

Banks in Times of FinTechs - A Shift in Behaviour in the Context of Innovation and Disruptive Technologies

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Helga Weik

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Kurzfassung

Die als FinTechs bekannten Finanztechnologieunternehmen prägen Bankdienstleistungen und -produkte. Sie setzen Banken einem neuen Wettbewerb aus. Die Auswirkungen der Digitalisierung und FinTechs auf Geschäftsmodelle der österreichischen Retailbanken müssen aufgrund der begrenzten Literatur genauer analysiert werden. Ziel dieser Arbeit ist es, Geschäftsfelder in österreichischen Retailbanken zu identifizieren, die unter dem Einfluss von Digitalisierung und FinTechs einen Strukturwandel erfahren haben und aus diesen Erkenntnissen Empfehlungen abzuleiten.

Der theoretische Teil der Masterarbeit bestand aus einer systematischen Literaturrecherche, die sich in drei Phasen Recherche, Beschaffung und Literaturverwertung gliederte. Der empirische Teil wurde mittels einer qualitativen Forschungsmethode auf Basis von halbstrukturierten Experteninterviews mit Experten aus österreichischen Retailbanken durchgeführt. Die Zielgruppe umfasste zwei große und eine kleine Bank, basierend auf deren Bilanzsummen im Jahr 2021. Die Ergebnisse werden in einer neuen Version des Business Model Canvas präsentiert, in welches Erkenntnisse aus der Literatur einfließen, erweitert um Experten Input.

Die Ergebnisse der Literaturrecherche und der empirischen Analyse stimmen überein. Sie zeigen, dass Digitalisierung und FinTechs den meisten Einfluss auf die Segmente Nutzenversprechen, Schlüsselaktivitäten, Schlüsselpartner und Kanäle haben. Die befragten Retailbanken sind sich ihrer Vorteile im Hinblick auf großen Kundenstamm und Vertrauen bewusst. Auch IT-Systeme sind Veränderungsdruck ausgesetzt. Laut Experten müssen Maßnahmen zur Einführung agiler Arbeitsmethoden und eine intensive Zusammenarbeit zwischen IT und Fachabteilungen der Bank ergriffen werden. Digitalisierung und Zusammenarbeit mit FinTechs muss als wesentlicher Ansatz von Banken gesehen werden, um wettbewerbsfähig zu bleiben und Finanzprodukte anzubieten.

Im Hinblick auf die Masterarbeit kann die neu ausgearbeitete Version des Business Model Canvas Frameworks als Instrument zur Analyse des Strukturwandels, zur Erkennung von Beziehungen und zur Prioritätensetzung in Retailbanken verwendet werden. Im Hinblick auf künftige Arbeiten kann die Analyse von FinTech- oder Bankmitarbeitern Perspektive dazu beitragen, das Business Model Canvas zu erweitern.

Schlüsselwörter: Retail Banking, FinTech, Business Model, Business Model Canvas, Business Model Framework, Digitalisierung



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Abstract

Financial technology companies, so-called FinTechs, are disrupting markets for financial services and products. They are exposing banks to new competition and threats. The impact of digitalisation in general and FinTechs in particular on the business models of Austrian retail banks needs to be analysed in more detail due to limited literature in this area. The aim of this thesis is to identify business segments in Austrian retail banks that have undergone a structural change under the influence of digitalisation and FinTechs and to derive recommendations out of these findings.

The theoretical part of the master thesis consisted of a systematic literature research, which was divided into the three phases of research, acquisition and literature utilisation. The empirical part of the thesis was conducted using a qualitative research method based on semi-structured expert interviews with representatives of three Austrian retail banks. The target group included two large and one small bank based on their balance sheet totals in 2021. The results are presented in a new, elaborated version of the Business Model Canvas framework, which incorporates the findings from the literature, extended with input from experts.

The results of the literature review and the empirical analysis are consistent. They show that digitalisation and FinTechs have the most influence on the segments value proposition, key activities, key partners and channels. But other segments have also, experienced a structural change impacting the way banks conduct their business.

The retail banks surveyed are aware of their advantages in terms of a large customer base and trust, but also, of the upcoming changes in their IT systems. According to experts, measures must be taken to introduce agile working methods and intensive cooperation between IT and bank's business departments, and the attention of management. Digitalisation and cooperation with FinTechs must be seen as an essential approach for large banks to remain competitive and provide new products and services to their customers.

With regard to the master thesis the new elaborated version of Business Model Canvas framework can be used as a tool to analyse and examine structural change, to recognise relationships and setting priorities in retail banks. In terms of future work, analysing the views of FinTech or bank employees can help to extend the Business Model Canvas.

Key words: Retail Banking, FinTech, Business Model, Business Model Canvas, Business Model Framework, Digitalisation



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CHAPTER 1

Introduction

This chapter presents the introduction, problem definition and an overview of the state of the art. The underlying motivation, the research questions raised and the methodology chosen to answer the defined questions are also, explained. An overview of the content of each chapter concludes Chapter 1.

1.1 Introduction and Problem Statement

The banking sector is undergoing changes due to digital transformation [CB16]. The technological progress and the impact of financial technology (FinTechs) companies present challenges for the bank market environment and established financial structures [DSAH14].

The effects of technology-related changes in traditional business models have been seen in many industries such as music, film and telecommunications. Products and services from above mentioned traditional industries have undergone a constant change since the year 2000, where new products and services often have driven established ones off the market [DSAH14].

Digitalisation has also, reached the financial sector, FinTechs appeared and the appearance of the financial sector in the digital age began to change. The main characteristic of FinTechs are the financial products and services, which are built around technological innovation. FinTechs already offer products in different areas such as payments, asset management, financing and lending sector that build main product segments of retail banks as well [DHSW16]. They show that almost all financial services can be processed digitally and that completely new business areas such as crowdfunding can be created [Pwc17].

Many studies like [PR18] or [KPM20] point out that the progress of investments in FinTechs worldwide from 2012 to the first quarter in 2018 was increasing. From 8.90

million USD in 2012 to approximately 70 million USD in the year 2015. The years 2016 and 2017 can be treated as weak years. Compared to the results of 2018, the year 2019 was characterised by lower investments. Nevertheless, investments in FinTech companies remained more than double every year prior to 2018. These results highlight the importance of FinTechs in the financial sector which led to an increase in literature research on this topic [KM19].

In Austria the volume of FinTech transactions is estimated to increase over the next years until 2025 up to 32.5 billions EUR in digital payments¹, 2.4 billions EUR in the segment personal finance², 39.9 billions EUR in lending segment³ and 81.9 billions EUR in financing segment⁴.

FinTechs are known as innovation drivers in the financial sector, therefore, they are predicted to play a key role in banking sector [DSAH14]. Studies [PR18], [DSAH14] and [KPM20] show how rapidly FinTechs are gaining market share and therefore, it would be negligent not to look at the innovations and business models of FinTechs from a banking perspective.

Until the 1980s banks were the driving forces in innovation. Automated teller machines, debit and credit cards, online and mobile banking are some of major achievements in the banking sector [HLH⁺17]. Achievements that are taken for granted today were important innovations for the time in which they were introduced. They had a significant impact on the way business was done.

Even many years after the financial crisis banks are still challenged with low margins, various legal requirements, the rapid pace of digitalisation and the appearance of FinTech companies. According to a study conducted by the consulting company PwC [Pwc17], 88% of participating banks indicated that they are worried that part of their business is at risk to be taken over by FinTech companies.

In addition to the above-mentioned changes in the market environment due to digitalisation and technological innovation, there is also, a change in customer behaviour which presents banks with the challenge of reacting to it [KPM16], [KS19]. Big Tech companies like Google, Apple, Facebook, Amazon (known as GAFA) have changed the way customers act and conduct business. A shift in customer behaviour can be observed from a consuming and passive customer to an active designer of products and services [Fie12]. With respect to customer profiles according to a study from Koehler [KS19], Austrian banking customers including generation Y (born between the early 1980s and the late 1990s) and Z (born between the 1997 and 2012) have diverse perceptions: digital

¹<https://de.statista.com/prognosen/712892/fintech-transaktionsvolumen-digital-payments-in-oesterreich>, accessed in December 2022

²<https://de.statista.com/prognosen/712926/fintech-transaktionsvolumen-personal-finance-in-oesterreich>, accessed in December 2022

³<https://de.statista.com/prognosen/712867/fintech-transaktionsvolumen-alternative-lending-in-oesterreich>, accessed in December 2022

⁴<https://de.statista.com/prognosen/712909/fintech-transaktionsvolumen-alternative-financing-in-oesterreich>, accessed in December 2022

customers prefer to conduct their business exclusively online, analogue customers prefer to do their banking at the branch and hybrid customers who use digital channels and the bank branch depending on the situation they need to conduct their business. According to statements of different Austrian bank managers this change is noticeable in the way customers conduct business with their banks and customer expectations on a banks products and services

Disruptive business models in the financial area have become an influential factor for retail banking. On-boarding processes are changing: a few years ago customers had to visit a branch to open an account. These days there are market participants offering this service within a few minutes without the need of visiting a branch [N2619], [fut17b]. Another example comes from the payment and cards business area offered by Austrian retail banks, where customers do not necessarily need a physical card to pay with. They can use devices like their smart watch, mobile phones and Apple or Google wallets to conducts payments [Flo19]. COVID-19 triggered changes in business processes across all consumer-focused industries which is not directly related to FinTech but indirectly with scale of digitalisation in retail banking sector [ROS21].

The conclusion drawn from existing challenges, as listed above, is that traditional financial intermediaries have to deal with innovative technology and services. The impact of new entrants such as FinTech companies, technological progress and also, changes in customer behaviour are affecting bank business models. In particular, retail banks that focus on customer relationship and the provision of services to a larger number of people are under pressure to respond to above mentioned challenges. Due to the standardised products and services stated earlier, retail banking can be regarded as the most important application area for FinTech solutions [DHSW16], [MG17]. The growing importance of FinTechs companies in the financial market can be seen as a challenging factor in the Austrian retail banking sector. FinTech-related effects in Austrian retail banks business models build an area that needs more investigation. According to the Austrian retail banking sector, there is no questions of whether there is a ongoing change in bank core business areas and business model. But the impact FinTechs have on Austrian retail banks business model and which core business areas in banking were transformed by the influence of FinTechs needs more research. Furthermore, there is need to identify which core business areas can only be maintained through a relationship between banks and FinTechs. Changes in business model structure of Austrian retail banks as a result of FinTechs impact needs to be analysed.

Regarding the German retail bank market there are various studies that handle business model innovation or threats FinTechs pose to German banks [DHSW16],[Klo17], [MG17]. But it seems to be a lack in analysis of the Austrian retail bank sector and respective business model transformations.

As analysed before the challenging impact of FinTechs and digitalisation on banks core business areas and changes in business models are already evident. The motivation to write this thesis consists of two components: first, even many years after the financial crisis banks are still challenged with the rapid pace of digitalisation and the challenging impact

of FinTechs. Second, as mentioned earlier FinTechs gained more interest in literature, but the theoretical examination of the effect of FinTechs or technology companies on Austrian retail banking business models is still sparse. After a founded literature research by defined key words such as Retail Bank, FinTech, Business Model and Business Model Canvas, no comparable elaboration of the segmentation of the impact of FinTechs on business model seen from bank perspective, was found for the Austrian retail banking sector.

1.2 Target and Research Questions

As mentioned in the section above, banks and their business models are facing pressure from various sources. The aim of this master thesis is to examine which impact FinTechs in particular and Digitalisation in general have on the business model in the Austrian retail banking sector.

Furthermore, this thesis aims to identify business segments in retail banking that have undergone a structural change under the influence of FinTech, digitalisation and technological progress. The thesis tends to identify business segments where the influence of FinTechs is noticeable with the help of the business model canvas (BMC) from Osterwalder[OP10]. This framework seems to be suitable to cluster the impact of FinTechs and Digitalisation. Another aspect is if any possible recommendation for Austrian retail banks can be conceived for Bank to analyse the scale of transformation on their business.

According to the presented goal of the thesis and based on an overview from the literature research below listed questions were formulated:

1. Which core business areas can be identified in Austrian retail banks that have undergone a structural change by enabling the use of FinTech offered solutions?
2. What are strategic orientations of traditional Austrian banks towards FinTechs currently and which recommendation can be conceived for the future for the Austrian retail banking sector?

Above stated questions are noteworthy to discuss for several reasons. Firstly, FinTechs are an omnipresent influence nowadays that impact among others the banking sector. Therefore, it is no question if but how and which core business areas in the Austrian retail banking sector are impacted by FinTechs.

With the help of the segments provided in the BMC framework of Osterwalder, an analysis and a breakdown of the way the company is run can be made. This break down enables a more detailed analysis of FinTechs impact can be generated.

The results can help researchers to get an overview of the impact of FinTechs in Austrian retail banking and to develop frameworks for further analyses of structural changes in

Austrian retail banks. In addition, the results can help banks to analyse their strategy towards FinTechs or other technology companies and adjust it if necessary.

1.3 State of the Art

From the scientific point of view the changes in the financial world, the emergence of FinTech and impact on banking sector constitute an area of research that has been analysed in recent years, but is still not fully investigated. As stated in the introduction in Section 1.1 over the last years the rise of FinTechs has attracted much attention since they challenge banks and their traditional banking business models. Consequently, there has been an increase in the academic literature on the subject of retail banking business model transformation and the disruptive effect of digitalisation and FinTech influence, but there are still research gaps [KM19].

One important study in the German FinTech market comes from the authors Prof. Dr. Gregor Dorfleitner and Jun.-Prof. Dr. Lars Honruf [DHSW16]. The focus was laid on analysing and evaluating the German FinTech market during the years 2007 until 2015. The authors present a categorisation of FinTechs core business segments in: payments, financing, asset management and other FinTechs as shown in Figure 3.4. This categorisation is often used in the literature as the status quo and will be a starting point for further analysis and comparison between FinTech and Austrian retail bank core business segments. According to this study there can be observed a growing rate in business areas offered by FinTechs in Germany. The mentioned study predicts a cooperating relationship between banks and FinTechs in Germany [DHSW16].

Another research topic related to the influence of FinTechs on the Austrian banking sector focuses on FinTechs success factors and their relationship to each other from the perspective of innovation drivers, banks and public authorities [Ros19]. The essential success factors of FinTechs mentioned in the paper from Rosenauer [Ros19] are characterised by customer focus, time-to-market strategy in the product and service development and user experience. Furthermore, the study handles the relationship between FinTechs and banks in Austria. From FinTechs perspective there is willingness to cooperate with banks. On the other hand, from the perspective of the banks assessed, there is also, a willingness to cooperate, but banks continue to treat FinTechs as competitors. The impact and effect of regulative requirements like Payment Service Directive II (PSD2), is part of mentioned study. In his paper Rosenauer describes the impact of legal regulative in the Austrian banking sector as a chance for banks and FinTechs. According to this study, retail banking in Austria will gain little in importance in the future. Bank branches will lose importance, but will continue to exist. In the context of analysing the FinTech landscape in Austria, technological innovation such as blockchain will be a factor to revolutionise the finance sector [Ros19].

Due to the impact of technology traditional financial intermediaries had to react and this is faced in business models. The working paper conducted by Lorenz Knauseder analyses the connection of business model innovation and the banking industry by laying

the focus in six direct retail banks in Austria and Germany [Kna19]. A direct bank is defined as a branchless financial institution that offers banking functionalities through direct channels [Swo00]. The outcome of the study of Knauseder [Kna19] shows that the adaptive business model innovation (BMI) was found to be the most successful type of BMI used in Austria and Germany, followed by evolutionary and focused BMI.

Based on different FinTech interpretation in the literature, the authors Zavolokina, Dolata and Schwabe [ZDS16a], [ZDS16b] analysed the period 2012 to 2015 and derived a FinTech Framework. In this framework FinTechs are presented by three dimensions: an input which is the combination of technology, organization and money flow. The second dimension is mechanism, which describes the way FinTechs act in terms of create, improve, change, apply technology to finance and create competition on the market. The last dimension is called output, which encompasses the creation of new services, products, processes or business models. This framework can be treated as a starting point for the definition of the term "Fintech".

Referring to the relationship between banks and FinTechs, there are approaches among Austrian incumbent banks and FinTechs in form of invitation to third-party suppliers to participate or in form of partnership programmes to enable and develop new products targeting fields like payments, banking, branch of the future or data analytics [Aus19], [Ros19].

1.4 Methodological Approach

The methodological procedure for answering the scientific questions consists of several steps which will be presented in this section.

An essential part of the work will consist of a literature review [Sny19] to gather information and provide a theoretical basis of the defined research topic: investigating the influence of FinTechs in the Austrian retail banking sector and corresponding business models from a bank perspective.

The comprehensive literature research is based on the research method *systematic literature review*, which consists of: search, collection and utilization of literature [ESTJ15], [KC07], [OS10], [Sny19].

In the first phase of the literature review a research of pre defined terms will take place: Retail Banking, FinTech, Business Model, Business Model Canvas, Business Model Framework, Digitalisation. This is done to have a better an overview of above mentioned topics. The search will be conducted with English and German terms. Furthermore, for the research of scientific papers, publishing platforms such as ACM Digital Library, Elsevier ScienceDirect, SpringerLink will be used. Scientific journals and proceedings will also, be considered. Google Scholar and the Technical University library *Catalog Plus* will be used as well. Technical literature references, scientific publications and studies conducted by consulting companies such as Accenture, EY, Mckinsey and PwC will be included too. A pre-selection of the literature is done based on the title and

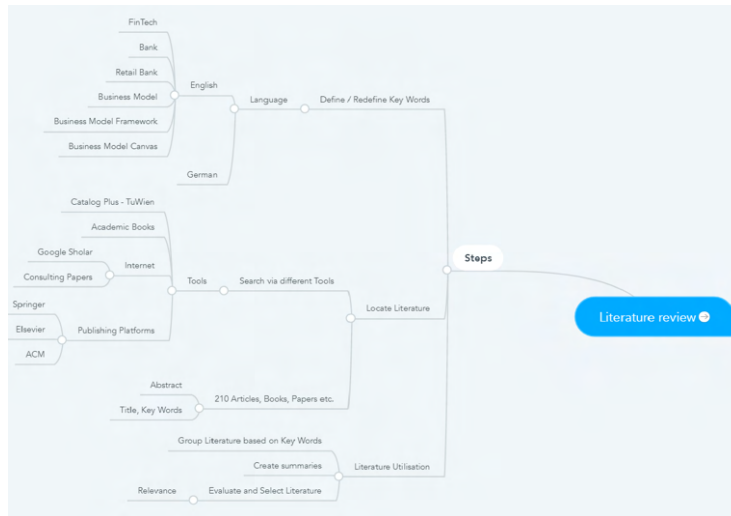


Figure 1.1: Literature Review Mind Map, own depiction based on [ESTJ15], [KC07],[OS10]

abstract of literature input in order to reduce the amount of input. The third phase of literature utilization and the report of results is based on a mind map to enable an appropriate systematic literature review according to defined research areas [KC07] as shown in Figure 1.1.

Within the literature research part the business model canvas (BMC) from Osterwalder [OP10] will be used to identify and cluster the impact of FinTechs and digitalisation on Austrian retail banking sector based on the structure this framework offers. At first this framework will be reviewed based on literature research and in a second steps it will be extended based on expert input from empirical part.

To gain more insight in Austrian retail banking sector expert interview will be conducted within the empirical part.

The empirical part of this thesis will consist of a qualitative research method [MK09] in form of semi structured expert interviews. Experts will be selected from Austrian retail banking sector. Another goal is to select banks in various asset categories and not to focus only on banks with the largest total assets to ensure diversity.

For the collection of the data, semi structured interviews will be conducted based on an interview guideline [BLM09], [Gal13]. The semi structured questions enable a flexible way to receive input and lead the conversation. Experts will be selected from different areas in the retail banking sector. An expert has to comply defined criteria such as be in a leading position at minimum 6 months in order to have representative input to the research area. After a preselection phase, contacting pre selected experts is the next step to follow. The participating experts will be pseudonymized.

To be able to answer the research question, it will be important to compare the results from the systematic literature research with insights gained from expert interviews according the effects of FinTechs on the business model of retail banks focusing on Austrian retail banks. The interview results will be appropriate to understand and interpret the model generated from the theoretical part and derive conclusions about the core banking segments that changed over the defined period and about the influence of Fintech or other technological companies.

Based on the nine building blocks of the BMC framework a better analysing and understanding of structural changes over the years can be presented.

As outcome of the master thesis an updated version of the Business Model Canvas framework [OP10] will be created that will incorporate inputs from literature research [Kna19], [NL14] and experts that can be used as a starting point of recommendations in the Austrian retail banking sector.

A detailed presentation of the specific methodological approach will be given in more detail in Chapter 4.

1.5 Structure of the Thesis

Chapter 1 gives an introduction to the topic with general information and state of the art, the target of the master thesis and methodological approach.

Chapter 2 focuses on banking area with the aim of giving a detailed overview of the Austrian banking structure and focusing on the retail banking area. To be able to discuss about digitalisation and its impact in the financial sector a categorisation of banks based on their core banking functions and business areas will be presented. Banking business models by focusing on the framework of the business models canvas in retail banking will be an important part to answer research questions. It will handle the digital transformation in the aspect of banking by focusing on important steps in structural digital change. Another aspect will be the customer behaviour by focusing on classifications of customers by some characteristics like attitudes to technology, preferred products and way of conducting financial business. Furthermore, as this master thesis aims to handle core business areas in the banking environment in this chapter the state of the art of business models will be presented. Business model framework and business model canvas will be part of the chapter as well.

Chapter 3 treats the rise of financial technology companies, the importance they gained in the financial industry and factors that leads to disruption. Beside the attempt to find a generally valid definition of the term FinTech, this chapters will analyse and categorise the new emerged business models with respect to their core competences in the Austrian market. The transformation FinTech initiated in the financial sector will be discussed in detail due to the high level of activity of FinTechs and the high investments.

Chapter 4 this chapter elaborates the research approach and describes the research design. The research method and how data collection will be conducted is another part

if this chapter. The chosen banks for conducting interviews will be presented in this chapter as well.

Chapter 5 this chapter will present the empirical findings based on the data gathered via expert interviews. Furthermore, there will be provided a categorization of the data gathered from expert interview based on the structure of the business model canvas. Within the structure of the Business Model Canvas framework results from the literature and empirical findings will be analysed and clustered.

Chapter 6 presents the most important findings by answering the research questions. In this chapter limitations will be discussed. Outlook and conclusion closes this chapter.

CHAPTER 2

Bank - Definitions and Trends

At first this chapter gives a definition of the term *bank* and analyses the different types of banks related to their core business segments. Furthermore, an overview of the banking sector in Austria will be provided by laying the focus on retail banking. Changes in the banking market environment present another area of study in this chapter. The Business Model Canvas Framework will be presented and used to identify how FinTechs and Digitalisation are influencing different areas in the Austrian retail banking sector. This chapter has the aim to present the state of the art in the banking sector, which serves as a basis for this master thesis to understand banks and influence of FinTechs.

2.1 Definition of Banks

This section focuses on presenting the main functions of banks. Based on the literature sources, the term bank can be defined as a financial institution that brings creditors and borrowers together in a simplified scheme. A bank can be seen as a link between clients or institutions that have capital and want to make money and clients or institutions that demand capital [HWPW13].

