knowledge about the research topic, the authors sent a clarifying email with explanations and background information to the participants.

In the beginning of each interview the authors furthermore clearly stated the purpose of the study to the interviewees. This aimed to ensure that all participants had the same understanding about this research.

3.5.2. Reliability

The papers used for the study were chosen with the highest aim in terms of reliability. Thus, with the respective key words provided in the abstract, it should be possible for others to reach a comparable outcome. However, it should be considered that literature about digitalization in the banking industry advances very quickly. The fast advancements in those fields might provide difficulties to get the exact same output of secondary data in the future.

The study itself is rather easy to repeat, as the questionnaire is provided in English in Appendix A. However, it might be difficult to conduct the exact same study, as the sample was mainly built on convenience sampling. Hence, it may be difficult to set up the same pool of participants of the study without the presence of the authors, which decreases reliability.

Further, it should be noted that semi-structured interviews in general have a rather low reliability due to low level of standardization. In case of this study, for instance, individual follow up questions were asked, depending on the progress of the interviews. In order to balance this factor out, both authors together conducted the interviews and compared their notes after the interview. Furthermore, all interviews were recorded.

3.5.3. Generalizability

Due to the convenience and non-probability sampling method, as well as the semi-structured interview method, the generalizability of the study is limited (Collis & Hussey, 2014). The authors intended to increase generalizability through selecting a focus group that represents the three-pillar system of the German banking industry. One should keep in mind that the participants of the sample are dealing with digitalization in banking on a regular basis. Interviewing other employees of the companies might have provided different and more generalizable information.

4. Company Background

The case companies are introduced in the following chapter to provide a better understanding of their operations. Background information about the case companies as well as the market of operations and digitalization strategy is outlined here.

4.1. Sparkasse Nürnberg

Sparkasse Nürnberg is a local operating bank in the city of Nürnberg with about 600 000 potential customers. It is the market leader with a market share of 41 percent in retail banking in the city of Nürnberg (Sparkasse, 2016). It belongs to the network of German-wide mutual savings banks called German Savings Bank Finance Group that represents the interests of more than 400 members on a Germany-wide level. Each member bank has its own strategy and operations. The Sparkasse Nürnberg operates 110 branches and has 1890 employees (Sparkasse, 2015).

Sparkasse Nürnberg initiated its first digitalization projects around three years ago from today (personal communication, 20.04.2017) with the exploration of new online sales channels beyond their conventional branch operations (Sparkasse, 2015). They narrowed down their product portfolio, started selling the majority of their simplified products online, extended digital customer service, and improved their mobile banking. The branch network and face-to-face consultation remains of high strategic relevance but, due to the digital transformation, low interest rates, competitive pressure, and changing customer expectations, Sparkasse Nürnberg closed and consolidated some branches. Customers only visit a branch once or twice a year on average and perform easy and standardized banking transactions, such as bank transfers, online (Sparkasse, 2015). One of the main strategic challenges that Sparkasse Nürnberg faces in the course of the digital transformation is innovating its business model to be more digital without alienating or losing customers that do not embrace digital solutions.

4.2. BNP Paribas (Personal Finance)

BNP Paribas is France's largest internationally operating bank (Williams-Grut, 2017). The company is active in four domestic markets, namely France, Italy, Belgium, and Luxembourg, where it employs approximately 68000 employees. BNP is also active in other European countries such as Germany. BNP Paribas serves more than 15 million private customers and one million small business and corporate clients. In addition to the domestic markets, the bank operates internationally in the US, Asia Pacific, and other non-EU European countries (BNP, 2017).

BNP Paribas Personal Finance, a subsidiary of BNP Paribas, focuses on consumer credits. It sells personal loans via three channels, namely car dealers, own customer relationship center and the local website. Furthermore, the company offers saving solutions and insurances to its clients.

To foster its digital performance, BNP Paribas decided to invest three billion Euro in digital transformation. With this investment, BNP Paribas hopes to build the bank of the future and to achieve an annual growth rate of 6.5 percent and cost savings of 3.4 billion Euro by 2020, (Jolly, 2017). These investments will be allocated to the enhancement of technology labs, company incubators, as well as internally developed apps and platforms to provide new customer experiences, streamline its operations, and use Big Data more effectively (Williams-Grut, 2017). Like other banks, BNP Paribas is facing various obstacles, including the low-interest environment and a costly branch network, especially in its domestic markets. The investments into the digital transformation mean to cut operating costs and fulfill new and evolving customer expectations (Stothard & Arnold, 2017).

4.3. Consorsbank

Consorsbank is a private direct bank, belonging to the worldwide operating BNP Paribas. Since the merger of Consorsbank and DAB Bank in 2015, Consorsbank is now the fifth largest digital bank in Germany with 1.6 million customers and the leading broker with 11 million trades executed. The company's headquarter is located in Nürnberg with approximately 800 employees (Consorsbank, 2017). Using the same model, but different names (Hello! Bank)

BNP Paribas operates in various countries, such as Austria, Belgium and Italy (hellobank.com, 2017). Consorsbank as an entity, however, only operates in Germany.

Since Consorsbank operates exclusively online, its digital strategy is well developed compared to other German banks that have focused on branch and personal consultancy banking (personal communication, 20.04.2017). Ensuring that all products are available online, as well as offering customers a omni-channel approach, has been part of its digitalization strategy for many years (personal communication, 20.04.2017). Consorsbank's focus on improving and simplifying front-end processes and customer interaction has made these services more advanced. In the near future, Consorsbank aims to improve on the digitalization of back-office processes and the channel-breaks that customers experience when interacting with Consorsbank (personal communication, 20.04.2017). Utilizing a customer-centric focus is a strategic long-term goal, meaning that products, interactions, and services must be formulated from the customer's perspective and are personalized for individual needs. It will incorporate an increased and improved use of Smart-Data and Analytics (personal communication, 20.04.2017).

4.4. Commerzbank

Commerzbank is a private bank operating internationally, but with Germany and Poland as its core markets. Commerzbank has 1050 branches and serves over 16 million private customers in Germany. Thus, it is one of the largest private banks in Germany (Commerzbank AG 2016).

Since 2013, digitalization has become a core strategic focus. Just recently, the Commerzbank presented its digitalization strategy, called Commerzbank 4.0, which aims to develop a holistic digital business model that combines digital banking with an intelligent usage of branches. Eighty percent of all back- and front-office processes are projected to be digitized by 2020 to achieve greater efficiency and profitability. A consequence of this digitalization is the dismissal of 9600 employees. The Commerzbank invests heavily in digitalization and IT systems, nearly 700 million Euro per year, and employs 200 internal and external people working in the digitalization field (Commerzbank, 2016).

4.5. United Digital Group

United Digital Group (UDG) is a full-service provider from Germany specializing in digital transformation. The company offers consultancy and agency services with a broad portfolio of competencies ranging from strategic digital transformation consulting services to creative digital solutions implementation. UDG supports its clients in the transition to a digital company (udg.de, 2017).

UDG's strategy consultancy has been working with various German banks and providing these banks with expertise in the digitalization process. UDG has comprehensive knowledge from a variety of industries and extensive experience assisting companies master the digital transformation (personal communication, 21.04.2017).