As presented in Figure 2.1, a bank has the role of a financial intermediary that receives capital as deposits from capital providers and provides capital to capital acquires as financial assets or loans [HWPW13]. Freixas and Rochet [FR08] give a similar definition of the term bank on the basis of the operational aspect, since they emphasise the role of financial institutions whose operational focus is on granting loans and attracting deposits from the general public. The prevailing view from the literature, one of the main tasks of the bank is related to liquidity transformation.

Being a bank requires the possession of a banking license and is associated with numerous regulatory requirements that must be met [AP16]. As mentioned in Chapter 1, the regulatory aspect in Austrian retail banking will not be handled in this master thesis.

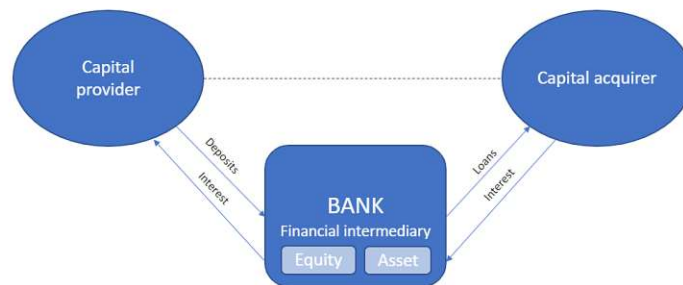


Figure 2.1: Function of a financial intermediary, own depiction based on [HWPW13]

2.2 Bank Core functions and bank types

After defining the term bank, the next step is to define the main functions of a bank according to bank types. Banks have an important role in the economy and society. The main components of every financial system are the financial markets consisting of money and financial intermediaries. In all countries there are regulations that define the functions that a bank can perform.

In the literature, a classification of functions of banking activities based on four categories can be found: **offering transfer and payment services, transformation of assets, risk management, processing of information and monitoring of clients** [CGM06].

From a microeconomic perspective, contemporary banking theory classifies banking functions into four groups: **payment transaction, investment, credit and customer service function** [FR08]. According to Freixas from all mentioned categories liquidity transformation can be regarded as one of the most important functions of banks.

The different function groups described lead to various types of banking. Hockmann [HT12] coined four bank types consisting of retail, wholesale or corporate, investment and private banking. All types evolved to meet different customer needs.

There are also, coarser categorizations in the literature. Röhrs for example, defines three segments of bank types, that will be present below in more detail[Röh08]:

- **Universal Bank:** is a bank that offers a wide range of services such as payments, savings, investments, lending and account management. In the macroeconomic context, these banks operate at the same time as investment banks too. Services are provided to a wide range of customer groups encompassing private and business customers.
- **Retail Bank:** are characterized by banking and payment products and essential financial services that require less support. Services are provided to a wide range of customer groups encompassing private and business customers.

- **Private Bank:** are characterized due offering individual banking services to a small range on high net worth customers.

According to Hartmann [HWPW13], universal banks conduct all banking operations, whereas specialist banks generally concentrate on individual segments. In Austria, retail banks can be classified as universal banks due to the broad range of services. In the context of this master thesis the focus lays on retail banking, its functions and the influence of technology on business models [Bli17].

2.2.1 Austrian Banking System

In Austria, the granting of a banking licence is required in accordance with the Austrian banking law in order to conduct banking business. Section 1 of the banking law¹ defines which bank is considered a credit or financial institution. As a prerequisite for the operation of domestic banking business banks need the granting of the banking licence by the financial market authority (FMA) [Fuc16].

Similar to Germany, the Austrian banking system is characterised by a single tier and multi tier structure. Credit institutes form the first pillar, the second pillar includes the savings banks and Volksbank sector and the third one the cooperative bank sector which encompasses the Raiffeisen banks [Bli17].

According to Austrian national bank [Nat01] Austria's banks can be divided into eight sub-sectors such as: Stock banks, Savings banks sector, Mortgage banks, Raiffeisen sector, Volksbank sector, Building societies, Specialist banks and branches § 9 BWG². An overview of this three pillar structure and the eight sub categories is presented in Figure 2.2, including examples of banks which are part of each pillar.

In Austria banks have emerged in single and multi-stage sectors according to their ownership structure as shown in Figure 2.2. This presents a characteristic for Austrian banking system [Nat01], [Bor06]:

- the single-stage sector is build by Landes-Hypothekenbanken, Bausparkassen and stock banks. This structure involves institutions which are specialized increasingly on the investment of client's assets, as well as on the financing of industrial companies and advising large customer like BAWAG or bank99 AG [Ber22].
- the two-stage sector is build by the Sparkassen and Volksbanken. This structure includes the traditional savings and cooperative banks. The Sparkassen are organized in a two-tier system with the Erste Group Bank AG serving as the central institution and Volksbanken with "Volksbanken-Verbund" on top [Bli17], [AKM03].

¹<https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10004827>, accessed in December 2022

²<https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10004827>, accessed in December 2022

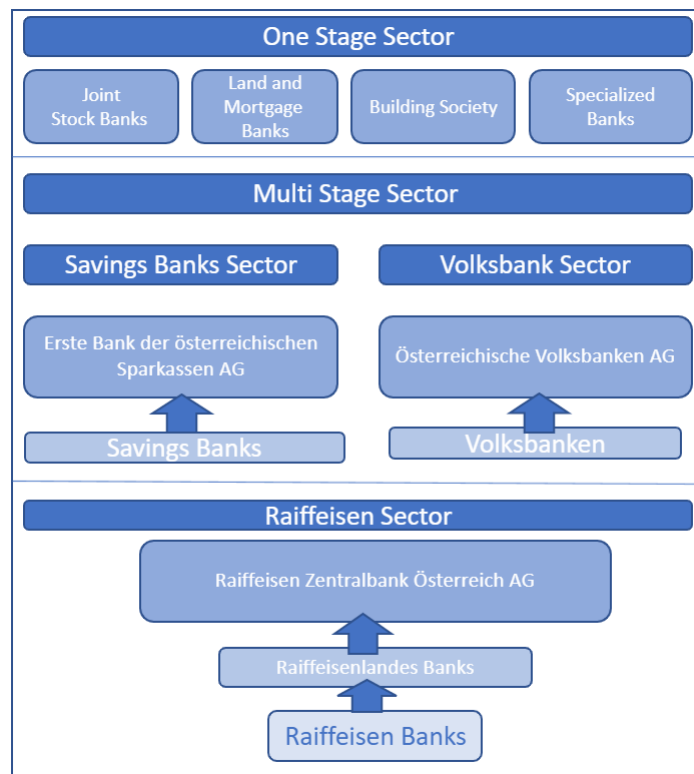


Figure 2.2: Three Pillar Structure of Austrian Banks, own depiction based on [Nat01], [Fuc16]

- the three-stage sector is build by the Raiffeisenbanken: Tier 1 includes 407 independent Raiffeisen banks, Tier 2 includes eight independent regional Raiffeisen banks and Tier 3 is formed by the Raiffeisen Bank International (RBI) as the central institution [Rep18].

According to their form of activity Austrian banks can be divided in universal banks³ [Bli17], [Ber22].

Most of above mentioned banks from the two and three stage sector have their main business activity in retail banking, but they as well have created direct banks to acquire a new customer segment [Bon19].

The construction of Austrian banks is depicted in Figure 2.3. The national central bank (OeNB) is the highest central banking institution in Austria, which has a planing,

³<https://www.bmf.gv.at/en/topics/financial-sector/structure-of-the-austrian-financial-sector.html>, accessed in December 2022

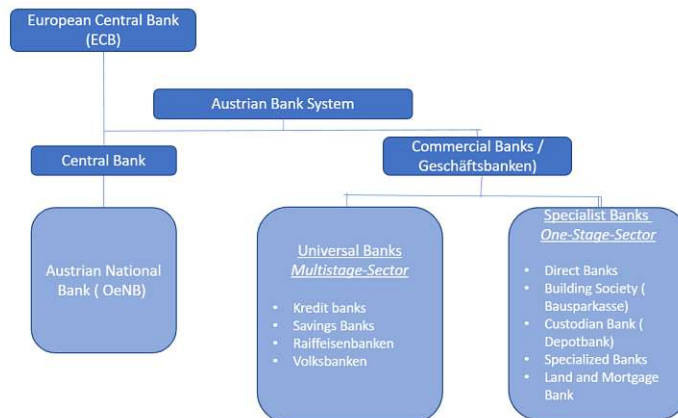


Figure 2.3: Austrian Banking System, own depiction based on [Bli17]

monitoring and controlling role. The main tasks of OeNB comprises inter alia maintaining price stability and providing high quality money to the Austrian population [Nat18].

The European central bank (ECB) builds the highest controlling stage at European level. As a result of the financial crisis of 2008 the banking system in Austria is highly regulated as in many other countries. Although retail banks were not directly affected from the financial crisis due to their business activity in contrast to investment banking. But still retail banks have to handle the tighter regulations in their business activities.

2.2.2 Retail Bank

The previous section presented an overview of banking in general and a brief definition of retail banking. The characteristic feature of retail banking in opposite to wholesale or corporate banking are the services and products offered only to retail customers [Hor09], [MS07].

An appropriate definition of retail banking was coined by Horn. He defines retail banking as a retail business that concentrates on the lower market segment and comprises the provision of essential financial services and products [Hor09]. Retail banking financial products are characterized through their lower complexity compared to corporate or investment banking [ADG14].

After defining the retail banking concept it is necessary to describe main fields of action within retail banking. In the literature, the core functional areas of retail banking consist of: the customer segment, the branch network and other channels for offering products to customers, the financial products and the distribution channel [BNP13], [Bac12].

For this master thesis, Bartmann's segmentation [BNP13] is suitable to get an overview of retail banking. But to be able to make a comprehensive analysis of the changes in the product segments in recent years, a more detailed study is required. In the following, the

segmentation of retail banking characteristics in general will be explained. Based on the literature research in the retail banking sector, Bartmann's product segmentation was expanded by additional products.

Customer Segment

Customer segment defines different types of customers for whom banks want to create value. The customer segment in retail banking is made up of private individuals and companies, depending on their assets and wealth. The volumes of individual transactions are relatively low therefore, retail banking offers highly standardized products instead of individual solutions. Although the volumes are small, retail banking is important because of the large number of customers it serves.

Changes in customer's expectation and behaviour are important to banks as they are faced to different categories of customers [KS19]. This aspect will be handled in more detail below in Section 2.2.2. From a bank's perspective it is easier to serve customers with products and services if they have segments with similar needs and customer behaviour that build a homogenous customer segment [OP10]. Customers can be segmented into different groups according to their preferences and behaviour. An appropriate segmentation of customers can be taken from a study conducted by Berger [Ber15] consisting of five categories such as: digital trendsetters, digital followers, digital wealth managers, young traditionalists and established conservatives. The study is based on the creation of typology according to customer's preferences, behaviours and demographic data of German customers.

Digital trendsetters are customers which are characterised by their open-minded behaviour to new ways of conducting their financial affairs such as mobile banking.

Digital followers are customers who conduct their business online. They focus more often than average customers on online banking or online shopping.

Going on with *digital wealth managers* which are characterised by a low interest on branch offices and an intense usage of online banking and shopping.

The other customer segment consists of the *young traditionalists* who as well have a high digital affinity but are not, yet interested in financial affairs.

The *established conservatives* are involved in financial affairs, but not very digitally interested.

This segmentation [Ber15] shows that retail banks have to handle different groups of customers with different behaviours and expectations. As a result, various strategies must be developed to reach each customer segment.

Changing Customer Behaviour

It is obvious that customers today are digitally connected via the internet, social media and mobile devices [KPM16].

	Generation X	Generation Y	Generation Z	Generation Alpha
Born	1960-1979	1980-1994	1995-2010	2011-2025
Coming of Age	1978-1997	1998-2012	2013-2028	2029-2043
Attitude towards technology	Digital Immigrant	Digital Natives	Technoholics	iGen
Descriptive Product	Computer	Smartphone	Wearables	All Electronic Devices
Communication Preferences	Email and SMS	Social Media	Smart Device	Mobile Phone
Way to conduct financial business	Primary Bank Branch	Primary Online Banking	Online Banking	Not yet defined due to the young Age

Figure 2.4: Generation Overview, own depiction based on [Sch]; [TCF12]; [TFF14];[Pre11]

As already mentioned, new technological developments have changed customer behaviour from passive to active customers in recent years. The average internet customer spends about 6 hours per day online based on a digital report from 2019 [Hoo19b] and it is not expected that this behaviour will see significant changes in the future. This behaviour is reflected in the preferences of customers when interacting via digital channels to conduct business. Wearables like smart watches have found their way in customers life and offer them a very convenient way of acting. For many customers it is not necessary to visit a bank branch because they want to conduct their business from everywhere and at anytime not being limited by working hours. Customers conduct research for product information, compare offers and products and trust reviews of other customers. In a nutshell one can say that social media and other digital-based solutions in various business areas have fundamentally changed consumer demands and their decision-making process [Hoo19b]. Over the last ten years, a more differentiated view of how consumers interact with brands has emerged. Customers are networked through social media applications and share their experiences, positive or negative type with other customers. In addition to business-to-customer relationship, customer relations are becoming increasingly important. According to Fiege [Fie12], user behaviour has changed and users have advanced to gatekeepers and opinion leaders. The influence they have on friends or communities is great and the importance of recommendations from friends and followers is also, very important. In addition to business-to-customer relationships, customer relations are becoming increasingly important. According to Fiege [Fie12] user behaviour has changed and users have advanced to gatekeepers and opinion leaders and can be seen as a trigger of digitalisation.

In terms of generation theory, five types of generation can be identified such as: the Baby Boomer generation, the X generation, the Y generation, the Z or internet generation (iGen) and Alpha generation [Tap08].

As Figure 2.4 shows, demands and requirements of generations have changed over the time due to technological change and digitalisation. The conversion in relation to communication channels and the technological progress have a huge impact in the changing requirements of customers.

This customer change process is an import one in the digital transformation as presented in the digital structural change cycle in Figure 2.6.

In the literature, according to Prensky generations are divided into *digital natives* and *Digital Immigrants*. He describes the first generation that grew up with the new technologies as digital natives or as digital speakers of the digital language of the Internet and computers. The author found that digital immigrants use the internet for information second rather than first. Generation X and Y were involved in the digitalisation process, but not at the same level as the subsequent generation representatives [Pre11].

Generation Z: regarding their financial preferences it is difficult to analyse them because as of 2020 iGen members are aged 8 to 25. But this generation is characterised by a high affinity to technology by being permanently available in every activity they do, this is the generation who is grown up with electronic devices [Sch].

The *Generation Alpha* are children born from 2010 and the ones which will be born until 2025. They are the generation born entirely in the 21st century and use mobile phones and tablets intuitively. This generation knows no world without electronic devices or non-digitized processes. The intrinsic connection between play and technology is becoming increasingly significant in early years education for this generation. One aspect that could influence the behaviour of this generation as customers of financial institutions [TFF14].

Customers are very familiar with new technologies and search for informations regarding financial products on their own without any help of “intermediaries”. Howe [HS09] presented the behaviour of Millennials as a threat for banks as they could loose control of their customers who tend to do mostly everything on their own. But there are also, other studies [KS19] that have been carried out in recent years with participants from the field of digital natives and digital immigrants who are sceptical about the new digital services in banking. Due to their lack of experience these customer groups see the bank as the major institution to contact in case of complicated and larger banking business. 80% of the participants do not like to receive consultation via Robo Advisors and refuse conducting money transfers with the by means of Alexa, Siri & others.

The shift in customer behaviour is already done due to increased digital usage and the high preference of digital channels with regard to all generation groups described in Figure 2.4. According to Twenge et al. [TCF12] in a study about examining generational differences generation Y bank customers have a lower customer satisfaction compared to older ones and this is what makes clear how high the expectations of customers to their banks are. The last years the ROPO (*Research Offline Purchase Online*) effect appeared and is visible in the banking sector as well where customer tend to visit a branch less or in case of complicated financial products [Leh16].

In the above mentioned survey customers describe themselves as a mix of digital, hybrid and analogue customers, they switch between branch, online banking and mobile communication situatively. Important for customers is to have a bank which represents customer proximity and trust, but as well innovative digital products. One of the best

practices in Austria is Erste Bank's digital banking George⁴ and the George APP which are promoted as the modern banking in terms of usability and functionality [KS19]. In the context of digital banking and customer segmentation based on the literature review [Ber15] and in Figure 2.4, there is evident which preferences customers have and where financial institutions must tie up. This part clarifies that the change customers have already experienced, financial institutions must not overlook [Cap15]. Customers expectations for online and offline banking services are being influenced by their experience in other areas where internet giants like Google or Amazon offer high service standards and availability. Therefore, customers require improvements in their own efficiency and productivity regarding banking services [MB15].

Banks try to gain better understanding of their customers via customer segmentation. Customer segmentation is already being considered by banks and is integrated into their daily operations [Rai21]. But the granularity is different between banks.

Branch Segment

A basic property of retail banking are the different channels to offer financial services. The branch is one of the traditional channels to conduct financial services. From 1980 to 2000, alternatives such as online banking and internet banking appeared as a contrast to branch banking which was the traditional way of accessing banking services [HLH⁺17]. In the last years it can be seen that in retail banking parts of services are shifted in form mobile banking units or self service banking [Ost13]. Many retail banks nowadays offer an internet channel or have established direct banks as subsidiaries in order to offer their customers the possibility to conduct their business at any place and at any time. Mobile banking can be seen as the logical extension above mentioned alternatives to branch banking [BALW12].

Even though most Austrians still have a bank branch near their home, the total number of branches has declined in recent years [S⁺20], [Ros19]. As a result, physical contact between bank advisors and customers is decreasing and the use of digital banking is increasing. According to a study conducted in Austria from Koehler [KS19] there are sceptical customers towards digital channels, the branch network will not disappear completely. Nevertheless, the branch segment is facing changes. The transformation of customer-bank interaction from the physical environment to the digital environment is in the implementation phase and focuses in providing a suitable digital customer experience [RC17]. In recent years, flagship store models have been developed to offer customers a new and customer-oriented branch experience.

Product Segment

As stated previously, typical retail financial products include settlement of payments, offering credit and debit cards, provision of savings, mortgages and personal loans. They

⁴<https://www.sparkasse.at/erstebank-en/private-clients>, accessed in November 2022

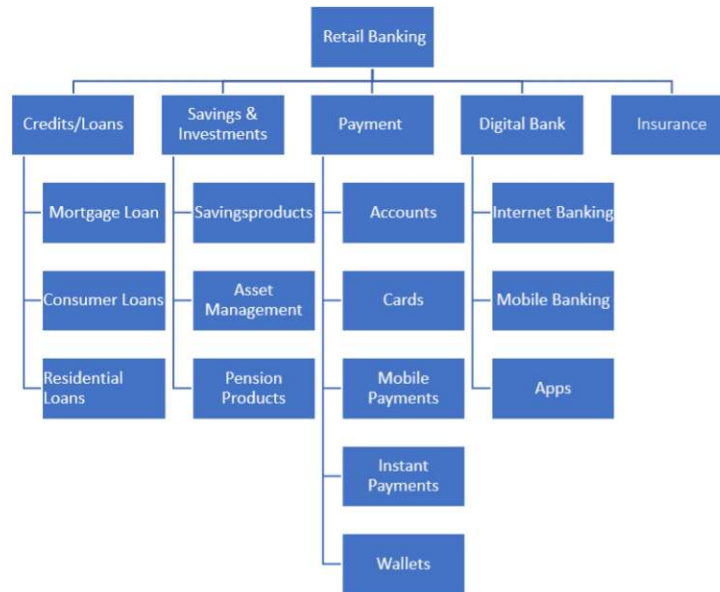


Figure 2.5: Retail Banking Core Business Areas, own depiction based on [BNP13], [SH19]

also, include sales of savings contracts, investment funds, securities and insurance for private customers and companies [BNP13], [SH19].

Figure 2.5 presents main characteristics and products of retail banking based on the description offered by Bartmann [BNP13]. This segmentation can be seen as a starting point of a categorisation of core business areas of retail banks. Below each segment will be presented in more detail:

- **Payments:** this segment includes transfers of funds between private persons and/or companies. Banks offer their customers the possibility to make payments. Cash is one of the traditional payment methods. Although in some countries cash usage has been declining, in Austria this form of payment is still dominant [A+18]. Cheques, another form of the payments cycle, is no longer widely used.

The provision of debit and credit cards can be treated as part of the payment segment. Cards are regarded as the most important means of payment for non cash payments in the retail payments segment [A+18].

Recent innovation related to card payments are contactless payments. The transaction data between cards and payment terminals are exchanged by using the near field communication (NFC) technology. Customers do not need to insert their card in the terminal. NFC allows wireless data transmission between electronic devices

over a short distance of up to roughly 4 cm [Nat20], [A⁺18]. Contactless payments were introduced in Austria in 2013. Many Austrian banks have equipped their debit and credit card chip with NFC technology. NFC-enabled terminals are rolled out as well [Nix16].

Mobile payments are considered as a complementary payment method in the Austrian market [BH19]. In mobile payments, the payment data is transmitted via mobile communication and data transmission technology for example, NFC technology through a mobile device between customers and their payment service providers [Nat20].

Since November 2017, a further payment method has been created with instant payments. Instant payments⁵, are electronic retail payment solutions available 24 hours a day and 365 days a year, resulting in immediate or close-to-immediate (within a few seconds) processing of payment transaction. In the Austrian banking sector the first instant payments were presented end of 2017 by two Austrian retail banks [Ste18b].

A further development in the payment segment are mobile wallets, which are used not only for payments but also, for the administration of vouchers and customer cards. They can be embedded in customer's smartphones and enable banks to offer their customers a convenient way of making mobile payments. Currently in Austrian retail banks apple and google pay wallets are in use.

The high number in using credit and debit cards and mobile or online banking emphasized the impact if digitization in the banking sector by shifting the way payment is conducted from paper based methods to electronically based payment methods. According to a study conducted by PwC [BH19] Austria is a country with a high penetration of payments conducted in cash or via debit card. But alternative payments methods like mobile payments are gaining importance.

New players have already joined the payments segment value chain such as FinTechs and big technology companies (GAFA). The business model of FinTechs with regard to the payment segment and the financial value chain are presented in the chapter 3.

- **Credits / Loans:** is another segment offered by retail banks additional to payments. Loans can be provided to customers for different purposes. Consumer, financing and mortgage loans are some of the common ones. Due to low interest rates and the low financing costs various forms of loans are in high demand. The demand for loans has increased in recent years. Channels to apply for loan and as well the application process have changed. Often the channel to apply for loans has been successfully digitalised, a visit to an on-site bank advisor is not always necessary. Different portals offer customers the ability to compare terms and conditions of various providers and to apply for loans online [fut17b].

⁵<https://www.oenb.at/en/Payment-Processing/SEPA/SEPA-Payment-Instruments/sepa-instant-credit-transfer.html>, accessed in November 2022

- **Financial Investments:** include investments and saving products. Bank advisors provide to customers investing proposals. The next main category within financial investment is asset management, in which the bank collects and actively invests client funds in order to achieve the highest possible returns for customers.

There are banks in Austrian offering Robo advice services to their customers. With the help of artificial intelligence the trading of securities and investments is automated. Such solutions are not solutions developed within the bank, but in cooperation with third parties [fut20].

- **Digital Banking:** Internet and mobile banking encompass all transactions between banks and customers enabled by hardware and software [SK15]. The starting point of online banking services began with the growing popularity of the internet [Ski14]. Tasks performed via internet and mobile banking can be non-transactional and transactional. Balance inquiry or pin query are for example, a non-transactional task. Transactional tasks include fund transfer, purchase of debit, credit or prepaid cards, application for a loan or opening a new bank account. In contrast to internet banking, mobile banking is a software application provided by the financial institution to carry out transactions or check account balances, among other things.

Distribution Segment

The distribution channels in retail banking are different ones. The multi-channel banking is the next step after online banking as an approach to reach customers via various communication and sales channels, starting with direct banks and their online channels and the branch as distribution segment [BNP13]. According to Bacher [Bac12] only the ideal combination of customer segment, product and sales channel leads to success in a financial institution.

Direct banks focus on communicating with customers by using direct channels like online services through the internet or telephone. This can be derived from the definition of direct banks according to Swoboda [Swo00] as:

"..branchless financial institutions offering banking functionalities through direct channels"

Based on above stated description, direct banks manifests advantages like more favourable transaction costs because of cuts in personnel and branch costs. Another advantage of direct banks is the permanent availability for customers because of the non existence of working hours. 24/7 banking is offered to customers. The third advantage is related to the location independence, customers have access to their online accounts from all over the world because of the availability of internet.

Based on the description and categorisation of different customer segments, customers cannot be divided in groups that use only one channel. Mostly it is a mixture of all

offered distribution channels, which fosters the multi channel approach again [KS19], [Bac12].

2.3 Digital Transformation - Changing Market Environment

The financial sector has always been characterized by the use of technology. Digitalisation has a sustainable effect on economy and society. One strong driving force of transformations is digitalisation. In the literature there can be found different interpretation of the term digitalisation. Digitalisation is a term used as a synonym for changes various companies of different areas have gone through [VCB⁺14].

Gartner [Gar19] coined a very suitable definition for the matter of this master thesis:

"..Digitalization is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities. It is a process of moving to a digital business"

Digitalisation can be seen as the use of technological possibilities to create something new. In this context, the Pratz and Eistert [EP14] definition of digitalisation describes it as the use of all technological potentials to achieve the following: new customer experiences, expansion of existing business models and a major step in efficiency in processing.

Digitalisation impacts economy in different ways. According to digitalisation in the contexts of banks three main components can be defined as important: the strategic alignment or realignment of business models, seizing new opportunities and the need of change due diverse influencing factors in the market. Ongoing changes reflect in transformation towards a digital market [JP14].

This change has to be seen in the context of a paradigm change in different areas of the retail banking business not only as a one to one replacement of existing processing through digital and technology driven processes. The shift in behaviour of market environment, customers and banks has to be analysed for a better understanding.

The impact of digital transformation in the banking industry is presented by Scardovi [S⁺17] based on changes in bank internal processes and activities. The author lays the focus in opportunities and challenges during the implementation of the transformation in the banking area.

In this section the focus will lay in the description of the digital change cycle as a first step in the analysis of the structural changes that can be seen in the Austrian retail banking. According to Dapp [DSAH14] there can be generalized stages in the digital change from various industries that can be applied in the banking sector as well.

The steps shown in Figure 2.6 will be described in more detail below:

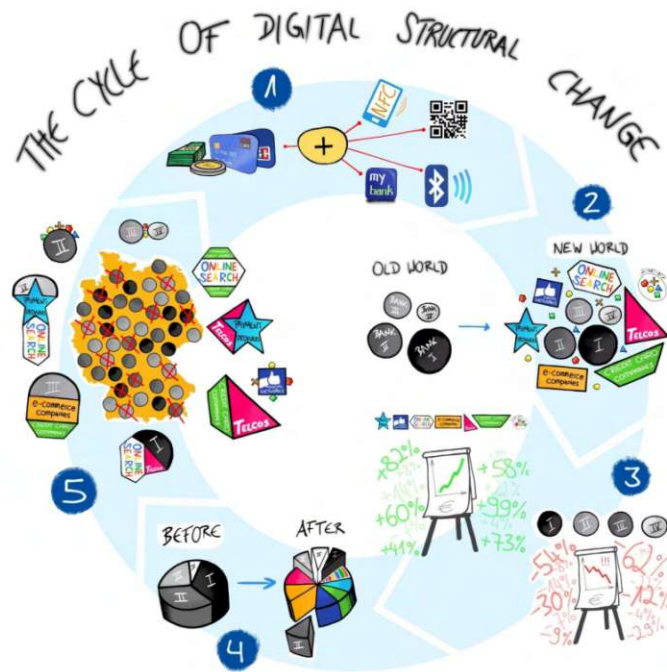


Figure 2.6: Digital Structural Change Cycle, [DSA14]

First step: based on the technological development, customer needs can be fulfilled in new ways. New technology based ways of communications, customer behaviour and habits evolve. Customers utilize new technologies in their daily routines. In the banking sector this can be seen starting with the use of debit and credit cards, contactless payments via NFC(Near Field Communication), online and mobile banking just to name some of them.

Second step: in this step there can be seen an increased competition via complementary products offered by technical oriented companies. Long established analogue processes are being replaced through new more technology driven solutions.

Third step: traditional business models are put under pressure. The best example is the music industry.

Fourth step: through the appearance of new competitors the market shares of established companies decrease.

Fifth step: in this steps there can be observed market adjustments, new entrants established their business models. Already established companies disappear or adapt their business models in terms of cooperation with new entrants.

Similar stages of digital transformation are presented by Matt et al. [MHB15] as he focuses in a first steps in the use of technology which lays on the need of digital technologies and the ability to utilize new technologies. In the second phase, the focus is on the changes in value creation in connection with the impact on business models. The third stage handles the structural change which specifies future changes in structure of the operational processes. The last stage described by the authors is the financial aspect, which focuses on the financial ability of a bank to do digital transformation.

A comparison of both models shows that there are some key goals such as the technological aspect and the transformation in value proposition and business model transformation, which must be taken into consideration during a digital transformation.

2.4 Business Model - Definition

In this section business models definition, business model framework and how a business model framework can be applied for retail banks are presented.

Based on the literature, this section first examines the theoretical approach to business models, as it can be treated as an important indicator for the analysis of transformations in the banking sector. Business is illustrated as the way how an organisation operates [MKC10]. Business models gained popularity with the rise of the internet since the mid-1990s [Tee10]. In his overview on business model research the author Knauseder [Kna19], presents important aspects and features of business models. As stated above, there is no clear definition of the term, and according to the literature the term business models has been interpreted differently. Business models are treated under different aspects such as technology-driven development, by focusing on technology and IT development and its impact on the disruption of business models that can be considered as still existing [ZAM11], [BA15]. Another aspect focuses on value creation and it can be seen as the most common concepts describing business models. Various papers in the literature highlight this importance. The definition of Teece stresses out the importance of value creation as the essence of business models[Tee10]:

"..describes the design or architecture of the value creation, delivery, and capture mechanisms [a firm] employs. The essence of a business model is in defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit."

The focus on value creation presents a shift in the focus on customers and generating value proposition for customers as one of the driving forces in companies. In above mentioned definition value creation was always considered related to value creation for customers [Tee10], [OP10]. Other scholars focuses on value creation for stakeholders, according to Casadesus-Masanell et al. [CMR11] business models refer to the way how a firm operates and creates value for stakeholders.

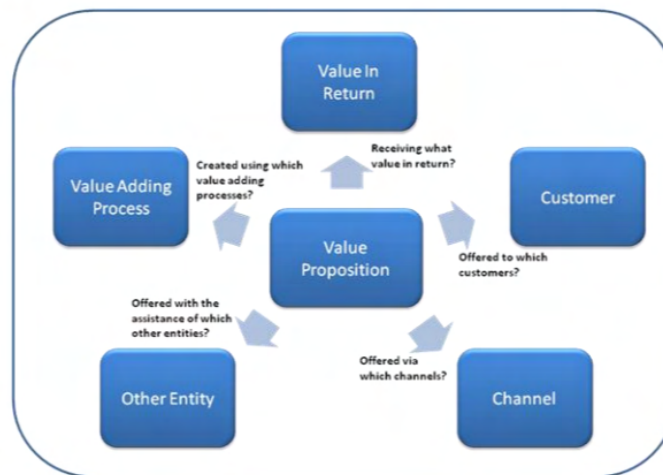


Figure 2.7: Business Model Design Elements, own depiction based on[Lam12]

Business Models can be interpreted in different ways based on various opinions related to the scope of a business model. Another appropriate business model interpretation comes from Nielsen and Lund [NL14] as they handle business models as a platform focusing on resources, processes and services supply and the interconnection between these areas.

In general one can say that a business model explains the way a company conducts business. There is always a mixture and interaction of elements like value proposition, revenue models and relationship between elements [Sch12].

Business models can be seen as the architecture of a company. This is an essential aspect when trying to explain the impact of technology, digitalisation and FinTechs on retail banks. Technological developments needs to be considered in product development and embedded in products and services [Tee10]. As it can have a transformative impact in value creation and delivery, but also, on the cost side of business models. For example, cloud-based computing models, minimize the need for companies to invest in servers as they instead can buy server capacity in small slices according to their monthly needs [Tee10].

A common model to describe and analyse a companies business model is the business model canvas as this is a visual chart showing elements like companies products value proposition broken down in blocks like key activities, key partners, key resources, customers relationships, customer segments, cost structure, channels and revenue stream [MKC10], [OP10] which will be described in more detail in Section 2.4.1.

2.4.1 Business Model Canvas

There are different business model frameworks which presents the aspects a business model consist of. Based on scientific studies various frameworks have similar characteristics, but

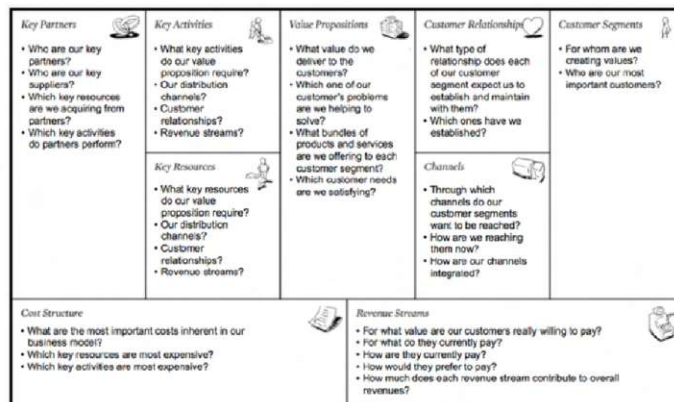


Figure 2.8: Business Model Canvas Building Blocks, own depiction based on [OP10]

show as well differences based on the area their focus [Kna19], [Lam12],[OP10], [Tee10].

The business model canvas framework presented by Osterwalder et al. was chosen for this master thesis for the purpose of analysing the impact of FinTechs and digitalisation on the Austrian retail banking sector as it helps to understand the core business model of a bank. As mentioned above the business models canvas from Osterwalder is not the only framework, but for the purpose of this master thesis it is considered a useful tool for structuring literature searches and input from the empirical part of thesis. In the literature the BMC framework is often seen as a good tool to structure core elements of business models [BWW13].

Other frameworks such as the one presented by Christensen and Kagermann do not consider the block Partnership, which seems to be important when analysing the impact of digitalisation and FinTechs on the Austrian retail banking sector [JCK08], [Lam12]. Osterwalder presented the value proposition canvas [OPBS14] which provides an additional customer-centric component for the Business Model Canvas. But, the value proposition canvas concentrates on creating value for customers and seems not to be sufficient for a comprehensive analysis of the changes in banks business models through FinTechs.

According to Osterwalder the business model canvas, presented in Figure 2.8, includes nine building blocks which cover four main aspects such as: Customer, Value Proposition, Infrastructure and Financial Aspects. The first block is **customer segment** which a company wants to reach and serve with products and services. Within these segments there are different types of customers a company aims to reach and offer products and services. Customer segments differ according to their request, needs, their willingness to pay or preferred channels they want to be conduct business.

The **customer relationships** block describes the types of relationships a company

establishes with customers. Connections and interactions with customers vary from automatic to personal or a mixture of mentioned types, from long-term to new customers or customer's loyalty. The level of recognising customers and personal characteristics of customers lead to tailored products and service recommendations [OP10]. In the context of establishing relationship with customers according to Osterwalder and Pigneur a strong brand customers identify themselves with is very important. Beside the personalization of products and having a strong brand, building up trust is another essential factor.

The next building block is the **channels** that shows how the company interacts with customers. The points of contact with customers can be different such as: distribution, sales or communication channel [OP10].

The next block **value proposition** encompasses the products and services which intend to solve customers needs and problems, which satisfies customers and create value. They may be innovative or similar to existing products but have added features or attributes as highlight to other similar products and services. The authors define this block 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."

The main activities a company takes to operate successfully builds the **key activities** block. It shows how a company creates value. Activities are different depending on the defined business model for a company. Section 2.4.2 will present the block key activities focused on the retail banking business model as they differ from investment or wholesale bank business model [Kna19].

The next essential block for a company to operate successfully and create value are **key resources**. These resources can be financial, human and physical. They are essential to run the business.

The block **key partnerships** describes the partnerships a company can create to run its business and the partners it needs to run business. Types of partnership can be cooperation by forming strategic alliances, acquisition or coo-petition, joint ventures and buyer-supplier relationships [OP10].

Under the financial aspect there are two blocks such as **cost structure** block and **revenue streams** block. The cost structure block encompasses all costs needed to operate and run the business for a company. The idea behind a successful business models is to have lower cost than earnings. The aim to minimize costs is wide spread.

The revenue stream presents the revenue generated by selling services and products to customers. According to Osterwalder and Pigneur [OP10] there can be various pricing models fixed and dynamic. Based on monthly payments customers can generate reoccurring revenues. The opposite are one-time payments which generates one time revenue.

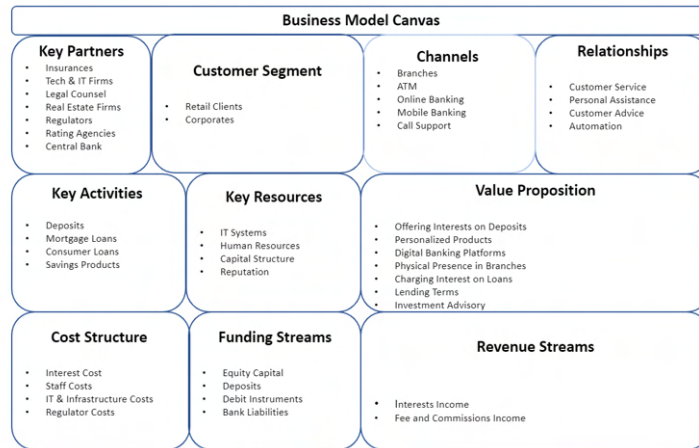


Figure 2.9: Business Model Innovation of Retail Banking, own depiction based on [Kna19]; [NL14]

2.4.2 Business Model Canvas for Retail Banking

As stated in the previous chapter the purpose of this master thesis is to analyse the Austrian retail banking and the impact FinTechs have on it. Therefore, after giving an introduction in business models in general in this subsection the focus will lay on business models in retail banking. Based on the BMC framework the depiction of retail banking of Nielsen and Lund [NL14] will be presented and analysed. The illustration of the business model will be a starting point for further analyses of the topic. The authors depicted retail banks business models based on the nine building blocks presented by Osterwalder as indicated in Section 2.4.1 [NL14].

Based on the definition in Section 2.1 a bank is a financial intermediary that receives capital as deposits from capital providers and provides capital to capital acquires. In the existing model based on Nielsen and Lund, in Figure 2.9 the retail bank business model is presented by focusing on more parameters [Kna19], [NL14]. The blocks can be categorized in four main groups such as: Customer Block including the **customer segment** consisting of retail and corporate clients with their respective demands. The main aim of a bank is to create value to different customer segments. The segment **channels** has the aim to interact with customers and consists of diverse retail banks distribution channels such as: net of branches, ATMs, online and mobile banking, call centre support.

Customer relationship is another element included in the customer block which describes the connection between a retail bank and the customer segment. Its aim is underpinned by informing customers about new bank offerings via different channels. This relationship encompass customer service, personal advice and assistance to customers and automation of processing which goes hand in hand with giving the customer more

responsibility and convenience [Kna19], [NL14], [MKC10].

Another major block including the segments key resources, key activities and key partners is the infrastructure block. **Key resources** describes what is needed to create value for the customer. Main assets are: IT systems, bank's staff and HR, the capital structure and reputation of the bank. These resources enable retail banks to offer their main activities. But as well retention of existing customers and new customer base.

The segment **key partners** presents the network of external partners that a bank needs to run their business such as associations with card schemes like Visa and MasterCard.

As analysed previously and shown in Figure 2.5 retail banks **key activities** in general encompass payments, loans, deposits and credit card issuing. It is build by the technology and IT firm which is responsible for developing, implementing, supporting and servicing IT solutions for banking. Data centre operations as well part of the IT infrastructure of the bank. The IT firms are mostly incorporated and part of the bank. Another partner the regulators and central bank which build the legal aspect. Insurances are another key partner in the banking sector. It needs to be analysed in this aspect the role of FinTechs and how they fit in this structure for different Austrian retail banks.

One of the most important blocks is the product block which consists of the **value proposition** segment. This segment intends to make products and services attractive to customers and to identify their needs. The value proposition of retail banks based on Nielson and Lund [NL14] are offering interest on deposits combined with personalized advice, physical proximity and a variety of digital access channels for their consumers. On the other hand on the lending side banks offer lending rates with proper lending terms and advisory for their customers.

The last block is about financial segments including the revenue stream and the cost structure. The **revenue segment** is generated in case value is offered successful to the customer segment. It consists of interest income, fees, liabilities (customer deposits) and commissions.

On the other side there is the **cost structure** segment which represents cost that arise in from doing business. This segment includes interest cost, fees, commissions, impairments and general costs that occur from infrastructure, information technology and staff.

The model in Figure 2.9 provided by Nielson and Lund or Knauseder are based on the year 2014 and present an illustration of the German and Austrian market of that period of time [Kna19], [NL14] by examining direct banks. They show that the business model canvas is suitable to analyse transformation of certain bank types. As mentioned the purpose of the master thesis is to analyse the impact of FinTechs and big technology companies in the retail banking sector in Austria based on retail bank's business model. The BMC framework was chosen to develop a detailed overview of the impact of FinTechs and digitalisation had in the last years on Austrian retail banking sector. In the next chapters the market environment changes and FinTechs will be analysed in detail with the aim to gain input and increase the understanding of the impact of FinTechs in retail

bank business models. A new version of the BMC framework will be generated after the literature research and can be compared with the business model canvas described in this section. The aim is to elaborate findings about key impacts of digital transformation in FinTechs in Austrian retail banking.

At first all nine building blocks of the business model canvas needs to be evaluated if they fit to the Austrian retail banking sector. Based on the literature in this master thesis and the upcoming expert interviews the aim will be to work out an adapted version of the business model canvas for retail banking. This will help to achieve an overview of changes the retail banking sector in Austria had to face in the period of last five years and to create recommendations for banks and maybe find out research gaps.

2.5 Banking: Trends and Forecasts

The conclusion drawn from the literature review performed in this chapter states that the upcoming challenges is that traditional financial intermediaries have to deal with innovative technology and services. The impact of technological progress, but as well customer behaviour change reflects on bank's business models and the market environment. Transformation and increasing competition are the shaping forces in the retail banking area.

2.5.1 Innovation in Financial Sector

The Banking sector is one of the pioneers in adaption of IT as most of the banking services are IT supported [AP12]. Innovations such as credit cards or ATMs, Internet and mobile banking are taken for granted, but when they were first introduced they were already an enormous innovation when they were first introduced. In Figure 2.10 is given an overview of the technological progress of financial services.

The development of cards introduced in 1950 and the automated teller machine (ATM) introduced in 1967 were the first steps in the new bank's life cycle.[Kin10],[HLH⁺17].

This automation of banks basic functions reduced costs and also, increased customer convenience by allowing them to access to cash 24 hours a day, seven days a week. ATMs have improved over the last years including possibility of bill payment, account to account transfer, third party transfer, cash deposit where the ATMs count money at real time and posts it to a customers account and passbook deposit updates. Self Banking became a preferable channel for financial transactions with cash and cards.

In 2016 Diebold presented ATMs which evolved with contactless technology controlled via smartphone due to mobile enabled authentication via Near Field Communication (NFC) or Quick Response (QR) code [Nix16].

But not only the development of ATMs improved the way to communicate and connect to customers also new channels like online banking were a step towards more convenience for the customer. Banking transactions could be done through the internet and this ability

2. BANK - DEFINITIONS AND TRENDS

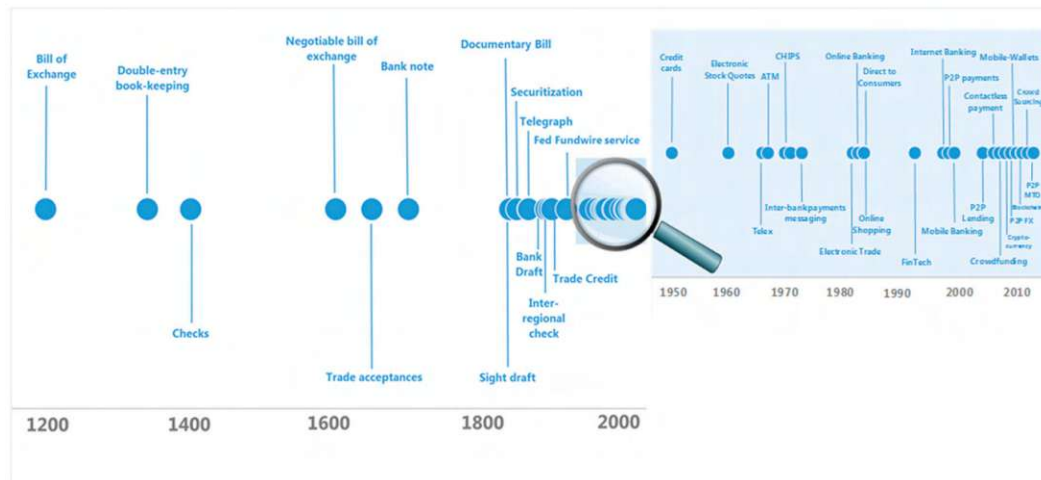


Figure 2.10: Technological Progress in Financial Services [HLH⁺17]

opened new beneficial opportunities for both sides banks and customers. New online and mobile solutions are provided by financial institutions which focus on providing customers with new opportunities like view account balances, setting up standing orders or transfer funds at every time customers wants to. The relationship between banks and customers has become more interactive. Payments can be done with debit card, credit card, prepaid card or cash. Cash payments still make a huge part of payments and especially in Austria cash is a very powerful instrument to pay.

According to Alt & Puschmann banks have successfully established joint electronic infrastructures for supporting inter bank relations like the financial market infrastructures in the payment sector for example, the *SWIFT* network [AP12].

In recent decades, there has been a positive trend in technological innovation, which has had an impact on financial services such as payments, savings, borrowing, risk management and financial advice. According to He et al. [HLH⁺17] the review of technological innovation shows that advances in digital technology are changing the financial services landscape. There are four major technological innovations, defined as shown in Figure 2.11.

Artificial intelligence (AI) and big data can be used to predict customer behaviour, improve the process of credit approval or fraud detections. Distributed computing encompasses distributed ledgers. It emerged as a technology supporting application allowing for instance, B2B transactions without the need to involve intermediaries or in form of digital currencies. The next development is related to cryptography and for instance, smart contracts. The last technological innovation according to He et al. [HLH⁺17] is related to mobile access and the internet allowing consumers to access a broad range of financial services.