Besides the interviews with the case companies and the consultant, the authors had the opportunity to speak with an independent industry expert who will be referred to as 'industry expert'.

5. Empirical Findings

The empirical findings presented in the following chapter are organized according to the structure of the BMC. The text starts with (1) customer interface, continues with (2) Product and (3) Infrastructure management and finishes with (4) the financial aspects. The text aims to give the reader a first overview and understanding of the interview content.

It should be noted, that some topics were covered with more detailed within the interviews than others. Consequently, there is more content on those topics. The interviews were conducted in German, with the quotes are translated into English by the authors. Furthermore, it is relevant to keep in mind that some of the statements of the resulting data were applicable to more than one category. Thus, there might be overlaps between the statements and different categories.

5.1. Customer Interface

5.1.1. Customer Segments

Segments of customers a company aims to offer value to.

The data set revealed that customer segmentation is a relevant dimension for all case companies. The results show that digitalization has a rather indirect influence on segmentation. It can be concluded from the empirical data, that each bank is aware of its different customer segments and behavior. However, the interviews show that purposeful segmentation and target actions are rather seldom.

The interviewed banks conclude their segments mostly by behavioral and demographic criteria. In some cases, segmentation also happens according to the actual wealth potential of the customer. These criteria influence different aspects such as the level of interaction, the customer relationship management, the service level and the offered product range. This point of view is partly supported by the respondent of the direct bank who stated a certain observation of customer behavior and purchases as well as the resulting conclusions about his/her financial situation and purchasing power.

"You have behavior criteria and you have demographic criteria. The segments are linked to the potential of the customer in terms of patrimony, income, type of project and age. "*BNP Paribas Personal Finance*

Upon closer examination, it could be observed that the relevance of different segments might vary, depending on the type of bank. The data collected from the full license banks, such as Commerzbank and Sparkasse, showed that they serve a very broad customer base, including various segments in terms of age and personal assets. For these cases the age segment of 50+ is important. This is noteworthy in relation to digitalization because this customer group to a large extent prefers to conduct banking service via branches. Because of the branch affine customers, those specific banks continue their branch network, but with an increasing number of digital services. The younger customers in contrast tend to prefer online solutions. This wide range of customers is important and challenging for banks like the Commerzbank. They need to manage the balancing act between a young, technological savvy customer group and an older consumer group which tend to prefer the branch network.

"We want to serve all age groups. We do notice that our customers 50+ are using our branches more regularly than other customer groups. We strive to provide the right service offers for customers that are fifty years or older, which is an important group for us, and one of the reasons why we do not reduce the number of branches." *Commerzbank*

At the same time data showed that the purely online operating direct bank does not encounter the challenge of having such a heterogeneous customer base. This company takes into consideration behavioral and wealth criteria.

"It is noticeable that there is not one, classic direct bank customer. Segmentation happens more according to product not age. Overall, it can be stated that direct-bank customers are more affluent." *Consorsbank*

One interviewee particularly stated that digitalization did not have a distinct influence on the segments itself, but on the communication and interaction with members of the different segments. These changes are strongly driven by digitalization and resulting changing customer demands.

"What changed is the way the banks try to interact with customers, more that the criteria of segmentations itself." *BNP Paribas Personal Finance*

In summary, it can be stated that the data set provides evidence that banks segment their customers according to various criteria and base interaction, service level and CRM approach on these segmentations. Digitalization has neither influenced the criteria, nor the segmentation itself, but the interaction and communication channels within the segments.

5.1.2. Customer Relationship

The customer relationship describes the connection a company establishes between the customer and itself.

When comparing the statements of the interviewed banks regarding customer relationship, one reoccurring aspect is customer centration. According to the interviewed companies, independent of the bank and company type, the customer focus is of highest relevance and might even increase in the future. It is referred to as one of the major impacts of digitalization. This shift towards customer centration is mainly driven by changed consumer expectations, which in turn is also a driver for digitalization within companies.

"We plan to align the digital offers more with customer needs. During the product development, we think from the customer perspective, what he/she needs and what is relevant for him/her." *Commerzbank*

A similar assertion was made by the interviewed consultant. She emphasized that future banking and product development need to be initiated and developed from a true consumer perspective and not only for cost savings and efficiency reasons.

"There has to be a mind shift, so that projects won't be initiated only because of efficiency improvements or to decrease costs, but from the customer perspective." *UDG*

The data set also provided insight into the changed customer expectations that are relevant in times of digitalization. One changed aspect is the level of speed the consumers expect. They require all processes to be quick and in the optimum case completely digital and paperless.

Millennials² in particular have a high expectations in terms of customer service. They are willing to change banks quickly if their expectations are not met.

"Mainly for the millennial customer; they are much more tempted to see if the service is good. They are very demanding. If the service is not perfect they will immediately change." *BNP Personal Finance*

Due to digitalization, the customer touchpoints change. It can be derived from the data set that consumers inform themselves via online channels before they have a first personal encounter. More information about products are available online, which decreases the information asymmetry between bank advisors and customers. Through digitalization the customer is more empowered within the whole purchasing process than before. Consumers enter the point of sales well informed, knowing which product they most likely need. As additionally pointed out by one of the respondents, this shift in the customer-sales person relationship also implies a transformation of the sales process itself. It is less about the exchange of information, and more about the finalization of the purchase. The role of sales persons might change to a more specialized and knowledge-based advisor.

"[...] you have prepared your purchase in advance and you did that online. When you were at the website, you would also prepare your loan proposition online at that very moment. " *BNP Paribas Personal Finance*

Even though the relationship becomes more digital, the human perspective is still considered as important for the development and maintenance of good and long-term customer relationships. The degree and specific channel of human interaction may vary. Nevertheless, a personal component in the relationship is important for all banks, independent from their business model. While the purely digital direct bank incorporates telephone hotlines and co-browsing, other participants of the sample emphasize the high relevance of their branch-network.

² Millennial: a person born in the 1980s or 1990s —usually plural (Merriam-Webster, 2017)

"We want to serve our customers on a digital and personal level. Thus, compared to other German banks we are not planning to close branches."

Commerzbank

"We don't want to compete with direct banks. Personal advice will always play an important role." *Sparkasse Nürnberg*

Apart from having a good, long-term customer relationship, the aspect of trustworthiness in this relationship is important and supported by all interviewed banks. As pointed out by one of the respondents trust is highly relevant in customer's relationship to their banks. Within the interviews two observations could be made. Firstly, full service banks with a branch network consider the branches as a tool to build up trust through the personal relationship between consumer and bank employee. Secondly, the understanding was communicated that this existing level of trust banks have, provides them with an advantage over new competitors such as FinTechs. Trust is created through high compliance and regulations.

"In the end, trust plays an important role in banking. This will not change in the coming years." *Sparkasse Nürnberg*

"[...] through regulations and the benefit of a doubt, banks have a leap of faith from customers, compared to FinTechs." *Industry Expert*

Depending on the type of bank, the mechanism of how trust in the customer relationship is created differs, especially digital options. The purely online operating direct bank focuses on developing and communicating a strong brand image and company values. Good customer service and digital-personal solutions such as co-browsing are ways to create trust without physical interaction.