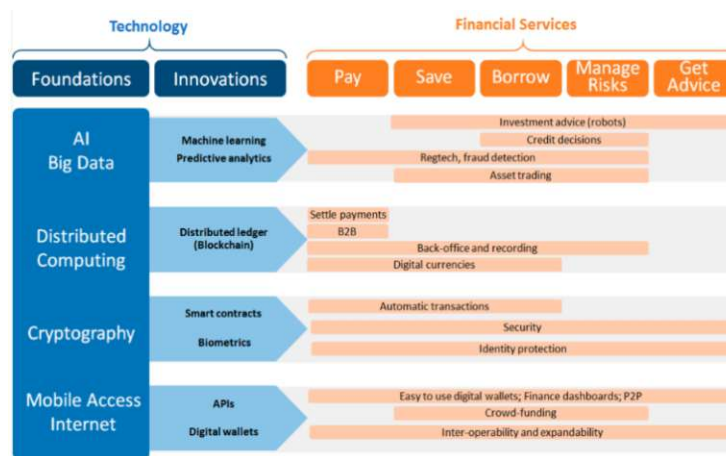


Figure 2.11: Major Technologies Transforming Financial Services, [HLH⁺17]

Due to the financial crisis, many banks had to rethink their business models. New evolving business models of non-banks or other technology-oriented companies offer the chance to improve customer relationship and business process [ST15]. The digitalisation process according to Schumann and Tittmann [ST15] can initiate new business models in different ways: by the organisation or forced by others, who may be customers or competitive banks. But also non-banks or other technological companies can, as already mentioned, initiate new business models or adapt existing ones [FR15]. Technology companies such as Google, Apple, Facebook and Amazon can be seen as a challenge for retail banks and their business models [BNP13].

The banking environment is characterised by competition between banks, between banks and competitors such as FinTechs and high levels of market regulation.

Digitalisation is about innovation and disruption or at least transformation in an industry. The term technology push and market pull are the two main driving forces of innovation in times of digitalisation. Market pull exists when customers have increasing demands on financial industry. When the source of innovations is currently inadequate satisfaction of customer needs, which results in new demands for problem-solving the impulse comes from individuals or groups who are willing to articulate their subjective demands [BV09].

The influence of digitalisation in the banking sector is not negligible, bank customers have increased demands in relation to the availability of financial services or the quality of financial products. The trend shows that banks are reacting by changing their business models and to adapt to digitalisation. According to Brem [BV09] technology push encompass the development of digital technologies which boosts new business models and new products. The stimulus for new products and processes comes from internal or external research, the impulse is caused by the application push of a technical capability.



Figure 2.12: Retail Bank Challenges, own depiction based on [BNP13]

2.5.2 Challenges in the banking environment

The retail bank environment is fluid and the operating environment is competition intense [Nwa95]. According to Bartmann [BNP13] retail banks are challenged by various factors which are presented in Figure 2.12. The emergence of competitors such as FinTechs and big technology companies such as Google, Apple or Amazon (known as GAFA or GAMA after Facebook rebranded to Meta in 2021) who compete with banks for market shares build a competitive pressure for retail banks. In accordance to the BMC framework FinTechs and GAFA products and services may have impact on the blocks Key Partners and channels. To have a better understanding on this impact in Chapter 3 the focus will lay on FinTechs evolvement and the topic will be treated in the expert interviews to gain insight.

Changing Customer behaviour, decreasing of the contact between customers and their bank and the emergence of new customer generations are other challenging aspects that needs to be analysed thoroughly as it can have an impact in retail bank business model transformation. Based on the BMC framework the change in customer behaviour may have impact primarily on the block Customer Segment, but as well on the blocks Relationship and Channels.

New technologies lead to new products, address new customers by offering automated products and services [KPM18]. Based on the BMC framework the challenge due to digitalisation and technological progress may have impact Key activities, Channels and value proposition. This part will be analysed in more detail in Chapter 3.

Regulations and legal mandates build another challenging part according to Figure 2.12

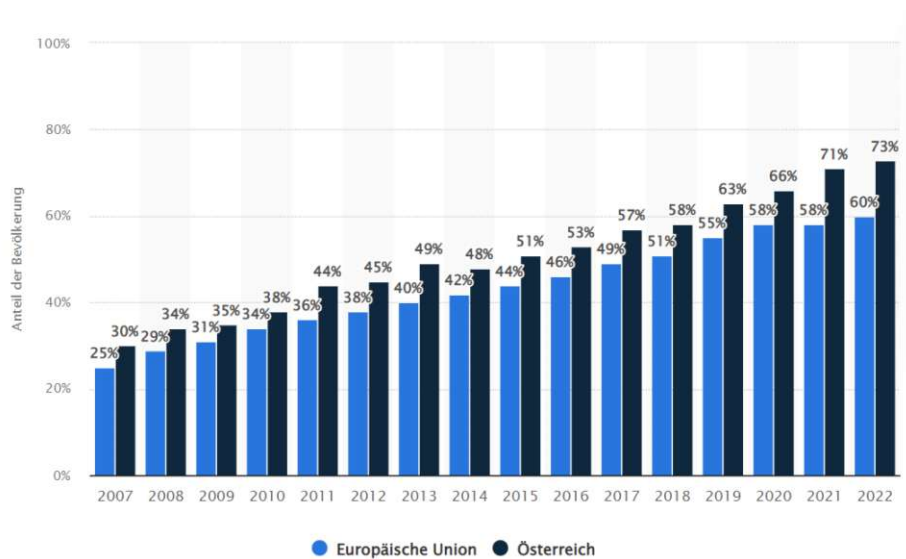


Figure 2.13: Users of online banking in the total population in Austria by 2022 ⁸

which will not be handled in detail within this master thesis. As stated in the Section 1.3 there already exist various papers that handle this topic as it is relevant according to the open banking topic. According to the BMC framework the regulators are part of the Key Partners block and impact the banking business model with their legal mandates as seen in the past with the PSD2, MFID ⁶, GDPR ⁷ [Zah19], [Ros19]. Within this master thesis the impact of regulatory mandates will not be analysed in more detail and can be seen as a part for future work.

2.5.3 Trends in Banking

In 2022, 73% of people in Austria used online banking as shown in Figure 2.13. Online banking includes all electronic transactions with banks for payments or retrieving account information. Four year earlier in 2018 58% of Austrians uses the internet for online banking [Sch19].

A trend towards online banking can be seen as a convenient and easy way to conduct business.

Due to the increasing number of digital products and alternative communication channels, the traditional branch is facing challenges. According to a study of the Austrian bank market of the consulting company KPMG [KPM18] there can be observed a market shrunk related to bank institutions of -26% in the period 2004 until 2016 due to mergers

⁶<https://www.fma.gv.at/en/glossary/mifidmifir-ii/>, accessed in November 2022

⁷<https://www.oenb.at/en/dataprotection.html>, accessed in November 2022

2. BANK - DEFINITIONS AND TRENDS

Technology driven Innovations in Austrian Banking Industry	
Internet of Things	<ul style="list-style-type: none"> The Internet of Things enables classic banking services to be linked to existing digital voice assistants. Such Products are not yet widespread (at least in Austria) and are currently only available in simple functions A major technological trend currently being observed is, however voice-controlled interaction without manual input ("air age"). It can therefore be assumed that digitization in this area will also be reflected at the product level.
Artificial Intelligence	<ul style="list-style-type: none"> automatic image recognition Online account opening: In cooperation with external providers via video chat ("opening an account from the couch") an identification of New customers take place. Photo money transfer: Some banks offer in cooperation with a FinTech the transfer by photographing the relevant data
Machine Learning Systems	<ul style="list-style-type: none"> Banks use machine learning especially with personalization and Improve their products.
Blockchain Based Applications	<ul style="list-style-type: none"> At the product level, these are currently not widespread; from the customer's perspective are crypto assets most prominent example of blockchain-based applications

Figure 2.14: Technological driven product innovation in banking, own depiction based on a study from FMA in Austria [Aut22]

between bank institutions. The number of bank branches as well reduced by 13% in the period 2004-2016. A trend that can be observed according the bank branch topic is the flagship branches concept. They can be seen as an example measure to create a new way of customer consultation feeling [Pfi16].

Figure 2.14 presents factors that can be seen as technology drivers in the Austrian banking industry. The IoT or artificial intelligence can impact classic banking services to be linked with technological innovative products. A trend of the last years can be observed related to use of technology in the customer on-boarding process: the ability of customers to open accounts online without the need to visit a branch by using new technology enabled processes such as automatic image recognition or photo money transfer and online account opening. But as most of the banks have an omni-channel strategy new customer on-boarding possibilities can be seen as an extension of the existing portfolio to reach customers [fut17b].

Banks have very pronounced customer access via branches due to the special advisory requirements of many customers. This customer access has changed considerably in recent years, as customers are less intensively interested in personal support than in digital communication with their bank [Pav13], [SARS15]. Figure 2.15 provides an overview of the possible channels and touchpoints including branch network, social media presence, web presence, mobile means and phone without assigning a weighting or prioritisation.

Mobile payments gained importance over the last years in the Austrian retail banking. Customers are able to conduct payments via different devices like smartwatch or mobile phone, without the need to have a physical card [Ste18b], [Ste19]. As analysed previously and shown in Figure 2.5 retail banks in general encompass payments, loans, deposits, but due to new entrants in the financial market, banks adapt their core business areas. Based on above-mentioned example of contactless payments with Apple-Pay in Austria



Figure 2.15: Omni Channel Approach [Pav13], [SARS15]

a new way of activity in the area of payments raised 2019 [fut19]. In the area of loans there can be seen in Austrian banks a trend to process loans digitally.

The number of challenger banks is growing, N26 ⁹, Fidor Bank ¹⁰, TransferWise ¹¹, they involve new technological abilities to offer new products and services which are offered digital, but are personalized [KPM18].

In a nutshell changes in the distribution channels in the bank landscape, direct banks, new representations of online and mobile banking, mobile payments raised over the last years and affected retail banks business models. The omni-channel approach offers customer the possibility to choose between video, chat, meeting in person or the use of artificial intelligence [KPM18].

According to the relationship between Banks and FinTechs a willingness to cooperate is evident [Ros19], [Pfi16]. Based on findings from literature there can be provided empirical evidence that digitalisation and new FinTechs as new market players have somehow forced banks to open their boundaries and cooperate with new market players [KPPG20].

⁹<https://n26.com/de-de>, accessed in November 2022

¹⁰<https://www.fidor.de/>, accessed in November 2022

¹¹<https://transferwise.com/>, accessed in November 2022

FinTech - Definition, Business Models and Trends

This chapter treats the rise of financial technology companies and the importance they gained in the financial industry. Beside the attempt to find a generally valid definition of the term FinTech, this chapters will analyse and categorise the new emerged business models with respect to their core competences in the Austrian market. The transformation FinTech initiated in the financial sector will be discussed in detail due to the high level of activity of FinTechs and the high investments.

3.1 Definition of FinTech

The term financial technology is compounded of two terms *Financial Services* and *Technology* [DSAH14]. The interconnection between finance and technology is not something new, as shown in the previous Chapter 2 developments in the financial area were closely connected to technology from the beginning. But the developments after the economic crisis have taken a new direction. One, in which FinTechs play an important role in the banking sector.

Based on the existing literature there can be found a diversity of definitions of the term FinTech. A comparison of common definitions shows that the term FinTech is described by focusing on various aspects such as business models, the pace of technology and the connection to start ups.

Based on the innovative aspect, FinTech is understood as technology-enabled financial innovation with the goal of increasing customer benefits through easy handling of financial products [Kaw16]. Sometimes it is used as a synonym to describe the intelligent use of modern technologies in the context of financial services [Nie16].

With the rise of FinTechs new business models and products emerged. This is often treated as the main characteristic of FinTechs as they combine innovative business models and technology to enable, enhance and disrupt financial services [LSG17], [PR14]. Other authors go so far as to define FinTech as a new financial industry that uses technology to improve financial activities [Sch17].

Based on the European banking authority FinTechs can be defined as technologically enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services [Aut17].

This definition can be seen as a synthesis building on commonalities of the definitions that have been applied to Fintech in literature. The main characteristic of FinTechs are financial products and services they offer, which are built around technological innovation. FinTechs offer products and services which have been offered only by banks in the past. They show that almost all financial services can be processed digitally and that completely new business areas can be created [Pwc17]. FinTech encompass a new wave of companies changing the way customers pay, invest, lend or borrow money. The characteristics which underpin the advantage of FinTechs are on the one hand the small business form which offers flexibility and rapid decision making. As a small business form FinTechs can react faster to varying customer needs and refine non relevant expectations. They can easily work on innovations as they do not legacy systems. Therefore, FinTechs can focus on customers and products compared to incumbent banks which have to follow strict regulative.

As shown above, there are different definition that treat various aspects of the term FinTechs, but in all it is common the technological aspect to create or modify financial services and products. Based on different FinTech interpretation in the literature authors like Zavolokina, Dolata and Schwabe [ZDS16a] have derived a FinTech Framework by analysing the different aspects of FinTechs definition in the literature in the years 2012 until 2015.

In this framework shown in Figure 3.1, FinTech is described based on three dimensions: *Input* which is the combination of technology and organization. *Mechanisms* which describes the way FinTechs act in terms of create or improve or change, disrupt, apply technology to finance, create competition on the market. And an *Output* which encompasses the creation of (new) services or products or business models.

Based on the framework [ZDS16b], FinTechs will be defined for this master thesis as the latest state of the art in information technology, which is used in the financial industry to provide innovative financial services or enable products to improve existing processes or current business models of banks.

Having a definition of FinTechs leads to the next important steps which is the analysis of the factors that enabled the rise of FinTechs. Referring to the World FinTech report, conducted by Capgemini [CRI21] in 2021, factors that enabled the rise of FinTech companies can be categorized in four parts. As shown in Figure 3.2, the first part is

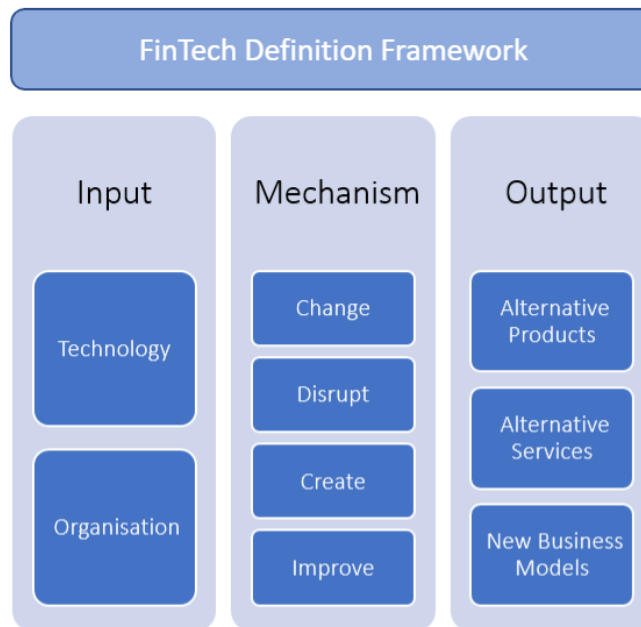


Figure 3.1: FinTech Definition Framework, own depiction based on [ZDS16b]

increased *customer demand* which are influenced by digitalisation and technological progress. A similar development is already known from other industries such as music or film industry [DSAH14]. In the previous Chapter 2 was given an overview of the shift in customer behaviour influenced by technological transformation over the past years in various sectors affecting customers daily live. The availability of the internet, mobile devices and other digital applications has changed the way customers interact with their environment.

The second enabler is the fast pace of the *technological evolution*. This part encompasses new technologies such as artificial intelligence or cryptography and the technological progress included in the daily live such as increasing use of the internet, digital channels and mobile devices. One advantage of FinTechs is the independence from legacy systems and the possibility to use new technologies

The *lower barriers of entry* build the third part why FinTechs are in advantage opposed to the banking sector. The banking sector has to deal with strict regulatory requirements and high operating costs [JM15]. The last part are high investments in FinTechs sector which highlight their importance in the financial sector [PR18],[KPM20].

In a nutshell, key characteristics of FinTechs are business process improvement, rapidity, flexibility and innovation related to financial products [DSAH14].

One of the main differences between FinTechs and retail banks is the level of legal

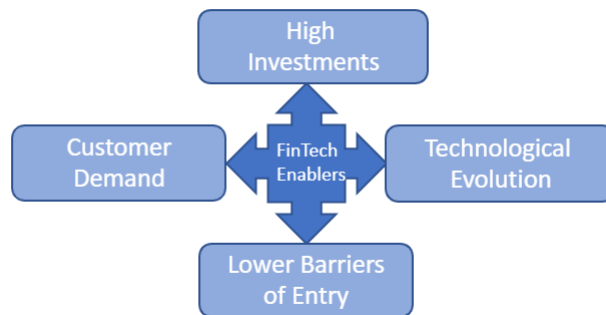


Figure 3.2: Enablers for FinTech Companies, own depiction [CRI21]

regulation FinTechs are subject to. In case of retail banks there are strong regulatory mandates which are getting stricter since the financial crises as mentioned in Section 2 [JM15]. FinTech can be seen as an envelope for services offered by non or near bank companies as an alternative to existing financial services without having a bank license [LPZG15], [SGSB17]. But of course for certain financial services the relationship and cooperation with a bank is required. The Austrian government initiated the FinTech Advisory Board, in early 2018, to discuss relevant fintech policies [Aut19b]. It remains to be seen which development the level on legal regulations will reach in the next years and which influence it will have with regard to the banking sector.

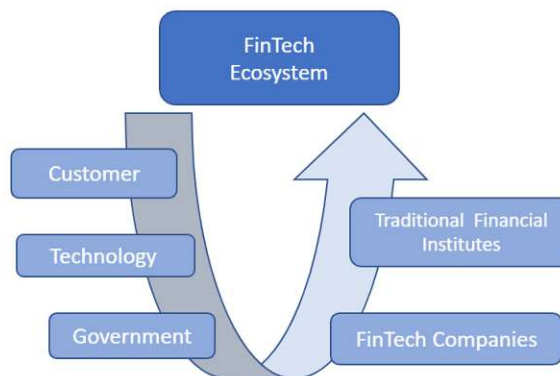


Figure 3.3: FinTech Ecosystem, own depiction based on [LS18]

For a better understanding of the rise of FinTechs it is important to analyse the FinTech ecosystem presented by Lee [LS18]. This ecosystem can be seen as an indicator for the growth of innovative FinTech solutions and for maintaining the competitiveness of

FinTechs on the financial market. The FinTech ecosystem according to Lee [LS18] consists of five elements which are: Customer, Technology, Government, FinTech Companies and Traditional Financial Institutions. The element *Customer* includes individuals and companies for whom FinTechs create and offer products and services. Customer demands and behaviour form an important segment in the FinTech ecosystem as they are significantly involved in the level of success of FinTechs. Another element is *Technology* which includes the processing of data, providing platforms for social media, cloud computing, artificial intelligence or mobile devices. Technology provides the environment for FinTechs to create and disrupt existing financial products. The third element *Government* encompasses all financial regulators a FinTech is faced to. The FinTech market is not as heavily regulated compared to the banking environment [ABB15]. *FinTech Companies* build another element of the FinTech ecosystem encompassing companies that offer financial services and products in various areas such as payments, lending, crowdfunding or insurance. Through the unbundling of financial services, FinTechs have taken on a disruptive role in the financial sector in relation to bank's business models. The last element in the ecosystem according to Lee [LS18] are *Traditional Financial Institutions* encompassing banks, stock brokerage companies and insurance providers. The contribution of all these five elements as shown in Figure 3.3, must be seen as a symbolic way of contributing to innovation in the financial sector to deliver benefits to customers.

3.2 FinTech Business Models

This section provides an insight of the segmentation of FinTech based on business models.

One important study of the German FinTech market, often quoted in the literature, is provided by the authors Prof. Dr. Gregor Dorfleitner and Jun. Prof. Dr. Lars Honruf [DHSW16]. It focused on the analysis and evaluation of the German FinTech market in the years 2007 to 2015 and on a segmentation of the FinTech business models. The main segments regarding Dorfleitner, as shown in Figure 3.4, are Financing, Wealth Management, Payments and Miscellaneous FinTechs. The segment miscellaneous FinTechs encompasses the areas insurance (InsureTech), IT and technology. According to this study, a growing rate can be observed in the business areas offered by FinTechs in Germany.

In the following subsections the main categories will be presented in detail. A look at the categorisation of retail banks in Figure 2.5 and FinTechs in Figure 3.4 show that FinTech offer almost all financial services of a bank and has also created new financial product segments such as crowdsourcing [DHSW16],[DH⁺19],[EMW17],[SL17].

3.2.1 Financing Business Model

The financing segment includes FinTech companies that provide alternative financing forms to private persons or companies such as crowdfunding or loans and factoring

3. FINTECH - DEFINITION, BUSINESS MODELS AND TRENDS

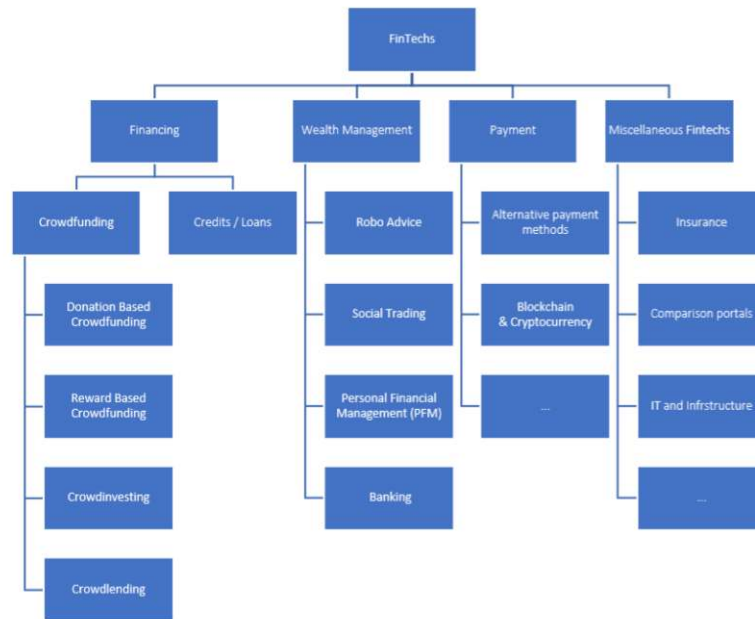


Figure 3.4: FinTech Segments according to their business application areas, own depiction based on [DHSW16]

[DHSW16]. According to Dorfleitner et al. the subsegment *crowdfunding* is one of the most known alternative financing ways. It builds a form of financing in which a large number of supporters called *the crowd* provide ideas, feedback or the financial means to achieve a common goal. The provisioning of a financial resource is done in form of donation or in exchange for future products or some form of reward to support initiatives for specific purposes, mostly through the internet [BLS14],[DHSW16]. In times of Web and social software, getting in touch and coordinating activities scattered around the world between people is simple and effective as never before [Kal11]. The role of the intermediary is given by the crowdfunding portal. Depending on it, successful financing will charge a fee between 5% and 11% of the financed amount. Other portals finance themselves through voluntary contributions from the investors and initiators of the projects [DHSW16].

According to the segmentation of Dorfleitner et al., four crowdfunding models can be distinguished:

Donation Based Crowdfunding: most of the projects that use this funding form has a charity goal. Money is collected for a certain project or topic. The donators do not receive any provisions or any compensation [Ros19].