"Trust is the important aspect [...]. A strong brand image is important. Established banks are trusted more because of their long history and values compared to FinTechs. We stand for security and certain values that trigger trust from customer. Through our brand messages we need to communicate trust. Further, the services need to be good, so that the consumer does not develop doubt in the performance of the bank. The journey for the customer needs to be easy." *Consorsbank*

Noteworthy to mention is that the interviewed consultant communicated the opposite opinion, namely that trust is not relevant anymore today and in the future because it is a prerequisite to ensure cyber security. According to her, trust nowadays is related to security, which is presumed by the customers anyways. Thus, trust from the customer perspective is rather seen as a hygiene factor, which every bank must have.

"Trust is not such a big deal nowadays. In the customer's eyes, trust equals security. Customers expect security." *UDG*

Although the interviewed banks support the perspective that a long-term customer relationship is important to them it also has been noted that at the same time customers become less loyal to banks, for instance changing accounts more often and easily (also referred to as account hopping). This development is enhanced through new competitors and new digital options, which make it very easy to open new bank accounts. Thus, banks have to adapt respectively on a digital level to serve their customer's need for convenience and speed.

"The people do not have a personal relation anymore to their banks anymore. There is less customer loyalty." *UDG*

A further topic to mention in relation to banking, digitalization and relationship building is big data and data analytics; research has shown that banks in most cases do not use big data and data analytics at all or only to some extent to improve their customer relationships. This implies inefficiencies on the bank's side in terms of individualistic and true customer focused marketing and communication to build up customer relationships. This statement is supported by all interview participants in the sample.

"I think we have a very large pool of customer data. Banks are not ready to use Big Data ad hoc. I believe, we first have to capture and define the data and in the end find a good way to use it in the best possible way. This will surely take us another two to three years. Of course we do use the data somehow, but at the moment we cannot implement truly target-oriented marketing." *Consorsbank*

A final comment on the customer relationship and how it is threatened by new competitors has been raised by the representatives of Commerzbank. According to the interviewees, new competitors such as FinTechs and Gafa are not a big threat due to strict regulations in Germany.

Nevertheless, banks are aware of the possible risk of losing its role as intermediaries through new digital customer solutions and with that the direct customer interaction.

"We particularly see the threat in the fact that we might lose our customer interface, and with that the customer relation through new intermediaries."

Commerzbank

In summary, it can be stated that as a result of changing customer expectations, banks need to work in a truly customer-centric manner, incorporating the customer perspective and empowering customers. Despite digitalization as an overall important tool, human interaction with personal service on different levels between bank and customer is still considered important, especially in context with a long-term and trustful customer relationship. New digital solutions, such as big data and data analytics, are not used, yet, although they could be a tool to build up long-term customer relationships.

5.1.3. Channels

Digitalization changed communication and sales channels in recent years. This development is observed and confirmed by the interview participants within the banking context. One driver of that change is the changing customer behavior. Customers tend to research online and purchase offline, referred to as hybrid customers, which lead to the introduction of multi-, or omni-channel banking³. Banks need to have a good and simple customer journey without any channel breaks. Interestingly though, the respondents of Commerzbank mainly referred to multi-channel banking as the best approach for the future, whereas the representative of BNP Personal Finance perceived omni-channel banking as the future solution, where the latter approach in fact is perceived as an advancement of multi-channel banking. This discrepancy could be interpreted as a divergence in the process of digital transformation between those two companies.

³ Omni-channel banking: Omni-channel banking is the advancement of multi-channel banking. It describes the seamless and consistent interaction between customers and their financial institutions across multiple channels (IBM, 2017). All information and products are available at any channel.

"[...] our products are available online. This has not been the case with many banks in the past years. This means, products can be used online. Many services and administrative tasks can be done online. Additionally, customers can reach us via telephone hotline. I call customers that use online and offline channels hybrid customers. As soon as the product becomes more complex, customers prefer the personal contact " *Consorsbank*

"We think that the multi-channel approach will be most relevant in the future." *Commerzbank*

Despite the high relevance of digital sales channels, personal communication through branch networks remains important. This observation is relevant on two levels. Firstly, banks, especially full service banks, need to consider the heterogeneous customer base they serve. Secondly, it still is observable that consumers prefer the personal contact when purchasing more complicated products. Despite these aspects, it was communicated in the interviews that the branches as they are known today have to change and adjust to changing customer demands. This includes changes in the infrastructure, design, employee structure and self-service terminals.

"Branches and online channels work together complementarily. The personal contact remains highly relevant in the future. There will be different branch structures. On the one hand, there will be smaller branches where service employees will take care of the simpler services. On the other hand, there will be Flagship branches where customers can get advices regarding more complicated products." *Commerzbank*

At the same time, it has been observed that customers have different expectations regarding the accessibility of the services and information nowadays, often requiring access 24/7. However, not only the accessibility, but also expectations in terms of how to communicate changed through an increased digitalization and changed consumer behavior. Customers request digital, individual and personalized as well as trustworthy communication. Communication is perceived as an important channel to build up and strengthen the customer relationship.

"[...] the customer wants to do his/her bank transactions 24/7 nowadays." *Consorsbank*

" the communication becomes more modern and innovative. Many want to present themselves as modern and trustworthy. With existing clients one focuses very much on the informal and personal communication in order to support the individual character of each relationship." *Consorsbank*

At the same time, it was communicated that customers like to have a certain amount of self-determination and empowerment by having the opportunity to change simple, administrative things themselves, without the need to contact customer service.

"There is the interest from the customer side to do simple and administrative tasks themselves and only get in touch with the customer service if the topic is more complicated." *Commerzbank*

Although the interviewed banks communicated a positive perception of their channels the consultant still sees room for improvement in terms of service availability, branch concept and more personal, less complicated channels.

"There still needs a lot to happen within the service, for instance the availability of services. Further, the branch concept has to be thought through. It has to be more personal, less complicated and less complex."

UDG

The interviews further revealed that the topic of sales and communication is relevant for all participants of the sample, but with different strategic relevance. While some push online availability of products and services, others do not report about drastic changes in channels.

"Customer interaction has not changed fundamentally. But, they do communicate more via E-Mail and Social Media, but often rather through private initiatives, not because it is strategically driven." *Sparkasse*

Nürnberg

"We added new channels such as a telephone service, a live-chat, and video customer service as well as co-browsing. We have added various digital solutions along our customer journey." *Industry expert*

In summary, the data about channels provides evidence for several insights. There is a change in the communication and sales channels driven through changes in customer expectations.

Those changes, more specifically, include a 24/7 availability, as well as speed, empowerment of the consumer and a personalized and digital communication. Further it can be observed that customers show a so-called hybrid behavior by researching information online and then purchasing offline.

5.2. Product

5.2.1. Value Proposition

A company's promise of value intended to make a product or service attractive to customers.

Within this dimension, it needs to be examined if and how the product offering of retail banks change due to digitalization. The data set regarding the value proposition provides several, sometimes contradicting insights, but also common features between the participants. The first feature the participants share is the understanding that retail banks have to change from offering specific products to offering solutions that support customers in specific living situations. Banks will earn money by advising consumers in specific life conditions, which lead to quite fundamental changes within banks' value propositions.