Reward Based Crowdfunding: the idea behind this funding form is that participants

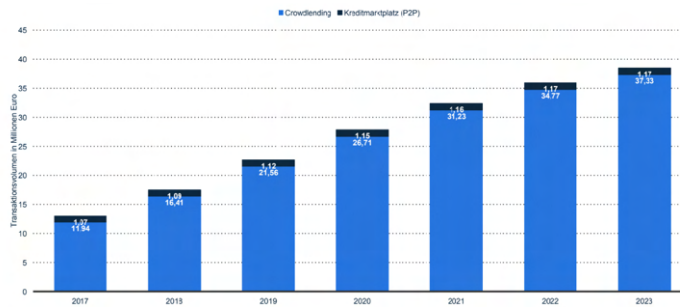


Figure 3.5: Forecast Transaction Volume Crowdlending in Austria 2017-2023,[DMO18]

receive non monetary rewards as goodies or product prototypes [Ros19].

Crowdinvesting: is another subsegment of crowdfunding, where investors receive a share, debt or a hybrid equity investment. Investors are involved in the profit of companies they invest in [KH12].

Crowdlending: allows the allocation of private or corporate loans by the crowd. In lending business various P2P (Person to Person) lending platforms have been launched in recent years. They match private lenders and borrowers directly without the involvement of intermediaries [DHSW16]. In the subsegment **loans and factoring** FinTech companies usually collaborate with a partner bank (or even several banks) to provide loans to individuals and businesses. In most cases credit volumes are low and usually no big corporate customers are included [DHSW16].

The statistic in Figure3.5 shows a forecast of the transaction volume in the FinTech market segment for alternative lending in Austria until 2023. According to the Digital Market Outlook the volume of transactions in the Crowdlending segment in Austria will be around 36.5 million EUR in the year 2023 [DMO18].

3.2.2 Wealth Management Business Model

Based on the segmentation of Dorfleitner et al. the segment wealth management encompasses four sub segments: Robo Advice, Social Trading, Personal and Financial Management (PFM) and Banking. FinTechs offer alternative wealth management abilities to customers beside traditional banks.

Robo-advice: is a fast-growing application of FinTech solutions to asset and wealth management [KSAS17]. The term “robo-advisor” refers to internet-based investment advisory services aimed at retail investors, with the main characteristic of absence of any human contact between advisor and investor [Fei15]. As part of the portfolio management system they focus on offering algorithm based and automated investment recommendations [DHSW16]. The investment instruments recommended or used by robo-advisors in their investment programmes typically include mutual funds and exchange traded funds (ETFs). Due to the high degree of automatization of working packages

charged fees are lower compared to managing funds. The finance model of robo-advice provides is related to fees, which are retained as a proportion of the investment the investors receives. European robo-advisors on average charge substantially higher fees 0.8% [KSAS17]. In the Austrian FinTech market known robo-advisor providers are Carl from Bankhaus Spängler ¹, finabro ² and Savity ³ which already has an active cooperation with the Austrian retail bank BAWAG Group AG [fut20].

Social Trading: is a form of investing that allows investors to observe and follow the trading behaviour, past strategies and portfolio of other peers or expert traders by coping or mirroring their trading strategies. The main characteristic is the high benefit investors can take from the knowledge of others [PAP12]. There are three main types of trades: *single trade* where a trader places a trade without observing other traders, *copy trade* this happens when a trader places exactly the same trade as another trader, *mirror trade* this mechanism allows user A to pick another user B and mirror his trading behaviour. For every trade user B makes, automatically the same trade will be executed for user A [PAP12]. According to Dorfleitner et al. [DHSW16] traders pay for the service a percentage fee based on the invested amount. One of the most known Austrian social trading platform is wikifolio ⁴.

Personal Finance Management: encompasses FinTech companies that offer private financial planing, administration and overview of personal finances. This can be done based on an application (APP) or online. The business model is based on one-time or annual payment of the users [CB16]. In Austria, banks like Erste Bank ⁵ or Raiffeisen Bank International⁶ offer PFM solutions to their customers as part of their internet banking.

Banking: in this part are offered products that often are part of a bank branch portfolio. The offered services are user oriented and take advantage of technological progress. IT-based current accounts count to this form of FinTechs [DHSW16]. According to this segments there already exists cooperation between Austrian banks and the Austrian FinTech baningo ⁷, where future and current customers can quickly search for bank advisor according to their needs [fut17a].

3.2.3 Payment Business Model

The segment payment is a general term for FinTechs that offer payment services, including alternative payment methods, blockchain and crypto currencies. Compared to other financial products **payments** encompass products with low complexity, but with a high frequency in use by customers. This area offers better market entry opportunities for

¹<https://carl-spaengler.at/>, accessed in November 2022

²<https://www.finabro.at/>, accessed in November 2022

³<https://www.savity.at/>, accessed in November 2022

⁴<https://www.wikifolio.com/de/at/home>, accessed in November 2022

⁵<https://blog.mygeorge.at/pfm-assistent/2189/>, accessed in March 2022

⁶<https://www.efma.com/article/detail/32204>, accessed in November 2022

⁷<https://www.baningo.com/>, accessed in November 2022

FinTechs and therefore, it is particularly attractive [DJST16]. Due to the increasing use of mobile devices alternative payments methods appeared. They include solutions of processing payment transactions via a mobile device, known as mobile payments. According to the literature the term mobile payments is an umbrella term for different functionality and payment transactions which can be conducted via mobile devices [Mal07], [Ler12].

Payments can be divided into two main markets according to the literature [Mel15], [DJST18]: the first one are **consumer and retail payments** that include *mobile wallets*, *P2P mobile payments*, *foreign exchange and remittances*, *real time payments and digital currency solutions* and the second one are **wholesale and corporate payment**.

- **Mobile Wallets** as mentioned in Chapter 2 mobile wallets enable customers to pay via their smartphones as the credit or debit card is stored as a digitised version within the wallet. Due to the huge market penetration of smartphones and the convenience it offers the innovation of *mobile wallets* was a matter of time. From the security point of view the development of tokens as a way to allow payments without disclosing the card number to the retailer is a valuable approach to increase trust in new payment solutions.
- **P2P - Mobile Payments** Person-to-person (P2P) mobile payments provide a means of transferring value between individuals via mobile devices. The second strongly growing section of mobile payments deals with P2P transactions where the transferring is done in real time which presents an faster alternative to the classic payment system [Mer11]. Sending money back-and-forth to one another via their mobile phone is possible as well.
- **Foreign Exchange and Remittances** is another area of payments being explored by an increasing number of new non-bank providers. Traditionally, organisations offering foreign exchange charged higher rates as a means of protection against exchange rate fluctuations. Technological innovation has enabled money to be exchanged in (near) real-time, reducing the currency risk. A number of alternative foreign exchange service providers have recognised this opportunity and entered the market, offering minimal costs and enabling users to buy and sell currencies directly at an agreed rate.
- **Digital Currency Solutions** Digital or crypto-currencies offer an alternative to traditional currency as a store of value and a means of transmitting value. Bitcoin is the best known crypto currency. It uses a P2P structure that enables transactions between parties without the need for an intermediary

Mobile payment solutions are offered during the last years from big players like Google or Apple. Austrian FinTechs but as well Retail banks show that they engage with the new trend and offer it to their customers. Starting with April 2020 banks like *Erste Bank and Sparkassen* and *N26* offer Apple Pay to their customers. Other banks in

3. FINTECH - DEFINITION, BUSINESS MODELS AND TRENDS

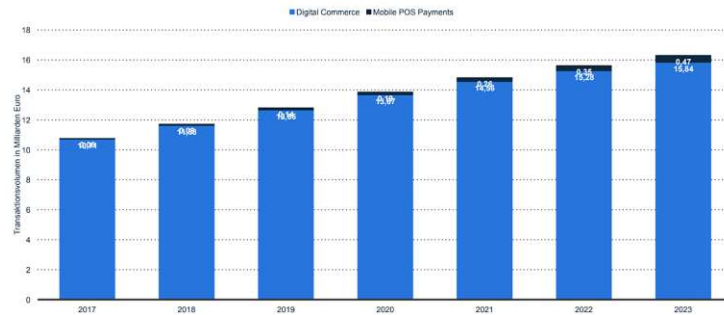


Figure 3.6: Forecast Transaction Volume Digital Payment in Austria 2017-2023 [DMO18]

Austria like Raiffeisen Banks, UniCredit, Volksbank offer the service since December 2020 [fut19],[Ste19]. The FinTech BlueCode builds an alternative to services like Apple or Google Pay, as the first European payment service provides [Ros19].

The statistic in Figure 3.6 shows a forecast of the transaction volume in FinTech Digital Payments in Austria until 2023. According to the Digital Market Outlook, the transaction volume in the Digital Commerce segment in Austria in 2023 will be around 15.3 billion EUR [DMO18].

Technological and digital innovation like near field communication (NFC) or quick response (QR) open the door for new concepts in payments, used by banks and FinTech [DJST16].

Blockchain and Crypto-Asset: build the second sub segment of payments. Bitcoin is the most known terms related to this subsegment. There are different studies and sources in the literature that handles the area of blockchain but this area is not part of this master thesis [DHSW16], [Ros19].

3.2.4 Miscellaneous FinTechs

This segment includes all other FinTechs forms that do not fit in the main segments payments, financing and wealth management. InsureTech is probably the best example as an umbrella term for innovative technology based solutions in the insurance area. According to Dorfleitner et al. solutions that offer comparison of financial products via App or Web and FinTechs that aim to solve technical problems in the financial sector can be included in this segment [DH⁺19].

3.3 FinTech - Banking Relationship

There are various publications in the literature that have examined the relationship between banks and FinTechs. Some authors state that FinTechs will provide products that will be superior to traditional financial products and show the disruptive potential

of FinTechs offering new services in several products segments [LLR⁺16]. According to a study conducted by the consulting company PwC [Pwc17], 88% of participating banks indicated that they are worried that part of their business is at risk to be taken over by FinTech companies.

Based on analyses of the FinTech market there can be examined three main categories of FinTechs according to their relationship with banks. The categories are: Disruptors, Innovators and Aggregators [Pfi16].

Disruptor: this category of FinTechs replaces banks value chain for a specific product or service.

Innovators: this category of FinTechs replaces parts of banks value chain by a new approach of doing banking business. Nonetheless these FinTechs are still dependent on a bank's platform, which means that the revenue shift away from banks is likely to be limited.

Aggregators: this category of FinTechs extend parts of banks value chain by offering services that aim to expand the customer's banking experience. A FinTech as an aggregator stands between the customer and his bank, which can lead to the loss of direct customer contact.

Based on studies [Pfi16] in the German market related to the relationship between FinTechs and banks, the trend from FinTechs perspective goes towards cooperation. Only 7% of German FinTechs try to position themselves as hard competitors against banks. 17% of the investigated FinTechs try to have an aggregation function against banks. The remaining 76% offer solution which can be easily integrated in banks existing portfolio.

In the literature there can be observed trends of banks that attempt to assimilate FinTech innovations and adapt them according to banks client needs [CB16].

Most FinTechs companies do not own a bank license. They are non-banks that offer financial services and products [DSAH14]. These FinTechs are reliant on banks to conduct their business. A collaboration is in this case existential for the FinTech company. In such cases banks enable FinTechs financial market entry [BM18].

According to the Austrian market of [Ros19], the relationship between FinTechs and banks differs according to the perspective of the observer: from the point of view of a bank, FinTechs are still seen as competitors, but there are steps towards cooperation. From the perspective of FinTechs there is a willingness to cooperate with banks.

3.4 FinTech Key Figures and Trends

In this section prevailing trends and future forecasts will be discussed. In times of innovative solutions offered by FinTech companies the landscape of financial services is changing. According to a report of Accenture company "*The Future of FinTech and*

Banking: Digitally disrupted or reimaged" [SDM15] there are two scenarios that can be taken into consideration. The first one is "**Banks fail to adapt themselves and lose out in competitive struggle**" and the second scenario is "**Banks realise importance of customers service quality, introduce innovations within the scope of their business models and cooperate with new players**". The second scenario is that, following the steps already taken by incumbents, banks are more likely to take. There are already cooperative attempts between banks and FinTechs as both parts have realised that cooperation is a practicable way. Banks began to enter into partnerships or buy start-ups.

3.4.1 Investments in FinTechs in Europe

The progress of investments in FinTechs worldwide from 2012 until the first quarter in 2018 testifies that there was a rising trend in the FinTech area. As shown in Figure 3.7 investments in 2012 were 8.90 million USD and changed to approximately 70 million USD in 2016. Compared to the results of 2018, the year 2019 was characterised by lower investments. But still investments in FinTech companies remained more than double every year prior to 2018 [KPM20], [PR18]. These results highlight the importance FinTechs enjoy in the financial sector. In Austria the volume of FinTech transactions is estimated to increase over the next years until 2025 up to 32.5 billions EUR in digital payments⁸, 2.4 billions EUR in the segment personal finance⁹, 39.9 billions EUR in lending segment¹⁰ and 81.9 billions EUR in financing segment¹¹.

According to a study conducted by the consulting company PwC [Pwc17] with banks worldwide, 88% of participating banks indicated that they are worried that part of their business is at risk to be taken over by FinTech companies. Most bankers see personal loans 64% and personal finance 50% most at risk in moving to a FinTech company. The focus on intuitive product design, ease of use, 24/7 accessibility, and faster services are seen as the most important areas to address customer retention. However, 63% of bankers worldwide see the rise of FinTech as an opportunity to expand products and services. Banks are focusing on the improvement of their operations through digital solutions and are looking to increase customer empowerment and/or control of financial matters. The major fear of incumbents is to lose business to innovative companies like FinTech companies. As shown in Figure 3.8 payments and fund transfer are two of the activities incumbent banks worldwide believe customers are already conducting with FinTech companies.

⁸<https://de.statista.com/prognosen/712892/fintech-transaktionsvolumen-digital-payments-in-oesterreich>, accessed in December 2022

⁹<https://de.statista.com/prognosen/712926/fintech-transaktionsvolumen-personal-finance-in-oesterreich>, accessed in December 2022

¹⁰<https://de.statista.com/prognosen/712867/fintech-transaktionsvolumen-alternative-lending-in-oesterreich>, accessed in December 2022

¹¹<https://de.statista.com/prognosen/712909/fintech-transaktionsvolumen-alternative-financing-in-oesterreich>, accessed in December 2022



Figure 3.7: Investments in FinTech Worldwide from 2014 until 2019, own depiction based on [PR18], [KPM20]

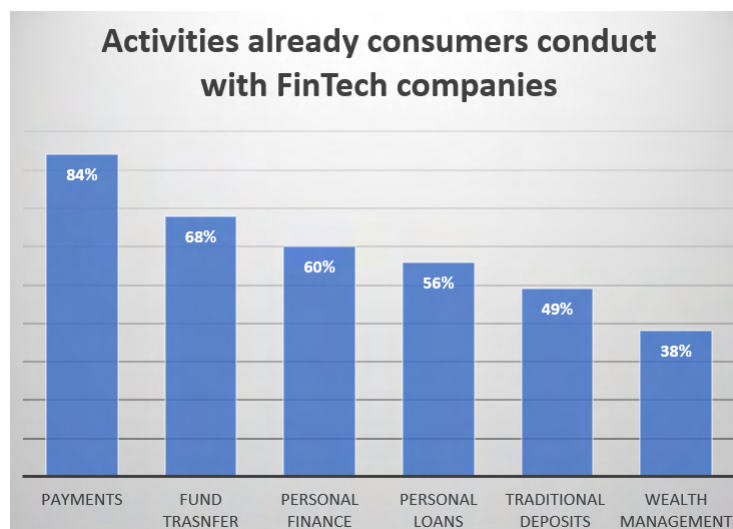


Figure 3.8: Activities incumbents believe consumers are already conducting with FinTech companies worldwide, own depiction based on [Pwc17]

3.4.2 Austrian FinTech Landscape

The Austrian FinTech market also shows a high growth rate, but still represents a relatively small segment. In general, the following trends and development steps can be observed in the Austrian FinTech market ¹², ¹³: Digital Payments is the largest market segment with an investment volume of under € 25 billion in 2022. In the neobanking

¹²<https://de.statista.com/outlook/dmo/fintech/oesterreich>, accessed in November 2022

¹³<https://financesonline.com/fintech-trends/>, accessed in December 2022

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Figure 3.9: Austrian FinTech Landscape August 2017, [Baj17]

segment a revenue growth of 49% percent is estimated until 2023. The number of users in the digital payments segment is expected to reach 7.8 million in 2027. Due to pandemic and social distancing requirements the amount of digital payment has grown.

Based on the scientific literature there is already cooperation between FinTech and Austrian banks evident. According to a study conducted by FMA [Aut19b] 53% of Austrian banks state that they cooperate with FinTechs. The cooperation started earliest in 2017, beside some exceptions. Figure 3.9 presents an overview of the Austrian FinTech landscape which shows the bandwidth of FinTechs solutions offered and which financial business areas are covered. The financial market authority in Austria has elaborated an own definition of FinTechs by treating FinTechs as financial innovations based on technology. This is a common aspect in the literature related to FinTechs as stated in Section 3.1. They focus as well on the license topic, as FinTech often do not own a bank license and therefore, there is a dependency on other banks. But in their definition the FMA [Aut19b] points out changes to the existing processes in financial sector:

"..FinTech focusses upon information technology-based financial innovations, which frequently although not always are developed by companies that do not hold licences, typically include interfaces to undertakings that hold licences, and may bring sustainable changes to the existing way of functioning of the financial sector. Companies that are active in the field of such financial market technologies are known as FinTechs. From the latest payment app through to automated customer service systems, the concept of FinTech is a broad one, and encompasses a broad array of different models, which affect many areas of supervision. Many existing financial products or services are discovering new channels via FinTechs and are being conducted by online platforms, apps or new technologies such as Distributed Ledger."

The business areas covered by FinTechs in Austria are depicted in Figure 3.10 consisting of 6 segmentations: Interfaces and other technical services for financial providers,

Crowdfunding and Crowdfunding, Social Trading, Automated advisor systems and platforms, Payments, Virtual Currency and alternative payment types. Compared to the

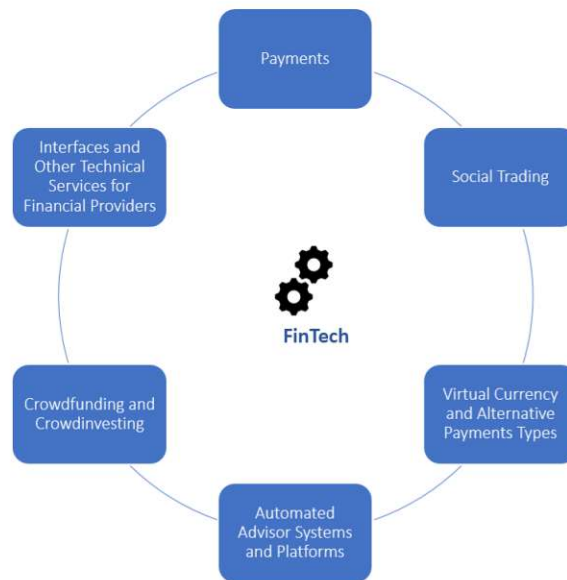


Figure 3.10: Austrian FinTech Areas according to FMA, own depiction based on [Aut19b]

description of FinTechs business models presented by Dorfleitner et al. for the German market there can be seen intersections related to the areas crowdfunding and its subtype Crowdfunding, Payments and alternative payment types including virtual currency, social trading and automated advisor systems as subtype of wealth management and at least technical services as a subtype of miscellaneous FinTechs.

Comparing the segmentation of Austrian retail banking business application areas which was done in Chapter 2 and shown in Figure 2.5 with the segmentation of FinTechs shown in Figure 3.4 results in high overlapping segments. The conclusion which can be drawn from the comparison, confirms the outputs of various studies where banks indicate their worries that parts of their business are at risk to be taken over by FinTechs [Pwc17].

It can be concluded that Austria's fintech sector is still emerging and it is expected to grow in the future. A positive growing forecast of transaction volume is taken until 2025 in all four segments of FinTech market as shown previously in Chapter 3.4.1.



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CHAPTER 4

Research Design

The previous chapters presented the theoretical part of the main research areas: banking, business model and the business model framework, FinTechs with their respective core business areas. According to the literature review it can be assumed that FinTechs and technology companies have an impact on retail banks and their business models. This chapter elaborates the research approach and describes the research design. The research method and how data collection will be conducted is another part of this chapter.

4.1 Methodological Approach - Empirical Part

The empirical part aims to improve the understanding of the changes in the Austrian retail banking sector in connection with the impact of FinTechs on this sector and the respective business models.

As this master thesis focuses on giving insight in the area of Austrian retail banking based on input from interviews conducted with experts of Austrian banking area the qualitative approach was chosen for the empirical part.

The qualitative approach according to the literature has the aim of capturing not standardised data, the conceptual focus of qualitative research concerned with understanding human behaviour from the informant's perspective [MK09], [Pat90]. The data are analysed by themes from descriptions by informants and collected through participant observation and interviews therefore, for their analysis no statistical measures are used [MK09], [May10]. Based on mentioned criteria of a qualitative approach this methodology seems to fit best the approach of the master thesis.

Qualitative techniques give a unique depth of understanding which is difficult to gain from a closed question survey.

A quantitative approach would not fit to the approach of my master thesis because the focus group in case of a quantitative approach is broader and selected randomly. As

Guide Expert Interview	
Literature Review	<ul style="list-style-type: none"> Acquire enough prior knowledge on the topic based on literature review to be able to ask questions at the level of experts knowledge. Research Questions
Definition of Experts	<ul style="list-style-type: none"> Which person has sufficient experience-based knowledge to answer the questions Define criteria to select experts Send inquiries to defined persons (Accept/)
Construct interview guide	<ul style="list-style-type: none"> Introduction of the master thesis topic and aim of the interview (Data protection; Agreement to record the interview...) Introductory questions Question blocks according to topics and sub-topics Outlook Thanks
Planning	<ul style="list-style-type: none"> Preliminary information to experts: e.g. via Email or Phone with a selection of questions Experts agree on the framework of the questions Experts agree on recording the interview Making an appointment and determining the duration of the call
Data Collection	<ul style="list-style-type: none"> Record interview Date / Time / Place
Evaluation	

Figure 4.1: Guide Expert Interview, own depiction based on [Hel19], [Hel19]

well the findings are characterized by the generalisability that can be applied to other populations but in this master thesis the focus lays on the Austrian retail bank market. The findings will be more particular and less generalizable for example, to other bank types or countries [MK09].

Having defined the purpose of analysing the influence of FinTechs on retail banking in Austria, empirical data is needed to extent the theoretical knowledge with input from experts from Austrian retail banking as depicted in Figure 4.1. The aim is to receive input from various banks because they act differently towards FinTechs and digitalisation.

Qualitative semi-structured interviews [Gal13], [BLM09] were conducted with experts in the banking and IT area in order to gain knowledge about the retail banking segment and IT trends with regards to FinTechs and their disruptive impact. The experts formed a heterogeneous target group in order to be able to look at the topic from many different perspectives. The target group consist of representatives from three Austrian Retail Banking sector with three banks.

4.2 Data Collection

Based on the literature empirical data can be collected via quantitative or qualitative methods. The quantitative approach is based on statistical analysis of standardised and not standardised data and statistical identification of relationships. In contrast, qualitative methods are used to answer questions about experience, meaning and perspective, most often from the standpoint of the participant [MH94]. Based on the purpose of the master thesis a qualitative approach was chosen to be able to extend findings from the literature with input from experts in the banking sector.