"Banks will not be talking anymore about products, but about solutions and the satisfaction of customer needs." *Consorsbank*

"Banks have to think whether the products fit customer expectations. Products need to be simplified by having a pure customer perspective. Banks need to become a companion for a period of life, and not only a counterpart to discuss contracts. There will always be branches, but they have to change and provide advices in regard to life circumstances including cross-industry co-operations." *UDG*

More specifically, a common strategy for all participants is the digitalization of their product portfolio. Digitalization affects the product portfolio. The amount and complexity need to be reduced to make all products available online. According to the data provided, the opinions regarding the product range in general differ. The majority of the sample companies stated that the product portfolio in fact got reduced and simplified. BNP Personal Finance on the contrary states that they plan to introduce a wider range of products.

"Our product portfolio became more digital. All of our services can be purchased completely online since several years." *Consorsbank*

"We have less products and the ones we still have are less complex."

Sparkasse

In this context, the Commerzbank follows a double-edged solution. The bank limits and simplifies its product portfolio while at the same time extending it. They add services that classically did not belong to their banking products but that are bank related, such as invoice management. This provides the bank with the opportunity to create more revenue streams during times of low interest rates.

"We don't want to have an exuberant product diversity." *Commerzbank*

"[...], which means that we might include topics that do not necessarily belong to the classic banking business, but that are related and where it is possible to earn money, especially within the low-interest environment."

Commerzbank

Summarizing, products need to be more flexible and adaptable to the customers living condition. This requirement goes in line with the information stated in the beginning of the chapter that future banking will not be about products, but solutions to the life circumstances.

5.3. Infrastructure Management

5.3.1. Key Resources

Describes the assets required to create value to the customer.

The main message extracted from the interviews is that all banks have to adjust their key resources on various levels in order to be able to deal with the challenges triggered by digitalization.

Firstly, there is the technical level that is not up-to-date. Many, especially the banks with branches, have an outdated IT-infrastructure, in some cases from the 70ies. Secondly, there is a lack of IT knowledge within most of the organisations. The respective IT departments do not have the right skills to deal with new systems and furthermore implement IT as a strategic

factor, and not only as an internal service provider. Additionally, many employees do not have the right project management skills. This means, many are used to manage projects according to waterfall methods, not agile methods.

"IT in fact is a big topic. The IT departments are used to work with waterfall-methods; this means, they develop a tool for three years and roll it out. But this does not work anymore. Many project teams by now work with agile methods, which IT departments are often not used to. They lose their planning security and have to increase transparency which is one of the largest problems within banks." *UDG*

A final key resource that needs to be improved is culture and change management. Many employees have banking know-how, but are not capable of applying that knowledge to a more digital environment. Furthermore, it has been observed that change management processes are implemented rather hesitant.

"In the digital transformation process, it important to recognize that many people do not have the necessary competencies. Some employees do not have a mind-set to support digital solutions. We have to build up this knowledge [...], this is all part of the change process." *Commerzbank*

5.3.2. Key Activities

Actions a company does to create value.

There is a rather limited amount of data about key activities indicating that digitalization influences that element only to some extent.

As noted in the data set, many banks have managed to adjust front-end processes that support the customer interface. In many cases the internal IT-system, was not adjusted, yet. This leads to an asymmetry between front and back-office processes. This might bear the risk that the speed of internal processes does not keep up with customer expectations.

"Back-office processes are the main challenge for all banks at the moment. On that level, many banks are still very old school. [...] We are not there, yet and it'll be a major task for all banks to modernize their IT infrastructure." *Consorsbank*

Concluding, it is crucial that companies synchronize their internal and external IT infrastructure and make processes between them more flexible.

5.3.3. Key Partnerships

It can be derived from the interviews that all banks within the sample engage in partnerships with start-ups and FinTechs to accelerate the digital transformation. Those companies provide knowledge and a level of agility that banks do not have. All banks cooperate with FinTechs along their value chain if it fits with the overall strategy. Some banks even create a platform and innovation hubs for FinTechs.

"Yes, we do have several cooperations with FinTechs. [...], you cannot avoid cooperating with FinTechs. They have a readymade solution which we do not have to develop ourselves and which can be integrated quickly." *Consorsbank*

" It is always important that the FinTech matches with our portfolio. Besides that, there are situations in which the Commerzbank serves more as an enabler. We have for instance set up an innovation hub called 'Between the towers'." *Commerzbank*

Besides partnerships with Fintechs, it is even necessary to form strategic alliances in some cases. One example is the platform check24⁴. 70 percent of all consumer loans are sold via this platform, which makes it impossible for banks not to cooperate with them.

"One example is check24, which by now is a main tool to acquire customers. In the German market 70 percent of the whole installment credit

⁴ Check 24 is a website that offers price comparisons for various products, including insurance, loans and rental cars.

volume is sold via check24. This is a huge number, which means we cannot avoid this player." *Consorsbank*

Noteworthy to point out is the statement by the consulting company, which was not mentioned by the interviewed banks; according to her, there will be more cross-industry cooperation and consolidations within the banking industry.

"There will be consolidations within the Germany banking industry and more cross-industry co-operations. Synergies will develop between totally new constellations which really think from the consumer perspective. Those attack the sovereignty of banks." *UDG*

Concluding, partnerships with FinTechs and other important industry players are important to master the digital transformation successfully.

5.4. Financial Aspects

5.4.1. Revenue Streams

Generated revenue streams resulting from value propositions successfully offered to customers.

Through the low interest rate environment and other aspects, banks face difficulties earning money nowadays. This statement is supported by all banks in the sample. Customers seem to be very price sensitive and not willing to pay money for products and information that are perceived as commodities.

"Due to the low interest environment banks do not earn much money at the moment. [...] So, where do they earn money with? Well, they have to retain old customers and attract new ones, which is the reason why they have to offer new products and services." *UDG*

"Unfortunately, the market developed like this. The banks focused on growth and the offers are commodity products by now, where the price often is the only distinguishing feature. This led to a price spiral leaving not much potential for generating revenue. A turning point might be reached now as some banks started charging fees for former free services."

Consorsbank

Consumers currently are used to not paying for many services. Thus, it is perceived critically when banks start charging money or services that were free beforehand. At the same time, all banks interviewed support the perspective that customers are willing to pay for certain products and services, when there is a clear benefit such as time saving for them.

"I would say, the selection criteria for the checking account is the fee for any new customer, as well as a little goodie. I think, if a bank offers a certain range of services, the customer is willing to pay, but in general the direct bank customer is more price sensitive. However, this also depends on the customer segment. We test for which product feature the consumer would be willing to pay money. We observe that the older and wealthier customers are more open to pay fees, as long as the product offering provides a clear added value." *Consorsbank*

"It is difficult to charge money for information. [...]. It is possible to charge for services and additional information, but it has to create value for the customer." *Commerzbank*

As pointed out by the interviewee from Sparkasse Nürnberg, this spiral also occurs because only a few of the banks currently charge for certain services. The hypothesis is that, as soon as all banks start to charge money for certain services, there will be a mind shift within the customers.

"Currently customers are not willing to pay, but that will change as soon as all banks begin to charge fees." *Sparkasse Nürnberg*

Digitalization might bring the opportunity for alternative revenue streams. Making use of digital collected customer data can help to target offers better and by that increase the completion rate.

New revenue streams can also be created by offering new products and services that are not classical banking, but related content-wise.

"One has to observe how the business model is really influenced. The question is whether the bank only provides an online portal or if it offers truly digital solutions that might even be combined with other not banking services. In our case, this includes for instance invoice and order management. These are products and services that are not pure banking products, but that a similar and enable us to earn money, especially during the times of low interest." *Commerzbank*

The consultant who has been interviewed raised the perspective that banks have to shift their understanding away from specific products to the holistic consultation in certain living conditions of their customers that create added-value to the customers.

"Nobody nowadays has an understanding when banks charge money for very basic services, such as opening a bank account. Thus, with what do banks earn money? With the consultation within certain, maybe difficult living circumstances. In situations, where the consumer really needs an individual consultation service, where the customer relies on having a competent partner who supports him/her with complicated topics." *UDG*

Summarizing, digitalization can bring banks new revenue streams.

5.4.2. Cost Structure

The representation in costs that incur when running the business.

Digitalization currently requires large up-front investments to modernize IT systems, create new channels of customer interaction and acquire the needed know-how and companies. Retail banks want to achieve greater efficiency and cost saving through digitalization and are convinced that the up-front investments pay off in the long run. Digitalization could be a great enabler for all banks to reduce costs. Digital solutions empower companies to optimize their processes and make them more cost efficient.

"I think, in general, that all processes will be streamlined and automatized in order to decrease overall costs." *Consorsbank*

"We have communicated recently that we want to digitize 80 percent of our processes by 2020. This means that almost everything will be digitized, from the customer request to processing [...]. Many have a focus on digitizing processes, where it is more about cost decreases." *Commerzbank*

The interviewees often mentioned that branches are cost intensive assets. They aim to restructure the branch network and have more standardized and automated processes in the branches.

"We have a better cost structure, because we don't have any branches. Thus, we do not have this financial burden." *Consorsbank*

Furthermore, digitalization and changing customer expectations drive the interviewed companies to offer easier, less complicated products which in turn leads to reduced complexity costs.

"For our business model an adjusted product strategy is relevant. This means, we want to develop and offer an understandable product range which in turn decreases complexity costs for us." *Commerzbank*

Although digitalization is driven by the customers to a large extent, the opportunity to save costs is a motivator for banks to become more digital.

"To a certain extent, digitalization is also driven by us, in order for us to have the opportunity to save costs." *Sparkasse Nürnberg*

"They actively drive customers to use digital products and services through increasing the prices for analogue solutions." *UDG*

In summary, costs can be saved through digitalization.

Concluding from the empirical findings, it can be seen that digitalization has an impact on the nine elements of the BMC. The case study banks realized the need to holistically adapt their business model and are doing that in every element.

6. Analysis

The analysis follows the same structure as the empirical findings. It is also broken down into the nine elements of the BMC. Given the research purpose, which is to analyze the impact digitalization has on business models of retail banks, the most significant results and anticipated future changes are connected to theory. The analysis is concluded with the BMC as a graphic showing the most important impacts.

The retail banking industry experiences a phase of innovations pushed by changed customer expectations, technological driven FinTechs and companies from other industries. Digitalization already shows its effects in services such as online banking. However, disruptive forces together with customers who expect banks to be more digital urge the need to adapt the business model more drastically. The way digitalization impacts German retail banks is examined in the following.

6.1. Customer Interface

It can be said that digitalization has an impact on all aspects of the business model, but the customer interface changes the most. Atz & Bohlat (2016) stress that customers seek more digital solutions which are fast, always available, reliable and secure. The empirical study confirmed that customers value speed, high transparency and convenience in retail banking. Banks understood the demand for these factors and are trying to adapt their business model to meet their customers' requirements by providing all products and services online and making them more customer friendly. Hagberg, Sundstrom and Egels-Zandén (2016) point out that digitalization is triggered by changing customer behavior. Looking at the results from the case study, customers as well as retail banks push digitalization. Customers seek omni-channel and less complex solutions, whereas retail banks are trying to digitalize cost intensive services, such as counter service.

6.1.1. Customer Segments

Conclusions drawn from the empirical findings suggest that banks are aware that they have different customer segments with different behavior. Segments are classified around demographics and wealth criteria. The intensity of the customer service and interaction depends on the segment the customer belongs to. Digitalization has only a minor impact on the segmentation itself according to the results of the empirical findings. It rather influences the communication within the segments. Customers 50+ tend to use branch services more than digital savvy customers. This implies for the banks to communicate more personally via face-to-face with one segment and to provide the others innovative digital solutions.

It can be seen that different products are used by different customer segments. Retail banks understand that a customer who has several loans is more likely to show interest in loan products than shares.

In conclusion, digitalization is currently more seen as a communication tool with customers and not as a way to segment customers according to their willingness and openness for digital innovations. Due to its technological possibilities, digitalization brings the opportunity for banks to segment their customers in more homogenous groups and offer suitable solutions targeted to their needs.

6.1.2. Customer Relationship

The case study clearly shows that digitalization is accompanied with an increase in the importance of the customer. Digitalization pushes retail banks to think more customer centric and adapt their appearance, products, and ways of interaction accordingly. Customers demand higher efficiency, higher autonomy and higher convenience regarding bank services (Milkau und Bott, 2015). The changing demands lead to new ways of interaction between banks and its customers and the relationship has become less personal and more digital. Some authors argue that the physical distant interaction of banks and its clients through digital communication lead to volatile customer behavior (Kirchner & Beyer 2016). The empirical study shows that banks do notice a decrease of customer loyalty, but only to some extent.

Osterwalder and Pigneur (2010) see establishing a strong brand image, trust and personalization as ways of improving the customer relationship. Turning the table around and making use of

digitalization in the three areas mentioned by Osterwalder and Pigneur (2010), digitalization can help companies to achieve a good customer relationship.

Having a desirable brand image that is in alignment with the values of customers and offers them clear benefits compared to services from competitors helps to achieve a customer-lock in (Lünendonk, 2015b). Trust can be built up by taking care of the customer relationship via personal co-browsing or video interaction and motivates customers to stay with their bank. Personalization can be easier achieved in times of digitalization where big amounts of data are available and when used correctly, lead to offers tailored to individual's need. As Jakšič and Marinč (2015) mention, it is important to think customer centric when implementing digital solutions and adapt the pace to the readiness of customers to adapt them.

6.1.3. Channels

The empirical findings have shown that the channels retail banks and customers use to interact are changing due to the influence of digitalization. Digital channels such as online and mobile banking are offered and used more. Hagberg, Sundstrom and Egels-Zandén (2016) stress that new devices and mediums of communication changed customer practices. The case study clearly supports that assumption. More communication, exchange of information and advice happens through email, chats or video while the personal face to face interaction in branches decreases (Paul, 2015). Sia, Soh & Weill (2016) claim that the number of branches has decreased. Concluding from the empirical findings, the authors partly agree. It can be noted that the strategy of running branches changes due to the high costs. Some banks do reduce the numbers of branches, whereas others do not close any. It can be seen that face-to-face communication as a sales channel is still considered as important as digital communication by retail banks. However, the structure and appearance of the branches changes. Simple, cost and service intensive offers such as counter interactions need to be digitalized. The strategy of branches should be to provide intensive advisor service for special issues. By educating customers to use online banking, and other automated channels, retail banks try to eliminate costs. Less service personnel on counters is required as most of the payment transactions can be done electronically. More specialized advisors are needed, who assist customers with more complex products such as loans. Customers still seek personal advice in branches when deciding about big credits to be reaffirmed that they are making the right decision. Trust in and confirmation about the suitability of the product are reasons why customers go to branches

rather than getting information about products. This goes along with the finding that customers inform themselves online, but purchase still happens offline. When seeking face-to-face interaction, customers are well informed through online information. Through the availability of product specific details online, customers have greater transparency and a higher degree of empowerment. The information asymmetry between bank advisor and customer decreases which leads to more equal negotiations. Customers usually inform themselves online, but purchase complex products offline in face-to-face interaction. Pure online banks are trying to make up for the lack of branches by offering more personal interaction using digital channels such as videoconference or desktop sharing.