Qualitative research techniques include small-group discussions for investigating beliefs,

attitudes and concepts of normative behaviour; semi-structured interviews, to seek views on a focused topic or, with key informants, for background information or an institutional perspective; in-depth interviews to understand a condition, experience, or event from a personal perspective [MH94].

Important data sources were semi-structured interviews based on a pre-prepared guideline with questions. This type of interview enabled the interview partners to define the granularity of their answers as it provides flexibility [BSW04], [Die95].

The qualitative interviews consisted of half-open questions in order to have a better understanding of the investigated topics and backgrounds. Guided interviews were based on assumptions made in the theory and left room for more perspectives of the respondents [VW14].

A characteristic of the qualitative approach is the size of the investigated group, which often can be small. Within this master thesis interviews were conducted with experts from Austrian retail banks. According to the literature, expert interviews are characterized by the special target group of interviewees and determined about the special research interest in expert knowledge as a specific kind of know-how [Hel19].

Experts were contacted in the period November and December 2021. Data collection took place over a period of seven months, from December 2021 to June 2022 as expert interviews. The first interaction was conducted via email and over the phone. Based on Covid pandemic the interviews were conducted in writing. A form with questions was prepared and handed out to interview participants.

4.2.1 Qualitative Interview Guide

The interview guide was created based on the SPSS principle from Cornelia Helfferich [Hel19] [Hel09], which consists of four working packages: Collect, Validate, Sort and Subsume. In the first work package questions were collected related to the research field. In the second round not suitable questions were deleted in cooperation with the master thesis supervisor. In the next step questions were segmented and categories were build based on the building blocks of the BMC framework as shown in Figure 4.2.

At the beginning of each interview a summary of the topic and aim of the master thesis were presented. Formal steps like data anonymisation or written interview form were handled at the beginning of each interview as well [VW14].

The first questions focused on the impact of digitalisation and changes in market environment of retail banks. The next part handled the topic FinTech awareness of Austrian banks. Afterwards questions focused on bank core business and the impact of FinTechs in different core banking areas. The next block of questions focused on the relationship between banks, FinTechs or other technology companies such as Apple or Google. The last part of the interview focused on the future development and trends in banking sector from the perspective of interview participants.

The interviews were conducted in German as this was the mother tongue of participating experts.

4.2.2 Selection Criteria of Interview Participants

The experts for this master thesis were selected from various banks, trying to cover different core banking areas in order to have a high coverage of relevant topics to answer the research questions [BLM09]. All interview partners had to be minimum six months part of the corresponding bank. The aim behind expert interviews was to validate the results from literature research from Austrian bank's point of view and to work out new thematic areas to be able to answer the research questions. It is beneficial to have participants that have a good overview of the discussed areas. Interview participants are in roles of head of department or senior employees in banking area to ensure a maximal expert knowledge. In Figure 4.3 a list of selection criteria is presented in more detail.

After the pre selection phase the participants were contacted via E-mail or social networks.

The interview partners (IP) were pseudonymized with the abbreviation IP1, IP2 and IP3 numbered in the order in which the interviews were conducted in the period. As the aim of the thesis is to have an insight in the area of retail banking and transformation of business models due to FinTech impacts it is more important to have participants from different banks than have a huge number of experts only from one bank to assure different perspectives on the research topic.

4.3 Data Evaluation

Data was analysed based on the qualitative content analysis of Mayring [May10] with the main focus on categorisation of the content. At the beginning, all data obtained from the interviews was converted in the same format. This step is important for data comparison in order to find similarities and dissimilarities. Afterwards, parts of the text were marked with codes. The first categorisation was a deductive one, as the categories of the Business Model Canvas are taken. In a second step, an attempt was made to identify similar data segments in different interviews and to link them to predefined codes. It is important to distinguish between data segments that are not relevant for answering the research questions and the segments that appear to be relevant for the research questions. Predefined codes are based on the building blocks of the BMC framework as shown in Figure 4.2. BMC framework categories provided a structure to cluster input from the interviews and try to find characteristics between all interviewed banks that can be applied to each block. All statements were translated into English as this master thesis is written in English.

The interview results extended the results obtained from the literature according to the impact of FinTechs in the Austrian retail banking sector. The outcome was integrated in the BMC framework which will be presented in more detail in the next chapter.

The business model canvas adapted from the literature was extended by the results from expert interviews to derive recommendation with respect to retail banks business models and in further consequence to their position towards FinTechs.

4.4 Data Credibility

An important part in qualitative research is the credibility of data. According to the literature three main factors can be taken into consideration to ensure data credibility such as: reliability, validity and generalisability [NS15]. In the literature there are argues how to ensure the credibility of data in case of conducting semi-structured interviews [Bri91], [CH13].

Generalisability presents to what extent findings of one study can be applied to a population [CH13]. Regarding generalisability, it is a characteristic of the qualitative methodology that the results are less generalizable because they focus on particular findings of the small studied group [MK09]. The intention to ensure generalisability is to select a target group of experts who represent more than two banks in the Austrian retail banking sector.

The scientific aspect of reliability assumes that repeated measures of a phenomenon (with the same results) using objective methods establish the truth of findings [NS15]. As the literature in the areas digitalisation and FinTechs advances quick and due to the low standardisation of semi-structured interviews, reliability is a challenging aspect for the master thesis. But based on defined keywords in the literature search it should be possible to reach a comparable outcome. The questionnaire will as well be provided in the master thesis, but of course in case other expert are interviewed there might be a bias.

Validity is broadly defined as the state of being well grounded or justifiable, relevant, meaningful, logical, confirming to accepted principles or the quality of being sound, just, and well founded [NS15]. Related to the master thesis the validity aspect can be provided by the grounded theory research and the input from expert interview.

4. RESEARCH DESIGN

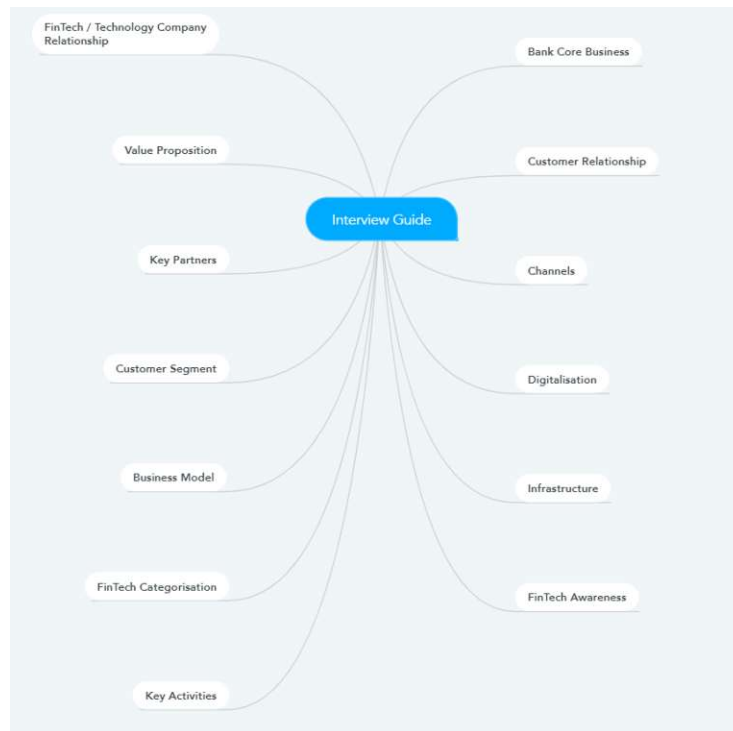


Figure 4.2: Categorisation of Interview Guide, own depiction

Selection Criteria for Experts in Interviews	
Criteria 1	C1: Expert has to be a full time employee of the pre selected Austrian retail bank
Criteria 2	C2: Expert has to be at minimum six months in a leading position
Criteria 3	C3: Expert has to work on one of retail bank areas such as payments, financing...
Criteria 4	C4: Experts selected from more than two Austrian retail banks

Figure 4.3: Expert Selection Criteria, own depiction based on [Kas00]

Empirical Findings - Analysis

This chapter presents the empirical results based on the data collected in expert interviews. Furthermore, a categorisation of the data obtained from the expert interviews is made based on the structure of the Business Model Canvas. Within the structure of the Business Model Canvas, the results from the literature and the empirical findings are analysed and clustered. Some of the interview statements in the resulting data were applicable to more than one category of the business model canvas therefore, there may be overlaps between statements and different categories. The outcome is a new elaborated version of the Business Model Canvas.

5.1 Empirical Findings vs. Literature Findings

Based on the literature findings the business model canvas framework was adjusted to depict the impact of FinTechs and technology companies on the business model of retail banks in Austria.

According to the empirical part the methodology described in Chapter 4 was applied to conducted semi-structured expert interviews.

The collected data was analysed based on Mayring [May10] content analysis, focusing on the categorisation of the content. The first categorisation was a deductive one, as the building blocks from the Business Model Canvas were used as categories to build codes. To summarize the codes chosen were deductive codes provided by the Business Model Canvas blocks which were presented in Subsection 2.4.1: Channels, Customer Segment, Key Partner, Key Activities, Key Resources, Value Proposition, Relationship, Cost Structure, Revenue. Each code or code group was given a random colour for a better understanding of thematically similar blocks as described in Section 5.2.

The tool MAXQDA was used to perform the content analysis according to Mayring [May10]. In a second step, the interview contents were put into the same format and

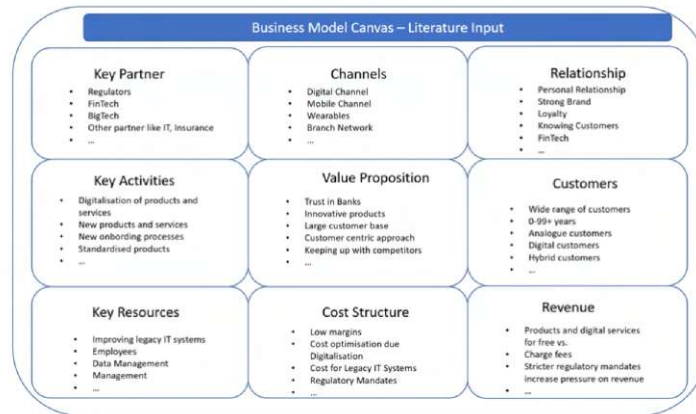


Figure 5.1: Business Model Canvas Literature Perspective, own depiction based on gathered literature

assigned to the interviewed experts IP1-IP3. The interview content then was divided into numbered paragraphs. In the MAXQDA tool, these were displayed as individual numbered paragraphs. The paraphrasing was done in another step. Paraphrasing was done to reduce content and omit all filler words and not relevant information. This was done in the same structure and chronologically according to the evaluation units.

The next step was to generalise the paraphrases and raise them to a more abstract level. The paraphrased and generalised text was better manageable to link codes to it. Once the expert's text was associated with one of the deductive categories based on BMC, codes were assigned and code units were formed. In this way, the data collected was more manageable. For each step of paraphrasing, generalisation and coding two iterations were required.

In the following subsections, all deductive blocks were dealt with in detail. At the beginning, the empirical findings were listed. Afterwards, a comparison between empirical findings and literature was made in each deductive category code. The embedded literature analysis in the business model canvas as presented in Figure 5.1 will be handled in more detail in the sections below according to each deductive code.

From a literary point of view, all blocks have undergone a transformation.

5.1.1 Channels

The following section summarizes the findings related to the segment channels from empirical perspective. As stated in Subsection 2.4.1 this block refers to the way customer segments can be reached.

A comparison between literature and empirical findings will be provided.

Empirical Findings: Digitalisation and FinTechs have changed the way banks communicate with their customers. In the last five years, existing channels have changed and new channels have been developed.

One of the first findings of expert interviews was the transformation of existing channels. Digital channels have evolved from an information, and transaction channel to a sales channel.

"..The digital channels have developed from an information channel (e.g. information on account balances and transactions) and a transaction channel for transfers to a sales channel. (IP1, item 7)"

Banks proactively offered various channels to their customer as touchpoints. The channel branch was constantly changing from one of main channels in the past to a less asked one. From the empirical results, it can be concluded that customers need the branch channel less often, as they are less likely to come to the branch in person for an appointment with a bank advisor. *"....Customers rarely come to the branch in person. If they do, it is mainly to use self-service. These include cash manipulation (mainly withdrawals - the staffed cash desk continues to be used for deposits), payment transactions (here mainly more traditional customer groups that do not, yet use online banking or automated money transfer) and account statements. (IP2, item 8)"*

Digital channels have evolved over the years. This indicates that banks are being proactive by focusing on digital channels and a multi-channel approach. Customer behaviour has changed, but a shift can be seen as banks refer customers to digital channels for various matters such as submitting product offers, providing advice or closing products. *"...The banks have reacted to this by expanding their digitalised services - but they have also proactively routed customers to this channel. Not only in account manipulation, but also in contacting customers, transmitting offers, providing advice and concluding products, both banks and customers are increasingly relying on digitalisation. (IP2, item 9)"*

According to experts, due to digital channels, there is almost unlimited access to almost all services, regardless of time and place. *"..Digitalisation enables us to offer customers banking services and products 24 hours a day, 7 days a week, wherever they are, regardless of opening hours and geographical limitations. (IP1, item 9)"*

"..As a bank, digitalisation means that customers can be contacted or accessed at any time and from any place. (IP3, item 9)"

From the interviews, it is clear that the branch as we know it today has changed over the years as customer's needs have changed and the touchpoints with customers have evolved and improved over the last five years. *"...Advice directly in the branch is provided at a low service level - simple products (account, savings, building society savings, consumer loans, property insurance) are already offered digitally or online and will be offered increasingly in the future. This is less about advice and more about "assistance in concluding online contracts". (IP2, item 10)"*

Personal communication via the branch remains important when it comes to purchase more complicated products. Customers still need the professional environment and advice from specialists in these cases. According to experts the branch as an advisory location currently has another aspect which is related to legal reasons (Distance Selling Regulations).

"...Advice in the actual sense for products relevant to advice (securities, mortgages, life insurance) is provided by specialists. This is also, because the legislator imposes stricter requirements in terms of customer protection. Some banks, especially the large retail players, use centralised specialists who are remotely connected to the customer appointment in the branch (IP2, item 11)."

The reduction in the number of bank branches is in literature and empirically confirmed [Ber22]. Even though most Austrians still have a bank branch near their home, the total number of branches has declined in recent years [S⁺20]. This phenomenon is not always approved of by participating experts in these interviews, as it is associated with customer dissatisfaction. Since not all customer segments of a retail bank are digitally savvy, there can be a certain dissatisfaction among customers who would like to do their banking in a bank with an advisor. That can be the reason why Austria retail banks only reduce the number of branches. Nevertheless, the branch network remains an important channel and banks are investing in more modern branches and modernized branch concepts with new technologies (e.g. video walls) and more space for personal advice.

"... The most visible effect of this development is a strong to drastic reduction of branch locations. More and more branches are being closed due to the now lacking customer and advisory frequency. The employees specialise, but are mostly laid off (in some banks with a social plan or through natural fluctuation). In this cycle, the distance between customers and banks increases - on the one hand, customers are annoyed that the distances are getting longer and longer and that competent contact persons are missing directly on site. They therefore, turn to specialists such as credit brokers, insurance brokers, investment advisors. These in turn are called upon by the banks. (IP2, item 12-13)"

All interview partners report of new onboarding platforms and product availability online and lean processes. A hybrid strategy of the Austrian retail banks can be identified, which goes hand in hand with hybrid customer behaviour.

Based on empirical findings it can be concluded that the block **channels** has undergone a change during last years, but the influence of digitization in general and FinTechs in particular cannot be kept apart.

Comparison literature finding - empirical findings:

A brief summary of main results is presented in Figure 5.1 and 5.2 in block channels.

Empirical findings show that channels used by Austrian retail banks have changed due to digitalisation and FinTech influence. Banks are increasingly proactively offering banking services to customers via digital and mobile channels. The above-mentioned is underpinned by literature as mobile Banking and Banking Apps already have a permanent

place in the channel segments provided by Austrian retail banks [DSAH14], [KPM18], [BALW12].

Customer preferences have changed over the years and the readiness of customers to interact with their bank via digital channels is evident [Hoo19b]. New technological developments and the influence of products and services offered by FinTechs have changed customer behaviour from passive to active one. Based on empirical findings the information and transaction channels have evolved to sales channels. Based on the literature, customers want to experience as few restrictions as possible. For many customers, it is not necessary to visit a bank branch because they want to do their business from anywhere and at any time without being restricted by working hours [Hoo19b].

But even though the number of branches in Austria has been reduced in recent years, personal communication via the channel branch remains relevant for more complex products [Ber22], [DSAH14], [KPM18], [S⁺20]. Banks have evolved a multichannel approach as a mixture of all offered distribution channels as there are still sceptical customer towards only digital channels [KS19], [Bac12].

Many banks already pursue the strategy to offer intensive service face to face for special complex financial products or legal issues. On the other hand the empirical findings match the literature findings where customer inform themselves online and visit a branch to conduct their business offline.

Due to the special advisory needs of many customers, banks have a very pronounced customer access via branches. This customer access has changed in recent years, as customers are less intensively interested in personal support than conducting their business digital at any time and any place [SARS15].

Based on literature findings a decrease in physical channels accessibility can lead customers to use virtual channels as a substitute to perform activities, especially those that are routine [SARS15]. The reduction of bank branches is in literature and empirically confirmed [Ber22]. But still there are sceptical customers towards digital channels, the branch network will not disappear completely [KS19]. Empirical findings show that banks reduce their branch network, but on the other hand invest to modernise the remaining branches to be able to offer a better customer experience.

FinTech show that customers needs and requirements can be met by using various channels. This multichannel strategy is seen by banks as a good strategy to meet needs of a wide range of customers. Omni-channel approach can be observed as a seamless and consistent interaction between customers and their financial institutions across multiple channels. Nearly all information and products are available at any channel and there are multiple touchpoints offered to customers [Men20].

It can be concluded that from literature and empirical perspective the block channel has undergone a transformation due to FinTechs and digitalisation.

5.1.2 Customer Segment

The following section summarizes the findings related to the customer segment from empirical perspective. As stated in Subsection 2.4.1 this block refers to the target group for whom a bank wants to create value.

A comparison between literature and empirical findings will be provided.

Empirical Findings: The customer segment in retail banking covers a broad spectrum of customers between 0 and 99+ years of age. Accordingly, these customers also, have different needs and wishes with regard to financial products. The way they want to interact with a bank can also, differ from customer to customer. Experts believe that a retail bank cannot focus only on a certain customer segment or serve only a certain niche. It must meet the expectations of a very broad range of customers.

"..As a universal bank, unlike fintechs, you don't serve a specific niche, but everyone from 0-99. (IP3, item 15)"

In the "customer segment" block, the interaction of customers with their bank plays an important role in its further development. This results in different customer segments that have different requirements in the way they want to interact with their Bank. The digitally savvy customers want banking services and products 24 hours a day, 7 days a week, wherever they are, regardless of opening hours and geographical restrictions. Through the digitalisation of banks, this development can now be well implemented and supported by the banks. *"..Digitalisation enables us to offer customers banking services and products 24 hours a day, 7 days a week, wherever they are, regardless of opening hours and geographical limitations. (IP1, item 9)"*

One respondent in particular noted that digitalisation does not have a clear impact on the segments themselves, but on communication and interaction with customers. Putting the customer at the centre of product and process development is essential for banks to reach their customers.

"..Customer needs are the focus. The goal is to quickly fulfil these needs with processes that are as simple and lean as possible. This is not a one-off process, but a continuous process that applies to both banks and fintechs. (IP1, item 53)"

According to experts, banks pride themselves on their large customer base, from which they can derive different customer segments if they can use the huge amounts of data banks poses in a useful way.

"..In addition, the banks can create more precise profiles of customers through the amount of data. I see it as an opportunity for the banks to create added value for the customers, but one must not only dare to digitalise business models, but should also, aim for a digital transformation. (IP3, item 9)"

However, the existing customer base is not a static homogeneous mass, but is in a constant state of change. A progressive market consolidation is taking place, in which banks will in future sell existing customers, not necessarily to FinTechs, but probably to other banks.

"..that some banks will lose customers, but rather to other banks than to fintechs. (IP3, item 56)"

Comparison literature finding - empirical findings: A brief summary of main results is presented in Figure 5.1 and 5.2 in block customer segment.

Customer behaviour has changed significantly in recent years. Customers can be seen as a mix of digital natives, hybrid, digital immigrants and totally analogue customers who switch between branches, online and mobile banking situatively [TCF12],[Pre11]. Banks have to deal with different customer needs and expectations [HS09], [Tap08], [Pre11]. This reflects empirical findings as well when experts describe the wide range of customers Austrian retail banks have to serve.

Customers expectations for online and offline banking services are being influenced by customer experience provided by product and service offered by FinTechs [Cap15]. According to Fiege [Fie12] users have advanced to gatekeepers and opinion leaders under the viewpoint of digitalisation.

Expert share the opinion that customers research offline and purchase online and contact bank advisors when it comes to complicated financial topics or products [Leh16]. Based on customers expectations it becomes easier to integrate customers needs into services to solve their problems and simplify customers lives. Taking customers in the first place and putting everything around them generates trust and loyalty as Patrick Dixon pointed out [Dix15].

Based on empirical findings banks need to create more accurate profiles of their customers based on the amount of data they collect and already own to add value for their customers. A granular segmentation and prioritisation of customers enables a more detailed consideration of customer needs. This subsequently enables a better focus on customer needs and wishes and providing lean products and processes.

An empirical outcome that is also, supported by the literature is the need for retail banks to offer financial products through multiple channels due to the wide range of customers.

It can be summarized from literature and empirical findings that customer's segmentation have not undergone a big change based on FinTechs or digitalisation. Higher online banking usage in the time period 2019 to 2021 from 63% to 71%. This is mainly attributed to the Covid-19 pandemic. According to Prof. Britta Hachenberg from the Schmalenbach Institute of Economics underpins this changed customer behaviour, because the customers of the digital age are sovereign, self-confident and well-informed informed market participants [Ber22].

Austrian retail banks still need to serve customers between 0 and 99+ years and are aware of different customer segments. The grade of changes over the years due to FinTechs and digitalisation impact relates to the interaction between banks and customers. Banks have to communicate in different ways with their customers and need to provide various touchpoints to them as parts of customers are less intensively interested in personal support than in digital communication with their bank.

Another aspect is the changing customer base over time. Therefore, there is an evident need to put the customer in focus and reevaluate customer segmentation.

Findings from literature and experts agree that on the customer base and available customer data it can be concluded that banks should look more into how they can use the know how of FinTechs and digitalisation within their IT departments to do better customer data analysis. Building homogenous groups of customers can help to generate automatically, dynamically and accurately customer segments to be able to target groups of consumers with their products and services [Rai21], [MAEK22], [OP10].

It can be concluded that from literature and empirical perspective the block customer segment has undergone a transformation due to FinTechs and digitalisation. The literature and empirical results are very similar.

5.1.3 Relationships

The following section summarizes the findings related to the relationship segment from empirical perspective. As stated in Subsection 2.4.1 this blocks refers to the type of relationship a bank establishes and maintains with customers.

A comparison between literature and empirical findings will be provided.