By offering various channels of interaction, the customer touchpoints change. As Nitescu (2016) stated, flawless multi-channel interaction needs to be guaranteed to customers. Concluding from the case study, most retail banks already use a multi-channel approach and started the process of implementing omni-channel interaction (Lünendock, 2015b). They face the challenge of offering the whole product portfolio at any channel no matter if digital or offline without any channel breaks. By having an omni-channel approach banks can satisfy the need for higher service quality, permanent availability, speed and communication (Paul, 2015).

The analysis of the empirical data shows, that the customer interface pillar of the BMC is highly relevant to face the challenges of digitalization.

6.2. Product

Substantial changes induced by digitalization can be seen within the product pillar of the BMC. Products and services need to be available anytime, anywhere and at any channel. The empirical findings show, that banks react accordingly and reduced the number and complexity of products to make autonomous banking easier from the customer perspective. The product portfolio was diminished by niche products due to the desire of customers to be able to have access to the whole product portfolio on digital channels. All products need to be easy enough to understand, so that they can be used from any channel. Otherwise, an omni-channel approach without breaks does not succeed and embrace its full potential.

6.2.1. Value Proposition

Jakšič and Marinč (2015) take the view that banks are still needed and will not diminish all together but need to adapt quickly to the changing market conditions and the threat of competitors. The results from the case study support that view. Retail banks are still needed even though their value proposition changes towards more digital business models. In the case study, it was communicated that the business model needs to be transformed towards a digital, technological enterprise. Jakšič and Marinč (2015) as well as Nitescu (2016) point out that the role of the bank does not necessarily change but customer expectations increase. The authors interpret this statement as the value proposition of banks remains the same and agree that customer expectations change. Contradicting Nitescu's (2016) view on the role of retail banks and deducing from the case study, the authors assess changes in the role of retail banks as likely. The rather standardized and pure online payment products are threatened by FinTechs and Gafas. According to Osterwalder and Pigneur (2010) companies differentiate themselves by the value proposition. The authors are therefore convinced that the role of banks needs to change to provide customers with added-value compared to FinTechs or Gafas. Through the increasing amount of services that are offered by third parties, banks face the risk of losing their role as an intermediary and direct customer contact. Therefore, retail banks do not only need to offer customers pure payment and banking offers, but also assist the customers in any life situation with the right combination of banking and insurance products as well as other services that are tailored to individual needs.

6.3. Infrastructure Management

As seen in chapter 6.1, the customer interface is heavily influenced by digitalization from the usage of new channels to less personal relationships. Since the interaction with customers on the front-end changes, the internal, back-office processes need to change accordingly. It is often the case that digitalization is not implemented holistically and with a silo mentality. That means projects with customer touch points are pushed at a faster pace than back-office topics. This leads to a different level of digital maturity between front and back-office processes.

6.3.1. Key Resources

According to Osterwalder and Pigneur (2010) key resources can be classified into physical, financial, intellectual and human. The impact of digitalization can be seen on each category, but varies on the degree.

Physical resources are impacted by the digitalization mainly by the need to update existing IT systems to later versions that support modern solutions such as real time transactions. Atzler (2016) points out the urgent need of retail banks to invest in their IT system. Otherwise, established retail banks with outdated IT systems lose the competitive race against companies with modern and flexible systems that can react faster to changing customer demands and adapt to new innovations.

Financial resources are needed to push digital transformation forward. The modernization of IT systems requires big investments. More information about the impacts of digitalization in the financials of banks is stated in chapter 6.4.

Milkau and Bott (2015) discuss the usage of data in the retail banking industry. Concluding from the case study, intellectual resources in form of intelligent data analysis becomes more important. Due to the increased usage of digital channels, retail banks have a large amount of data from customers but currently do not convert them into Smart Data. This creates a potential opportunity to make use of data for targeted offers as long as it complies with data protection regulations. Also, digitalization caused greater transparency for customers through tools such as comparison sites. More information can be found online and is not exclusively available for bank advisors anymore.

Concerning human resources, the empirical findings show that employees need to be trained and educated about the changes triggered by digitalization. In some organizations, there is still reluctance against digital changes. The ability and willingness of employees to adapt is limited. Therefore, banks need to actively initiate change management processes for their employees. Moreover, digitalization requires new skill sets and very up-to-date know-how. External experts such as consultants from UDG as well as internally employed people working in the field of digitalization are in high demand.

6.3.2. Key Activities

Digitalization influences front-office processes as well as back-office activities. Front-office processes such as payment transactions and the trading of securities have already become more digital. The next step for retail banks is to digitalize back-office processes to achieve greater efficiency and develop a holistic digitalization strategy for any kind of processes.

When digitalizing processes, they need to be agile and flexible to be able to quickly react and implement new products, services and offers (Lünendonk, 2015b). The empirical findings showed, that retail banks do not have their main focus on key activities. Instead, they develop accordingly with implemented changes in other areas of the BMC.

6.3.3. Key Partnerships

Jakšič and Marinč (2015) as well as Vasiljeva and Lukanova (2016) are convinced that regulations slow down the innovation process of banks. Sia, Soh and Weill (2016) hold the same view, but mention old IT and heavy compliance as additional factors for the less innovative spirit in banks. The previously mentioned authors recommend making use of partnerships with more flexible and digital advanced FinTechs. The empirical findings show that retail banks recognized the high potential of entering partnerships with FinTechs, as they all have strategic alliances, joint ventures or sponsored innovation hubs. Banks form partnership for gaining quick access to new technologies and know-how in very specialized areas. Furthermore, it was communicated that inter- as well as intra-industry partnerships are likely be formed to provide the customer with more extensive service offers.

6.4. Financial Aspects

Digitalization impacts the cash flow generation of retail banks. Revenue streams as well as cost structure change. Banks need to find new ways of generating profit as well as working more cost efficiently.

6.4.1. Revenue Streams

Kirchner and Beyer (2016) describe a chain of effects started by digitalization. Digitalization increases the competition through innovation and technological progress which causes the reorganization of players in the market. The market restructuring leads to new ways of generating profit. Concluding from the case study, retail banks look for new ways of generating revenue streams that customers are willing to pay for. Customers receive free services from companies such as gafa, and expect the same from simple payment transactions. They are very price sensitive and are not willing to accept fees. Banks on the other side experience profit pressure from the low interest phase. *Prima facie*, digitalization challenges banks to generate revenue streams, but *secunda facie* profit can be generated in new ways. Making use of customer data to offer outstanding and individualized service increases the willingness of customers to pay for services.

6.4.2. Cost Structure

Hitt and Brynjolfsson (2000) see the potential of reducing costs through the digitalization of processes. Retail banks with branches have high expenditures of maintaining the branch network. Consequently, the value proposition of several banks has changed. Offers using self-service devices or online and mobile banking units have increased whereas the number of branches decreases. The underlying logic is to downsize cost intensive services at bank counters. By digitalizing such services, they aim to offer consultation intensive services and products at branches, for which they can charge fees.

Becoming more digital requires high investments in IT systems, know-how and change of management processes. The prevalent opinion in the case study revealed that retail banks are convinced that the investments are going to pay off in the future by achieving greater efficiency and higher customer satisfaction.

6.5. Business Model of Retail Banks

Figure 6 summarizes the impacts of digitalization on the business model of German retail banks.

<p><u>Key Partnerships</u></p> <ul style="list-style-type: none"> Partnerships with FinTechs Get access to new technologies and know-how Inter-industry and intra-industry partnerships are likely 	<p><u>Key Activities</u></p> <ul style="list-style-type: none"> holistic approach for digitalization Agile and flexible processes Alignment of front and back-office process 	<p><u>Value Proposition</u></p> <ul style="list-style-type: none"> Transformation towards a digital technological enterprise Solutions for any life situations less complex and reduced amount of products Enlargement of service offer with non banking products 	<p><u>Customer Relationship</u></p> <ul style="list-style-type: none"> Increase customer centration Demand from customers for higher autonomy, efficiency and convenience Decreasing customer loyalty 	<p><u>Channels</u></p> <ul style="list-style-type: none"> More digital omni-channel decrease and restructuring of branches increase of mobile devices Decrease of information asymmetry New touchpoints
	<p><u>Key Resources</u></p> <ul style="list-style-type: none"> Up-to-date IT Systems Human capital Smart Data Analytics 		<p><u>Customer Segments</u></p> <ul style="list-style-type: none"> Demographics and wealth No use of digital criteria for segmentation 	
<p><u>Revenue Streams</u></p> <ul style="list-style-type: none"> Price sensitive customers Customers expect digital services to be for free New revenue streams need to be developed 			<p><u>Cost Structure</u></p> <ul style="list-style-type: none"> Potential for cost reduction and higher efficiency through digitalization Large up-front investments in digital transformation are needed 	

Figure 6: Business Model Canvas applied to German Retail Banks (created by the authors)

The analysis clearly shows that digitalization impacts the business model of retail banks. The business models of retail banks are under pressure to adapt to the current market developments. Many banks have realized the need to change and are acting accordingly. All of the nine elements of the BMC are affected, but the customer interface, and respectively the processes change the most in the era of digitalization. As anticipated in chapter 2.2, a digital strategy is of urgent need to plan and ensure a holistic adaptation in the business model.

7. Discussion and conclusion

7.1. Discussion

The retail banking industry is subject to several changes of major importance. Distinct developments such as new regulations, digitalization and changing customer behavior evolve over time. Such changes in the market can make existing business models quickly obsolete and less profitable. Therefore, this study aims to examine the impacts of digitalization on retail banks using the BMC. The following research question was asked:

How does digitalization influence the business model of retail banks?

It can clearly be seen that digitalization influences the business model of banks in various ways. To draw a conclusion, a literature review about digitalization, strategy and business models was conducted. Osterwalder and Pigneur's (2010) BMC was used to examine the impact of digitalization on retail banks. Empirical results from a qualitative, multiple-case study were used to find out the current developments on the German retail banking market. The findings show, that retail banks have realized the need to adapt their business model to become more digital. They take actions in each of the nine elements of the BMC, which are described in detail in chapter 6. The main results are discussed in the following.

Out of the four pillars, the customer interface pillar is influenced the most by digitalization. The way banks and customers interact and their relationship changes. The perspective and demands of the customer becomes more important. Banks needs to think more customer-centric because customers value simple, but personalized solutions for certain life circumstances. Due to factors such as higher transparency and information available online, customer loyalty has become more volatile. Achieving a customer lock-in through actions such as tailored loyalty programs can help to hold customers. The channels of interaction become less physical and more digital, 24/7 availability from any device as well as speed in communication are valued by customers. Digitalization is an ongoing process and thinking from the customer perspective is important. Additionally, trust continues to be a highly relevant aspect within the customer relationship. Thus, banks have to focus on that factor within both, digital and analogue channels. To

guarantee a good customer experience the customer journey with all channels and touchpoints needs to be optimized, including a smooth transition between the channels.

Customers inform themselves online and seek information about products on websites. This influences the product portfolio. Firstly, information about products need to be available online and at all used channels. Secondly, the complexity of products needs to be reduced, so consumers can understand them when reading online. Lastly, products need to be personalized and tailored to specific needs of customers. This potentially implies having cross-industrial products which combines banking, insurance and mobile contracts, as an example. The value proposition needs to be expanded to a cross-industrial product portfolio, to provide customers with added-value.

Changes in the customer interface require fast adaptation in the infrastructure management. Processes, partnerships and activities are influenced by digitalization. Front-office processes of retail banks are at an advanced level, while back-office processes need to be quickly digitalized. When digitalizing processes, it is essential that it is implemented holistically and not with a silo mentality. Front and back-office as well as channels must be interlinked in an intelligent manner and adhere to the latest cyber security standards. Thereby, it is of urgent need to have up-to-date IT systems that support rapid technological advancements. Intra- and inter-industry partnerships become more important. Strategic alliances with innovative Start-ups to adapt their technology as well as with other established companies to offer industry wide compatible products are of strategic relevance. Only if retail banks collaborate in developing new digital platforms, they will attract enough lead users (Lünendonk, 2015b). Internal resources, especially employees, need to be considered and trained to support the digital transformation. Apart from technical knowledge it is crucial for companies to also approach the mind-set of its employees. It is important that the majority of the organization understands digitalization and digital transformation as an opportunity, not as a threat. This requires well designed change management processes that touch upon various levels of the organization.

The revenue streams as well as the cost structure is impacted by various factors, but also digitalization. Revenue streams decrease due to the low-interest phase. Customers are very price sensitive and are only willing to pay for services if they add real value. Digitalization offers the opportunity of generating new revenue streams, if customer data is used in a smart way. It can be used to satisfy the individual needs of customers as well as making sales and marketing activities more efficient. By digitalizing and automating processes retail banks aim to achieve

higher efficiency and cut costs. At the same time, the digital transformation requires large up-front investments into new IT Systems, innovation labs, human capital and partnerships.

Summarizing, banks realized the potential of digitalization and are in the process of adapting their business models. Speed, innovativeness and a customer focus are needed to master the transformation successfully.

Based on the previous discussion, new implications for banks and their business model could evolve. Firstly, artificial intelligent might bring major changes to the infrastructure management. Secondly, social media banking is likely to gain increasing attention in the customer interface pillar.