Empirical Findings: Experts state in their interviews that due to digitalisation customer relationship evolved in a way to offer customers banking services and products regardless from any time or geographical limitations. *"..Digitalisation enables us to offer customers banking services and products 24 hours a day, 7 days a week, wherever they are, regardless of opening hours and geographical limitations. (IP1, item 9)"*

As outlined in the Channel and Customer Segments blocks, the change in the way customers get information and interact with banking channels also, means a change in the customer relationship. Experts confirm that relationship is more about completing the purchase process rather than collecting information regarding financial products.

"..Advice directly in the branch is provided at a low service level - simple products (account, savings, building society savings, consumer loans, property insurance) are already offered digitally or online and will be offered increasingly in the future. This is less about advice and more about "assistance in concluding online contracts". (IP2, item 10)"

But all experts agree that there is still a need for personal contact and advice from bank advisors an in particular from specialist for complicated financial products and purchases. Banks need to offer the multichannel approach which contains personal components and digital ones.

"..Advice in the actual sense for products relevant to advice (securities, mortgages, life insurance) is provided by specialists. This is also because the legislator imposes stricter requirements in terms of customer protection. Some banks, especially the large retail players, use centralised specialists who are remotely connected to the customer appointment in the branch. The branch as an advisory location currently has mainly legal

reasons (Distance Selling Regulation), but also, gives the customer a feeling of advice in a professional environment and a certain sense of competence. (IP2, item 11)"

According to the experts interviewed, it is crucial to put the customer at the centre of product development. There is a shift towards customer centricity, which originates in the changing expectations of consumers. It does not make sense to blindly convert analogue processes into digital ones without putting customer needs at the centre. From banks perspective there is a goal to offer lean and simple processes and products for different customer segments.

"..It is crucial to put the customer at the centre and to rethink products. Unfortunately, many banks make the mistake and convert analogue processes into digital processes. That will be too little! (IP3, item 11)"

"..The focus is on customer needs. The goal is to quickly meet these needs with processes that are as simple and lean as possible. This is not a on-off process, but a continuous process that applies to both banks and fintechs. (IP1, item 53)"

Empirical findings point out that even for large banks it is not possible to follow every new financial trend. The touchpoints evolve and change over the years. By working with FinTechs, it becomes easier to offer customers new products that are similar to those offered by other banks or FinTechs. As banks do not have to build up expertise and internal know-how in a short period of time. *"..In addition, as a bank, it is not possible to follow every new trend or build up expertise; here, cooperation with fintech offers the opportunity to try out trends on one's own customer base. (IP3, item 43)"*

"..New ways of looking at things, and it would also, be possible to meet the needs of certain target groups by using solutions from fintechs in a targeted manner. Possibly these are areas where one has too little know-how or too few resources. (IP3, item 45)"

Empirical findings show that the relationship between customers and banks is in constant change not only due to customer's needs transformation, but as well due to competitors like other banks or FinTechs. Banks try to adapt their touchpoints and products towards customers. A similar assertion is made by different experts.

"..Definitely banks will look closely at the competition and try to adapt the products accordingly for the customers (IP3, item 58)"

"..more BigTechs coming into the market here. I believe that payment transactions must become seamless for the customer. Nobody wants to pay, so this process should move as far as possible into the background. Apple Pay or Amazon Go are examples of how the BigTechs are pushing into this market. (IP3, item 60)"

According to experts there is a shift in the way customers conduct financial business and the increased distance between them and banks due to digitalisation: *..digitalisation and the associated shift in business and the increased distance to the customer are having a massive impact on the retail divisions of the banks. (IP2, item 15)*

Comparison literature finding - empirical findings: A brief summary of main results is presented in Figure 5.1 and 5.2 in block relationship.

The personal relationship with customers can be seen as one of bank's core competences. The customer relationship block is the one that is undergoing fundamental changes in the context of digitalisation and with the emergence of FinTechs according to experts and literature. Customer demands are changing from static and easily predictable to market and competition adapting expectations and actions [JP14].

In the context of establishing relationship with customers according to Osterwalder and Pigneur [OP10] a strong brand that customers identify with is very important. In addition to the personalisation of products and a strong brand, building trust is another essential factor in improving the customer relationship. The level of recognising customers and personal characteristics of customers lead to tailored products and service recommendations [OP10].

The approach to establish customer loyalty through innovative products and outstanding services is still valid and needs to be incorporated in every bank's management strategy. This opinion is shared by empirical findings of all interview partners as putting customers at the centre of product development is seen as crucial and providing customer innovative products and stable services.

It can be concluded that from literature and empirical perspective the block relationship has undergone a transformation due to FinTechs and digitalisation.

5.1.4 Value Proposition

The following section summarizes the findings related to the value proposition segment from empirical perspective. As stated in Subsection 2.4.1 this blocks refers to the value a bank delivers to customers to fulfil their needs and solve their problems.

A comparison between literature and empirical findings will be provided.

Empirical Findings: Banks are not a discontinued model that is being replaced by FinTech. Experts agree that a large customer base and customers trust is one of the most advantages banks have.

"..Banks have the customers and fintechs may have interesting product ideas. (IP2, item 52)"

According to experts customers trust their banks due to the security, stability and responsibility banks offer. *"..Security, stability, customer orientation, responsibility, clear group value concept. (IP1, item 49)"*

Banks have understood that they must simplify their products but as well try to offer products to target certain customer groups. They have learned that it is not necessary to build know how, but to cooperate with FinTechs to achieve goals and be able to gain quick Know-How and offer products and services faster to market. *"..New ways of looking*

at things, and it would also, be possible to meet the needs of certain target groups by using solutions from fintechs in a targeted manner. Possibly these are areas where one has too little know-how or too few resources. (IP3, item 45)"

According to experts the outreach in relation to customer can be seen as a major advantage of banks towards FinTechs. *"..Outreach in relation to customers and regulatory. (IP3, item 52)"*

Only one of the experts described his bank as an innovation leader in the Austrian retail banking environment who has the goal to provide customers with access to personalised products as well as third-party providers via open interfaces (APIs) in the secure IT environment of a financial platform. Technical and IT experts work in teams and have their own budget, are responsible for the IT systems relevant to a product/service and work according to agile principles:

"..Innovation leader within the major banks. (IP3, item 54)"

With the omnichannel approach Austrian retail banks aim to integrate the different sales and communication channels to be able to offer customer a broad palette of products and services. In addition, banks use and promote digital sales channels such as the Internet and mobile banking, not only to take into account the increased importance of digital banking, but also, to actively shape the digital future.

Comparison literature finding - empirical findings: A brief summary of main results is presented in Figure 5.1 and 5.2 in block value proposition.

Speaking in terms of retail banks this block encompasses the products and services which intend to fulfil customers needs and solve their problems, which satisfies customers and creates value.

Even though banks are struggling with low margins and regulatory requirements and have faced competition from new market players such as FinTechs and BigTechs, they are still not a model that will be phased out in the next few years [JM15].

In various studies customers indicate that convenience, cost and customer service - in terms of locations and opening hours, fee-free banking and friendly service - are important factors in brand preference [JM15].

The value proposition segment is the one that concentrates how core banking areas and offered products of retail banks have undergone a change due to digitalisation and the appearance of FinTechs. The impact of digital transformation in the banking industry is evident based on changes in bank internal processes and activities [S⁺17] .

In the expert interviews it is communicated that a digital transformation is essential for banks value proposition and customer binding. From literature view point it is reported that numerous Austrian financial institutions view the digitalisation process as an opportunity to improve their services and communications with customers [Aut22] , [Aut19b]. As this segment focuses on creating value for customers, it is important to focus on changes in customer behaviour due to digitalisation. Based on literature findings

one of the main characteristic of FinTechs are the financial products and services based on technological innovations. Services and products are developed based on a very customer-centric approach. FinTechs already offer products in various areas such as payment transactions, asset management, financing and the investment sector [DHSW16]. They show that almost all financial services can be handled digitally and that completely new business areas such as crowdfunding can emerge [Pwc17]. According to experts Austrian retail banks focus on serving all their customer segments by offering an omnichannel approach to provide services and products through different channels [Pav13], [SARS15].

Keeping up with the competitors means for Austrian retail banks to offer value-added products to their customers and compared to FinTechs and GAFAs as banks have a large customers base. According to literature and expert interviews FinTechs already are offering products and services in nearly all areas like payments, funding, wealth management, IT, Open Banking Platforms, Regulatory (AML/KYC). Therefore, retail banks must rethink the way to generate value for their customer by putting customer in the centre of product and service development.

It can be concluded that from literature and empirical perspective the block value proposition has undergone a transformation due to FinTechs and digitalisation. The literature and empirical finding outcome are very similar.

5.1.5 Key Resources

The following section summarizes the findings related to the segment key resources from empirical perspective. As stated in Subsection 2.4.1 this blocks refers to resources a bank needs to create value for customers.

A comparison between literature and empirical findings will be provided.

Empirical findings: One of the key findings of the expert survey emphasise that resources need to be adjusted to best manage the impact of digitalisation and FinTech on Austrian retail banks. Employees need to change their mindset away from waterfall thinking to more agile ways of working, at least in the IT area of banks. The motto of the last few years in the IT companies of the Austrian retail banks can be summarised with the following guiding principle: *"..away from waterfall towards agile"*

"The digital transformation causes a company to transform significantly. This affects all processes, but also, means a new very agile mindset among all employees. (IP1, item 11)"

Nevertheless, it is not as easy for a bank to be agile as it is for FinTechs, as a bank has to serve a variety of customer segments: *"..As a universal bank, unlike fintechs, you don't serve a specific niche, but everyone from 0-99. This makes it difficult to be as agile as fintechs, but you can still see at some banks that IT departments are increasingly being heard. (IP3, item)"*

According to experts, bank's IT infrastructure and personnel must be raised to a new level in order to remain competitive. But banks and their IT staff cannot always be experts

in all areas and try new trends in the financial sector - this part can be compensated by outsourcing skills to FinTechs: *"..you can benefit from the different perspectives and competencies. In addition, as a bank, you cannot follow every new trend or build up expertise; here, cooperation with fintech offers the opportunity to try out trends on your own customer base. (IP3, item 43)"*

During the entire transformation process, change management is required from top level management down to the simplest employees and, above all, trust at management level and intensive support for these transformation processes.

"..Definitely, you have to break away from the old structures and processes and think in a new way. This requires people who understand the needs of the target group rather than those who have deep banking know-how. (IP3, item 13)"

Experts assign an important role to management in the transformation process because it is in their hands to drive the transformation process forward by involving employees at an early stage and also, giving them the necessary trust: *"..On the one hand, it requires the appropriate personalities who can combine and translate banking language with fintech language. This is a skill that is underestimated. On the other hand, it also, requires management that recognises such a development and gives the current bank employees the opportunity to participate in the change. Otherwise, there is the danger of a loss of knowledge, which in the end will impact on the client level (IP2, item 21)."*

The next key resource that received attention in the expert interview is the resource *"customer data"*. According to experts, banks pride themselves on their large customer base, from which they can derive different customer segments, as stated above in the customer segments block, to foster trust, loyalty and offer more customer-centric products and services. *"..the banks can create more precise profiles of customers through the amount of data. I see it as an opportunity for the banks to create added value for the customers, but one must not only dare to digitalise business models, but should also, aim for a digital transformation. (IP3, item 9)."*

According to experts, banks have large amounts of customer data. However, their use must be optimised in order to gain an advantage from it: *"..the topic of data and data management and analysis have also, become even more important. (IP1, item 13)"*

One aspect of FinTech cooperation that emerged from the interviews is the need to extract the most value from existing data from a banking perspective. Therefore, the knowledge of FinTechs in the area of data management and data analysis is incorporated: *"..Data preparation and data evaluation. (IP3, item 38)"* But still banks must comply with general data protection regulation (GDPR) requirements and rules.

The next key resource analysed is legacy systems. The legacy system as a resource can be seen as the one that prevents banks from bringing new products to market faster due to their inflexibility.

"..Banks will definitely take a close look at the competition and try to adapt products accordingly for customers, which has already taken place before the FinTechs. The question

is how flexible banks are with partly ancient legacy systems. (IP3, item 58)"

Comparison literature finding - empirical findings: A brief summary of main results is presented in Figure 5.1 and 5.2 in block key resources.

According to Osterwalder [OP10] this block describes resources required to create value to the customer, core and non-core capabilities and assets and what a company should insource and outsource.

IT as a physical resource must be subject to constant change in order to remain competitive and respond more quickly to changing customer needs according to Osterwalder and Pigneur [OP10]. Experts and findings from literature agree on this point.

The next resource according to Osterwalder [OP10] the human resource need training to be able to act adequately in a bank environment that is constantly changing. None of the experts interviewed show any aversion to the changes caused by FinTechs and digitalisation on this block. They point out that a change in thinking must take place from the top management level down to the most humble employee in a bank. It is expected from empirical findings that in the coming years a significant proportion of the skills available today within Austrian retail banks and IT will become obsolete or be replaced by completely new skills that are of greater importance in an agile and digital world of work.

The next focus, according to Milkau and Bott [MB15] is also, on the use of data in retail banking, where data analysis can be a great help in customer retention and product development. Experts from the banking sector confirm the large amounts of data that banks have and the goal of deriving the best possible information from the existing databases and using it to offer more customer-oriented products and services.

A large part of the bank's budget is allocated to the resource IT systems and legacy systems. A not insignificant part of these budgets is used for the maintenance and repair of systems that were introduced more than fifty years ago and are written in NATURAL or COBOL. The core systems of most financial institutions are not flexible enough to deliver the customer experience that consumers expect in the digital age. Legacy systems that are typically monolithic applications were designed for daily batch processing. They were simply not designed to meet the demands of today's fast-paced and technology-enabled environment [Stu19], [Pro19]. Literature and interviews with experts indicate that there is awareness of the use of new technologies in the banking sector, which will have an impact on the structural change of processes by starting with operational procedures and product development.

A changeover to new systems within banks is made more difficult by the difficult market conditions due to the low interest rate phase, which puts pressure on the classic revenue areas of traditional credit institutions. Moreover, stricter regulation from European Central Bank is also, increasing the pressure on the level of costs and earnings [Arn16].

This block is one of the blocks where the most changes can be observed. The literature and empirical findings outcome are very similar.

5.1.6 Key Activities

The following section summarizes the findings related to the segment key activities from empirical perspective. As stated in Subsection 2.4.1 this block refers to activities a bank requires to achieve value, to create revenue, to enable various distribution channels and to establish customer relationship.

A comparison between literature and empirical findings will be provided.

Empirical findings: Based on Experts fully digitalised processes provide a better customer experience as they offer to specific customer segments not only the branch as a touchpoint, but as well new onboarding processes for customers for instance: fully digital onboarding of new customers, processes to pre-approved consumer or online securities account opening and securities purchases.

According to experts it will be necessary for banks to consolidate products and reduce the amount of provided products, but at the same time offer more customer-centric services and products. As more and more FinTechs enter the market and offer their products in the payment segment banks: *"..that payment transactions must become seamless for the customer. Nobody wants to pay, so this process should move as far as possible into the background. Apple Pay or Amazon Go are examples of how the BigTechs are pushing into this market. I see areas like credit as less at risk."*(IP3, item 60)

Expert state that there is already a product consolidation ongoing as some products will be decommissioned in the future such as savings book:

"..The most impressive development can be seen in savings products. On the one hand, triggered by the low interest rate level and the measures of the legislator (keyword: abolition of anonymous savings books), but on the other hand also, by the reduction of cash manipulation and cash personnel, savings books will gradually disappear as a form of investment. Instead, accounts, which will then also, be managed digitally, will be pushed even more strongly and eventually replace the savings book." (IP2, item 17)

One of the major task is a modernisation of IT systems and innovation within a bank.

Changes depicted in the Channel block impact all other blocks and of course the block key activities because they require changes in the entire bank processes and product development. But not only the digitalisability of processes and product development are affected, according to the experts. Areas like risk management, marketing and compliance within a bank need to be transformed to keep up: *".. changes in the entire bank, where e.g. all processes have to be digitalised up to product development and processing, but also, marketing, risk management or compliance."* (IP1, item 7)

Due to cooperation with FinTechs new ways on product onboarding evolved according to experts: *".. Features range from photo transfer, PFM, securities to pre approved loans. (IP1, item 26)"* *"..Various cooperation of personal financial management (PFM), payment transactions or customer authentication (Authentic Vision)"* (IP1, item 33)

Experts confirm that due to digitalisation and FinTech influence new processes have been established such as fully digital new customer onboarding process. Or account opening and purchase of securities: *".. our new customer onboarding - fully digital, end to end. Or our pre-approved consumer. Or online securities account opening and securities purchases."* (IP1, item 45)

"..Further trend towards even greater digitalisation in order to continuously optimise the customer experience and thereby also, increase efficiencies" (IP1, item 51)

But experts are not in complete agreement when it comes to onboarding processes and the impact of digitalisation or FinTechs on them. There are experts who believe that regulatory frameworks such as PSD2 have a greater impact on onboarding processes than FinTechs:

"..In my opinion, onboarding processes have changed mainly due to the new regulatory framework PSD2 and less because of fintechs." (IP3, item 50)"

Comparison literature finding - empirical findings: A brief summary of main results is presented in Figure 5.1 and 5.2 in block key activities. According to Osterwalder and as stated in Chapter 2.4.1 key activities present actions a company does to generate value [OP10].

Typical retail financial products include settlement of payments, offering credit and debit cards, provision of savings, mortgages and personal loans. They also, include sales of savings contracts, investment funds, securities and insurance for private customers and companies [BNP13], [SH19]. Austrian banks already have started to update their key activities [Ste18a], [fut19].

Regarding loans in Austria there can be found examples of updated product portfolio by cooperating with FinTech Lendo¹ which compares consumer loans from banks and financial service providers in Austria and combines this with targeted services for users. The cooperation allows customers to choose from a wide range of digital loans and to take out the loan directly online.

Offering mobile payments such as Apple has led to changes in the key activity Payments as a new form of payment [fut19].

Major technologies already are transforming financial services [HLH⁺17] which is approved from empirical findings based on new processes and products conducted in a digital way like our photo money transfer, securities to pre-approved loans.

When digitalizing processes, they need to be agile and flexible to be able to quickly react and implement new products, services and offers.

The empirical results show that digitalisation and new market entrants such as FinTechs have an impact on this block, starting with the development of new onboarding processes and an agile way of working in the IT and banking environment.

¹<https://www.lendo.at/>, accessed in May 2020

5.1.7 Key Partners

The following section summarizes the findings related to the segment key partners from empirical perspective. As stated in Subsection 2.4.1 this block refers to partners a bank needs to run its business.

A comparison between literature and empirical findings will be provided.

Empirical findings: From the expert interviews, it can be deduced that all banks in the sample have a relationship with FinTechs. In most cases it is a cooperation, in one case it is a mixture of cooperation and competition. The experts also, agree that cooperation with FinTechs is necessary in order to gain new perspectives on how to better meet customer needs.

"..New ways of looking at things, as well as meeting the needs of certain target groups by using solutions from fintechs in a targeted way. Possibly these are areas where one has too little know-how or too few resources. (IP3, item 45)

Some banks even create a platform and innovation centres to interact with FinTechs, but empirical findings within this master thesis show that these steps are done by larger banks that see their selves as innovation leaders not by smaller ones. *"..we have done both hackthons and innovation labs in the group. (IP1, pos. 15)"* *"..There are fintech events that are organised and promoted by the bank." (IP3, item 17)*

Cooperation with FinTechs is important to outsource parts of bank business and maybe reduce costs. APIs allow for a variety of cooperation, be it with FinTechs or across industries, and can therefore, help to enter new markets and serve certain customer groups with new products. *"..In addition, as a bank you cannot follow every new trend or build up expertise; here, cooperation with fintech offers the opportunity to try out trends on your own customer base." (IP3, item 43)*

"..FinTechs show in their areas how to rethink processes. IP3"

"..Digitalisation will continue to be a daily topic together with ongoing cost optimisation. FinTechs will increasingly cooperate with banks.IP2"

In the future there will be a market consolidation in the opinion of experts where banks can lose customers to other banks. Experts point out that banks may lose more customers to other banks rather than to FinTechs. Another aspect of market consolidation according to experts is related to FinTechs disappearance as a result of banks assimilating FinTechs: *"...some banks will lose customers but rather to other banks than to FinTechs... some FinTechs will disappear or be bought by banks, so to speak a market consolidation.IP3"*

One of the experts surveyed considers regulatory requirements such as PSD2 to have a greater influence on banks internal processes than FinTechs due to their mandatory requirements banks must meet: *"..In my opinion, onboarding processes have changed mainly due to the new regulatory framework PSD2 and less because of fintechs (IP3, item 50)"*

BigTech as a partner or competitor is playing an increasingly important role according to experts. Cooperation between Austrian retail banks and Apple or Google in the sense of Apple Pay or Google Pay as an integrated service in the product range of the banks will become indispensable: *"..I see more BigTechs coming into the market here. I believe that payment transactions must become seamless for the customer. No one wants to pay, so this process should move into the background as much as possible. Apple Pay or Amazon Go are examples of how the BigTechs are pushing into this market. I see areas like credit less at risk. (IP3, item 60)"*

Advantage of cooperation with FinTechs from banks perspective based on empirical findings are innovative solutions and processes offered by FinTechs and faster time to market.

"..Fintechs can offer good, innovative solutions and processes (IP1, item 38)" *"..Faster time to market. (IP1, item 40)"*

FinTechs have already become established in areas like payment, loans, wealth management and *"..Open Banking Platforms/ Regulatory (AML/KYC)/ Core Banking Systems/ Digital Collection (IP3, item 26)"*. But is it still not clear if this status will remain as is in the future as based on experts interviews they have doubts regarding risk management of some FinTechs and there is an evident trend of FinTechs vanishing from some markets:

"..Fintechs have already become widely established in the area of payment transactions. In the consumer loan area, it remains to be seen how suitable the risk management of some fintechs is. We also, see that fintechs are withdrawing from some markets. (IP1, item 55)"

Comparison literature finding - empirical findings: A brief summary of main results is presented in Figure 5.1 and 5.2 in block key partners. Literature shows that retail banks in Austria have similar key partners such as regulator, central bank, IT subsidiary. Types of partnership can be cooperation by forming strategic alliances, acquisition or competition, joint ventures and buyer-supplier relationships [OP10]. According to empirical findings, strategic alliances between banks and FinTechs is the most common way of partnership. Findings from literature agree as according to a study conducted by FMA [Aut19b] in 2019, 53% of Austrian banks state that they cooperate with FinTechs.

In the case of cooperation between banks and FinTechs, this block is further expanded with FinTechs or other technology companies.

Results of the expert interview confirm the observations from the literature where banks cooperate with FinTechs in the areas mobile payments when they offer ApplePay as a cooperation with BigTech like Apple, photo transfer, PFM, securities up to pre-approved loans [fut19],[Ste19],[ers19], [fut17b], [AG20].

The literature concludes that regulatory requirements affect innovation in banks negatively because it slows it down [JM15],[AP16]. Empirical findings show that retail banks recognized the high potential of entering partnerships with FinTechs, as they all have strategic alliances, joint ventures or in house innovation hubs. Experts confirm literature

findings[JM15] that banks form partnership for gaining quick access to new technologies and know-how in very specialized areas.

It can be stated that the results of the literature and the empirical studies are very similar.

5.1.8 Cost Structure

The following section summarizes the findings related to the cost structure segment from empirical perspective. As stated in Subsection 2.4.1 this block refers to costs needed to operate and run business.

A comparison between literature and empirical findings will be provided.