A further interesting trend with future potential is robo advice. Robo advice refers to a technical development where investment and advisory services are not provided by a service employee, but by computer algorithms. Recommendations regarding investments, but also more simple questions can be solved, for instance, via a chat function. This provides the opportunity for banks to reduce costs and achieve higher efficiency. This price advantage can be transferred to the customer to keep fees at a minimal level. Besides the cost advantages, robo advice has additional benefits. Banks can guarantee their customers a high level of service and 24/7 availability. Additionally, robo advice does not only provide the opportunity for banks to market their products via new channels, but especially gives the chance for banks to continue their role as intermediaries and keep the direct contact to customers. Robo advice, however, is not to be seen as a tool that revolutionizes the banking industry, but that triggers an evolutionary advancement of the financial services industry.

The authors think that social media banking will disrupt the banking industry. One app with many functions can act as a central platform. This app might connect already existing functions such as instant messaging and video calls with third party applications. Incorporating functions for peer to peer transactions as well as peer to business seems reasonable. Also, third party services such as ordering and paying for taxis, or preordering and purchasing dishes through digital menus from restaurants can be connected. The platform will not only be restricted to national boundaries. Such a central platform increases the convenience for customers as they only need one account and have a central location for all services. Banks can make use of a first mover advantage to not lose the direct customer interaction and try to collaborate with each

other or digital tech companies that already have thousands of users or focus on payment solutions that can easily be connected to the central platform.

7.2. Suggestions for future research

As stated previously, the research within this paper provides a qualitative perspective on banking, digitalization and business models. This approach provided the authors with various insights from the cases. It would be interesting to test the results with a quantitative approach. As all banks judged their own performance in becoming more digitally advanced, it would be interesting to see quantified data on the actual digital readiness of the retail banking industry and its individual members.

This study focused on examining the perspective of employees of retail banks that work in the field of digitalization. Another noteworthy aspect to consider for future researchers would be the perspective of customers as well as of employees from different departments. It would provide the opportunity to contribute to a balanced perspective on the situation covering impressions by its customers and many different employees.

Digitalization clearly already left an impact on retail banking. As many banks also operate in the b2b banking, it would be remarkable to study how b2b banking is influenced by digitalization.

During the study, the authors noted that the customer interface pillar of the business model has a major role in the process of digital transformation. It would therefore be interesting for future research to test if the BMC need to be further developed for digital operating companies.

7.3. Conclusion

To withstand the competitive forces and the various challenges retail banks face, a holistic digitalization strategy is one approach for future success. The digitalization strategy needs to plan how the business model needs to adapt to make a good implementation possible. Various areas from the customer interface, to resources and processes as well as the financials of banks are influenced by digitalization and need to be adapted.

Retail banks realized that there is a need for action to have more digital business models and invest heavily in it. As the era of digitalization is happening now, the era of the customer will start soon.

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Appendix A

Interview Guide

INTRODUCTION AND BACKGROUND

- Could you tell us more about your professional background?
 - Why have you decided to work for a bank?
 - Which touchpoints do you have with digitalization in your business life?
 - What is the core business of your company?
 - How does xxx differ itself from its competitors
-

BUSINESS MODEL AND DIGITALISATION

- What is your company's view on digitalization?
 - Did retail banking change in recent years?
 - Has your bank become more digital in recent years?
 1. *If yes, could you elaborate more detailed on **how** it changed?*
 - Why have you decided to be more digital?
 - Is offering digital banking a must to compete in the industry?
 2. *how does this affect you?*
 - What parts of your company were especially affected by digitalization
 3. *customer, products, processes*
-

OFFERING

- Did your products and services change?
 1. *(if yes) how did you the respective product and service change?*
- How did you find out which products and services need to be changed?

CUSTOMER

- Did your customer's expectation and demand change?
- Did the relationship and communication to your customers change?
- Do you use different/ new approaches to interact with your customers compared to 5 or 10 years ago?
- Is digital banking accepted within your customers?
- Who are your target customers?
 1. *Have your target customers changed?*
- What motivates customers to use your bank?
- What digital banking solutions do you offer your customers?
- I assume, BNP by now has a solid online portfolio. How do you differ yourself from complete direct banks such as ING direct, hello bank?
- What is your customer value proposition to compete with them ?
- Do you have a positive business case for digitalization at the moment, is it already worth it or do you consider it more important for the future to then be able to have a strong customer retention/ loyalty?
- Digitalization is also a lot about transparency ; do you want to be more transparent for them in terms of how they spend their money etc.

INFRASTRUCTURE

- Which specific actions did your bank take to be more digital?
- Did the key resources and competencies change in the process of digitizing your company?
- Is digitalization an aspect of your strategy
- Is digitalization supported by top management?
- Do you develop the competencies required for the digital transformation in house, or do you purchase them outside?
- Did your internal processes change?
 2. *If yes, which processes changed?*

3. *If yes, how did those processes changed*
 - Did you start collaborations with new partners?
 4. *If yes, with whom do you collaborate?*
 5. *Do you perceive this collaboration as an opportunity with your company*
 - Have the key activities within the company changed?
-

COSTS

- Is it beneficial for your company to be digital?
- Are your customers ready to pay for digital solutions?
- Is digital banking cheaper for your bank?

Appendix B

Matrix for Data Analysis

	Customer Interface			Product	Infrastructure Mgmt			Financial Aspects	
Company	Segments	<u>Relationships</u>	Channels	Value Proposition	Resources	<u>Activities</u>	Partners	<u>Revenues Streams</u>	<u>Costs</u>
Consorsbank	Bei der Direktbank sind die Kundenstrukturen gar nicht so vom Faktor „Digital“ sondern vom Produkt abhängig Es gibt keinen klassischen Direktbank-Kunden; die Altersstruktur ist querbeet, es gibt eher eine Segmentierung nach Produkten.	Wir sind es gewohnt Kunden zu haben, die sehr daran gewöhnt sind, alles selber zu machen Um Vertrauen aufzubauen sieht die Consorsbank die Marke als sehr wichtig; d.h. durch ein starke Marke hat eine Bank zunächst einmal einen Vertrauensvorsprung im <u>Vergl.</u> zum FT	Der Kunde möchte Erreichbarkeit 24/7 <u>Hybrid</u> Kunden; Kunden die online <u>researchen</u> und offline <u>purchases</u> , bzw. bei komplizierteren Produkten in die Filiale gehen Es ist eigentlich nicht mehr notwendig, aber die Kunden haben aus irgendeinem Grund immer noch eine Vorliebe für Personen	Von Trading und Wertpapiergeschäft zur Inkludierung von B2B Kunden D.h. die Bank bewegt sich zu einer digitalen <u>Vollbank</u> , wo derzeit nur das Kreditgeschäft fehlt Innovatives und modernes Leistungsangebot gegenüber den Filialbanken Viele Services und Produkte können bei uns schon lange komplett online abgeschlossen werden		Backend Prozesse müssen noch verbessert werden, intern gibt es <u>noch</u> <u>sch</u> viele manuelle Prozesse	Check 24; 70% <u>der Konsumenten</u> <u>kredite</u> werden darüber verkauft Verschiedene Kooperationen mit FinTechs	Wenn bestimmte Leistungen angeboten werden ist der Kunde auch bereit zu zahlen, aber grundsätzlich sind sie eher <u>presensitiver</u>	Wir haben eine bessere Kostenstruktur, weil wir eben keine Filialen haben Die Prozesse müssen schlanker und digitaler gemacht werden um von der <u>Kostenstruktur herunterzukommen</u> und alles real time fähig zu machen