Empirical findings: Retail banks want to achieve more efficiency and cost savings through automation and digitalisation. Digitalisation could be a big factor for all banks to reduce costs, but also, to cooperate with FinTechs in areas where banks themselves lack the know how. Based on the empirical findings two main code words could be derived: cost optimisation and cost pressure: *"..Fully digitalised processes allow cost optimisation in various areas and represent a better customer experience. (IP1, item 43)"*

On the other hand, FinTechs and their competing products do not reduce the cost pressure for banks. On the contrary, they have to invest more in order to remain competitive not only with other banks but also, with FinTechs and Big Techs.

"..Cost pressure has always been an issue and is intensified by competitors. (IP2, item 57)"

On the other hand empirical findings conclude that banks do not pursue the goal of offering products without fees in order to imitate a few trends. At this point experts conclude that there is no impact of digitalisation, or FinTechs in the cost structure towards customers: *".. nothing has changed in the cost structure (towards the customer) of the banks. We can see with neo-banks that the "everything for free" concept is not sustainable and that these market participants also, have to row back. (IP3, item 48)"*

Branches and personal who works in branches are cost intensive assets in the opinion of all interview partners. Due to process changes and changing customer needs, there is an advantage for retail banks to save costs in the branch network and personnel costs, and to be presented only with the cases that have a high probability of being carried out at their own expense:

"..The advantage for the retail banks is that, with saved personnel costs, they are only presented with those cases whose implementation has a high probability. (IP2, item 14)"

"..On the one hand, it requires the appropriate personalities who can combine and translate banking language with fintech language. This is a skill that is underestimated. On the other hand, it also, requires management that recognises such a development and gives the current bank employees the opportunity to participate in the change. Otherwise, there

is the danger of a loss of knowledge, which in the end will impact on the client level. By this I mean a greatly reduced, because standardised, product range that can no longer be covered. On the one hand, this saves costs for the retail banks, but on the other hand, sources of income are lost (IP2, item 21)."

Comparison literature finding - empirical findings: A brief summary of main results is presented in Figure 5.1 and 5.2 in block cost structure. In the literature digitalisation present potential to reduce costs [BH00]. The underlying logic is to downsize cost intensive services at bank branches. The digitalisation of simple products leaves more advice-intensive services as products whose conclusion requires more intensive advice and therefore, entails a consultation in the branch. Banks can also, charge fees for these services and are sure that customers will make use of them. Legacy IT system and employee trainings can be seen as the block that needs up-front investments. The ability of a bank to do digital transformation according to the literature includes the financial aspect as it can be seen as decisive in the transformation process [MHB15]. From empirical perspective branches and personal who works in branches can be seen as well as cost intensive assets.

Employee training to a new way of agile working is important as derived above the during empirical analysis and needs to be taken into consideration from cost perspective. Another aspect is employee fluctuation based on reduced branch network that may impact the cost block.

Based on literature Low interest rate phase and stricter regulatory mandates faces a pressure on cost level for banks [Arn16]. This aspect is not handled by experts in the interviews as they see cost pressure as an ongoing fact for retail banks due to competitors and not directly related to FinTechs, or digitalisation.

It can be stated that the results of the literature and the empirical studies are very similar.

5.1.9 Revenue

The following section summarizes the findings related to the revenue segment from empirical perspective. As stated in Subsection 2.4.1 this block refers value for what customers are willing to pay.

A comparison between literature and empirical findings will be provided.

Empirical findings: According to Osterwalder revenue presents the revenue generated by selling services and products to customer [OP10]. Revenue can only be generated if customers are willing to pay for products a bank offers to them. According to experts banks experience profit pressure based on low interest rates of last years.

"..The situation is still very tight due to low interest rates. (IP2, item 65)"

On the other hand customers are used to receive services for free from FinTechs, or other competitor banks which makes it difficult for surveyed banks to generate revenue.

Nevertheless, according to experts, the concept of "everything for free" is not sustainable, there can be seen a rollback of these models.

"..One can see with neo-banks that the "everything for free" concept is not sustainable and that these market participants also, have to roll back. (IP3, item 48)"

Comparison literature finding - empirical findings: A brief summary of main results is presented in Figure 5.1 and 5.2 in block revenue. Based on the new key activities and key partners, it can be deduced that there are some new ways for banks to generate revenue. Nevertheless, profit pressure based on low interest rates is still ongoing as derived from expert interviews. Based in literature review if the current business models and structures are retained, many banks will reach the limits of their performance in view of the balancing act between the need for massive cost reductions on the one hand and the necessary adjustment of earnings structures on the other [SH19].

From the literature's point of view, digitalisation offers new opportunities for making profits for banks and banks look for new ways of generating revenue streams that customer are willing to pay for. The 'everything for free' concept is not supported by interviewed experts. According to experts a market consolidation will happen due to digitalisation and new entrants and all this together can lead to new revenue models. Offering more customer-centric products can increase the willingness of customers to pay for bank products and services. A faster time to market and more innovative products can lead as well to new revenue models. Based on the outcome from expert interview only two factors could be identified to describe the transformation of these blocks. Digitalisation and cooperation with FinTechs can offer new ways of revenue creation.

5.2 Business Model of Austrian Retail Banks - Outcome

At first the Business Model Canvas was adapted and created based on systematic literature research outcome as depicted in Figure 5.1.

The new and adapted structure of the new BMC followed the basic framework from Osterwalder. From analysis in Section 5.1 it can be derived that digitalisation and FinTechs have impacted every block of the business model canvas. For a better understanding of the new Business Model Canvas depiction as shown in Figure 5.2 thematically similar blocks are presented in the same colour code. The definition of the colours is random as presented below: Value Proposition segment in yellow, Infrastructure segment in blue, Financial segment in rose and Customer segment in green, Risk segment in red.

As stated at the beginning of this chapter the BMC was used to help to understand the impact of FinTechs in core banking areas and to work out recommendations. The empirical analysis shows that all BMC blocks have undergone a change but some blocks more than others.

Figure 5.3 presents some metrics as outcome of the content analysis. It indicates that the deductive code value proposition was the code most assigned to text gathered from

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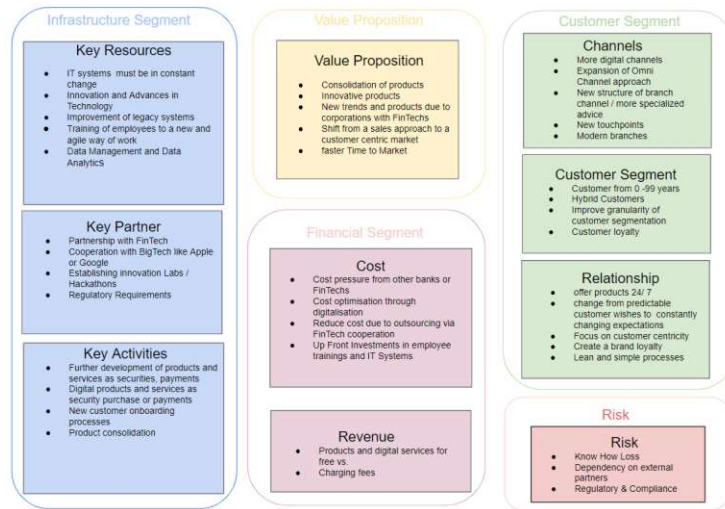


Figure 5.2: Business Model Canvas applied to Austrian Retail Banks based on outcome from expert interview, own depiction

Colour	Code	Cod. Seg.	% Cod. Seg.
●	Value Proposition	17	18,68
●	Key Activities	16	17,58
●	Key Ressources	13	14,29
●	Relationships	12	13,19
●	Channels	10	10,99
●	Key Partners	8	8,79
●	Customer Segment	7	7,69
●	Cost Structure	4	4,40
●	Revenue	2	2,20
●	Risk	2	2,20

Figure 5.3: Content Analysis Codes (Value Proposition block in yellow, Infrastructure blocks in blue, Financial blocks in rose and Customer blocks in green, Risk block in red), own depiction according conducted content analysis

expert interviews followed by key activities, resources, relationships and channels. In the middle section are blocks like key partners and customer segment. Based on expert input it was not possible to derive more input regarding the financial segments such as revenue and cost structure. A new block named Risk could be derived from expert interviews as an inductive code based on the content analysis.

Austrian retail banks have already created a digital strategy and are at different stages in this process. The aim of the various strategies is to maintain their competitiveness against FinTechs and BigTech, but also, against other banks. The outcome for each block is presented in Figure 5.2.

A new business model canvas was created as an outcome of the content analysis including

all deductive codes known from Osterwalder's BMC and one new inductive code called Risk.

The next sections present a summary of the results of the empirical study in combination with the literature review. The aim was to give an overview of possible recommendations for the Austrian retail banking sector. The analysis follows based on the structure of the BMC [OP10] and will start with the infrastructure block based on which includes key partners, key activities and key resources. Further value proposition and customer aspect including customer segments, channels and relationship will be displayed. The new version of the BMC as shown in Figure 5.2 will conclude this chapter.

5.2.1 Infrastructure Aspect: Key Partners, Key Activities and Key Resources

This section presents findings related to infrastructure related segments such as key partners, activities and resources.

- The Austrian retail banks are aware that they need to improve their way of working and have moved, or are moving towards an agile way of working by switching from waterfall models to more agile models such as Scrum and Kanban.
- Austrian retail banks are aware that they need to invest in staff and build up know-how to improve an agile way of working. They are aware that they not only need know-how in deep banking topics, but as well know-how to understand their customers. Improving digital skills of employees is another essential factor for banks related to key activities.
- Austrian retail banks have started to lay their focus in digitalisation to increase efficiencies.
- In the Austrian retail banks, first steps have been taken towards a change in awareness, but much remains to be done, from the top management level down to the most basic employees.
- Austrian retail banks have started with intensive co-working between business and IT experts to be able to combine bank business and IT know-how and develop suitable solutions iteratively in short sprint cycles with the help of agile working methods.
- FinTechs are competitors for Austrian retail banks, but banks have understood that cooperation with FinTechs is necessary to acquire technological know-how and bring products faster to market, as FinTechs are not burdened by legacy systems like banks are. The strategy seems to be to reflect on own strengths and compensate weaknesses with FinTech cooperation.

- Cooperation with FinTech can be seen as essential as a bank does not have the ability to follow every trend and build in-house know-how.
- Banks arrange various competitions like Hackathons to attract new FinTech companies and be able to monitor the FinTech market.
- IT departments are put more in focus and in-house innovation is becoming more important. Bigger Austrian retail banks have created innovation labs.
- The next aspect that needs more attention and improvement is to put customers in the focus and try to build up products and service as customer-centric as possible. A more customer-centric approach needs to be improved.
- Austrian retail banks have understood that providing lean and easy processes and products for customers and continue focusing on digitalisation of products and services is important.
- Austrian retail banks have started to establish new onboarding processes to remain competitive with competitors in core banking segments like payments or credit.
- Austrian retail banks have started new onboarding process with respect to regulatory mandates.

5.2.2 Value Proposition Aspect

This section presents findings related to the value proposition aspect.

- Austrian retail banks are aware that they have to consolidate their products and provide lean and innovative products to their customers.
- Helping to shape new trends and offer products and services for specific customer groups is often only possible through cooperation with FinTechs
- There is a shift from a sales-oriented approach to a customer-oriented approach, which still needs to be improved.
- One of the main goals is to be able to bring products and services faster to market.

5.2.3 Customer Aspect: Channels, Customer Segment and Customer Relationship

This section presents findings according to customer related segments such as channels, customers and relationship.

- Austrian retail banks customer base includes a wide range of customers, from very analogue to very digitally savvy customers.

- Austrian retail banks are aware of their big customer data and need to focus more on data management to be able to create more granular customer segments and offer customer more appropriate products and services.
- The Austrian retail banks are focusing on digital channels and have reduced the branch network in recent years.
- Still the channel branch remain important when it comes to complex financial products therefore, a modernisation of branches is in focus.
- The omni-channel approach is being pursued by banks and needs to be expanded to offer customers new touchpoints.
- Putting the customer at the centre of product and service development is not, yet consolidated on a large scale.

5.2.4 Financial Aspect: Cost Structure and Revenue

This section presents findings according to financial segments such as cost and revenue.

- Banks still are faced to cost pressure from other competitor banks or FinTechs.
- Digitalisation and cooperation with FinTechs provides new approaches for cost optimisation.
- Transformation in IT Systems and new way of working are related to up front investments.
- From revenue perspective there are different approaches regarding fee charging between banks and FinTechs. The all for free approach is not the one which is pursued by banks.

5.2.5 Risk Aspect

An aspect that was not included in the Business Model Canvas as a frame is the compliance and risk part. Experts conclude that within cooperation with FinTechs retail banks need to be mindful not build dependence on external providers. This can be seen as an inductive code that can be included in the Business Model Canvas.

- Loss of know-how through reduction of the branch network and consequently staff reduction.
- Dependence on external providers and not availability of in-House know-how.
- External factors that cannot be influenced quickly, such as a pandemic.

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- Onboarding process with respect to regulatory mandates. Meeting regulatory requirements poses a crucial challenge for banks.
- Including Marketing, Risk and Compliance as key segments when analysing or planing transformation within a bank.

Conclusion and Further Work

In this chapter the most important findings will be presented and the defined research questions will be answered. Limitations of the thesis will be discussed. The outlook and conclusion concludes this chapter.

6.1 Discussion of Research Questions

The business model canvas from Osterwalder and Pigneur's [OP10] was used to examine the impact of FinTechs and digitalisation on Austrian retail banks and to identify core business areas that have undergone a transformation. A qualitative study was conducted to find out current developments in Austrian retail banks. Digitalisation, competitive solutions from FinTechs or BigTechs, but also, changing customer behaviour are some aspects that have developed over time and are causing changes in Austrian retail banks. In general, the findings from the literature and the empirical part of the master thesis show that Austrian retail banks are aware that they need to adapt their business models and mindset to remain attractive to customers.

- *RQ1: Which core business areas can be identified in Austrian retail banks that have undergone a structural change by enabling the use of FinTech offered solutions?*
- *RQ2: What are strategic orientations of traditional Austrian banks towards FinTechs currently and which recommendation can be conceived for the future for the banking sector?*

There are already measures banks have taken as presented in Chapter 5. Almost all blocks of the BMC have already been affected, and the banks have taken action.

6. CONCLUSION AND FURTHER WORK

According to the first research question raised, the infrastructure aspect in terms of key resources, key partners and key activities is influenced by FinTechs and digitalisation. In order to keep up with competitors, Austrian retail banks have realised that they need healthy and strong IT systems. Intensive cooperation between employees with in-depth banking knowledge and technical know-how is essential as a new way of working. There is need to invest in employing and training experts committed to staying up-to-date with fintech expertise or as one expert (IP2, item 21) stated:

"..it requires the appropriate personalities who can combine and translate banking language with fintech language. A skill that is underestimated."

A new way of agile working is already seen as essential from the bank's perspective. However, the path towards this is still open, as banks are not working on a greenfield basis. There is a shift towards a stronger focus on combining banking and technical expertise to iteratively develop appropriate solutions in short sprint cycles using agile working methods. Banks are already focusing on improving their digital capabilities and establishing new ways of thinking to be as customer-centric as possible, rather than just focusing on financial products. IT systems need to support rapid technological progress, and it is not clear how easy they can manage this aspect based on their existing infrastructure. However, the empirical results show that the awareness is already there and banks have taken action.

The influence of FinTechs and digitalisation is evident in the block partnership as well. Retail banks have already started to work with FinTechs to build up expertise in areas where there is not enough in-house know-how. This represents a key aspect that analysed banks are aiming for. Austrian retail banks surveyed report cooperation with FinTechs in core business areas such as payment transactions, securities and loans.

FinTechs face threat towards Austrian retail banks with their lean products and services especially in the payments area. In the past, the entire payment transaction process was handled by a bank. In recent years, core business areas such as payment transactions have increasingly been offered by FinTechs, which are thus, competing with banks. There are no signs that this trend will stop here, but could continue in other business areas such as loans or securities. BigTechs present another pillar that affects core banking areas as they are pushing into the market and influence products and services offered by Austrian retail banks. However, despite solutions offered by FinTechs in these areas, the retail banks surveyed still have a firm grip on core business areas such as payment transactions, credit and asset management. Of the Austrian retail banks surveyed, no bank has, yet been forced out of the market by a FinTech or had to completely hand over individual core areas such as payment transactions or lending to FinTechs. Sticking to the core financial areas of banking, experts see areas such as lending as less threatened by FinTechs due to strict regulatory requirements, based on empirical evidence.

Customer relations and communication are in a transitional phase similar to the areas mentioned above. Communication with customers requires the introduction of part-

nerships in which new collaborations between banks and FinTechs develop in order to introduce new products and services and target specific customer segments. As Austrian retail banks have to serve a wide customer range from 0-99+ years old customers they need to deal with various customer segments with different needs and skills. Interaction channels are becoming less physical and more digital. Customers appreciate 24/7 availability from any place and device. Focusing on multichannel approach and modernisation of branch network as already started by Austrian retail banks are developments that have been started and need to be further developed by banks to meet customer expectations.

But still it can be summarized that banks counter FinTech success with in-house, purely digital subsidiaries. Experts see their own bank as innovative but there is maybe a dependency with bank size to be able to be and remain innovative. Internal innovation via Innovation labs and hackathons are already established in some banks.

Banks are meeting the challenges of digitalisation by working with FinTechs that offer technology-enabled financial services and novel services. The cooperation with FinTechs is attractive for banks as FinTechs can offer good, innovative solutions and processes. Austrian retail banks, based on empirical findings see that FinTechs offer new product perspectives and enable banks to meet the needs of specific target groups for which a bank does not have the necessary expertise or does not want to invest directly. What can be seen from empirical findings is a catch-up by established and financially stronger financial service providers. Austrian retail banks cannot follow every trend. FinTechs enable a middle ground to try out new trends.

Given the opportunities and challenges associated with the digital transformation of the financial industry, the majority of banks have by now adapted a digital strategy that outlines how digital transformation can occur. But still the digital strategy can be improved to bring all Austrian retail banks on the same level.

Banks need to take a close look at the competition and try to adapt the products accordingly for their customers, which has already taken place before the FinTechs. It is evident that legacy systems pose challenges to banks and make flexible actions difficult. Improvement in this pillar could be extracted from experts interview in a way that already there is awareness to invest in IT systems and management consent.

Larger banks that have defined innovation and digitalisation as a goal in their banking strategy are more likely to enter into cooperation with FinTechs while small banks focus on product development by themselves or tackle to already known services and products. This was evident from expert interview as the analysed sample included two bigger banks and a smaller one. Analogies between literature and expert interviews were evident regarding creating enhanced customer-oriented business models for customers.

An empirical observation was that it depends on the size of a bank whether it cooperates more or less with FinTechs. As the sample within this master thesis is too small it can be part of future work to compare if the size of a bank is crucial for the extent of change in the business model and willingness to be more open to FinTechs and BigTechs.

6. CONCLUSION AND FURTHER WORK

Banks are not being pushed out of the market, but the value chain is changing and will change in the future. While in the past the entire payment transaction process was handled by a bank, small parts are now being taken over by FinTechs and this trend will also, continue for other products. As an outlook for the future, experts see that FinTechs have largely established themselves in some areas such as payment transactions. In other areas, such as loans, there are various products offered by FinTechs, but experts do not see a major threat as it remains to be seen how suitable the risk management of some FinTechs will be. This is seen by experts as a strength that will remain with the Austrian retail banks.

The influence of digitalisation and FinTechs on the transformation process of financial products and services is undisputed. As a recommendation for the future, it can be deduced that it would be too short-sighted to rely on a 1:1 transformation from analogue to digital processes. A precise analysis of customer needs is essential.

Laying the focus on more investments in infrastructure like IT Systems and human resources will be essential for banks.

Nevertheless, cooperation between FinTechs and financial institutions will remain a recommendation to quickly close knowledge gaps. However, it is not easy to achieve this, as the culture, management and technology of FinTechs are very different from traditional financial institutions. There is also, a dependency on the size of the financial institution and the business orientation.

Retail bank should create value proposition inline with customer needs. Therefore, it is important for companies to evaluate and reevaluate their value proposition strategies. To compare with other banks on the one hand and as well with FinTechs on the other hand.

Nevertheless, banks need to improve their mechanisms for evaluating and using the huge amounts of data they are sitting on.

However, it emerged from the expert interviews that the flexibility and implementation of an agile way of working depends on the size of the banks. Partnerships between banks and FinTechs have existed for a long time, but they also, depend on the size of the bank. It is mutually beneficial as established banks have access to faster and more innovative technologies and solutions, allowing them to bring innovative solutions to market more quickly. FinTechs get access to a large customer base that banks have, and this is the biggest advantage for FinTechs, apart from not having to apply for a separate banking licence.

There could not be identified any area where banks can maintain their service only with FinTechs, these can be seen as add-on where banks do not want to build in house know how but can cooperate with FinTech to offer new services or niche products for a small certain segment of customers.

6.2 Limitations

The study is limited to Austrian banks as in the literature there are various studies which handle the shift in banking sector other countries for example, in Germany. This work does not have the aim to study the Austrian FinTech landscape and perform a classification of FinTechs in Austria. The regulatory part PSD2 and its impact in the coexistence of FinTechs and banks is another limitation of this master thesis because this area was not investigated. No questions of the semi structured interview were prepared to cover this part and there were no experts of PSD2 are under the participants. As the empirical part is based on a qualitative approach with expert interviews it has limitation based on the willingness of interview partners to participate and their scope in answering the questions.

Due to semi-structured interviews generalisability is limited [CH13]. Interviewing more employees of selected banks or extend the data sample by additional banks could provide more general insight. This may be an indication for future work.

The business models canvas framework focuses on the interconnection within one company, but still it can be useful to examine the development of each of the areas during a certain time. Maybe there can be developed other tools or frameworks that analyse and presents the interconnection between more than one company.

Another limitation of this master thesis is the small sample due to lack in finding interview partners willing to attend the interview. From eight experts only three replied and agreed to answer interview questions. Nevertheless, the code sample can be extracted and used for deeper analyses.

The validity of the questionnaire can be classified as good, as it was created on the basis of the literature research and revised by the supervisor. The participants of the interview were selected according to criteria that ensure a high quality of content based on their experience with the topic. As the questioner is provided a repetition is easy to conduct, but it may be difficult to reproduce and achieve similar results as it may not easy to reach the same persons and due to contact change in the investigated area.

According reliability as mentioned in Section 4.4 it was a challenging aspect for the master thesis. But based on defined keywords in the literature search it should be possible to reach a comparable outcome, but there might be a bias.

6.3 Future Work

Within this master thesis it was provided a qualitative view on Austrian retail banking sector and the impact of FinTechs and digitalisation on bank business models from banks perspective. The outcome can help further researchers to develop frameworks to examine structural change of retails banks in Austria from different viewpoints. It can help banks to adjust their future strategy to remain competitive and profitable from digitalisation and FinTechs.

The interviews conducted in the empirical part focused on analysing bank's perspective but not the viewpoint of customers. Investigating this aspect could be interesting for banks, as customers are increasingly playing the central role in the transformation process of banks, as pointed out by experts. The focus could be on analysing BMC value proposition block from a customer perspective.

Another aspect that can be treated within a future work is to examine the topics from a quantitative point of view and include bank employees in the research to focus more on mindset and company culture aspects. This can help to derive future measurements that can be incorporated in company culture and way of working.

An already known phenomenon is the fact that FinTechs are withdrawing from some markets [BBH18], it might be of interest to analyse and include the viewpoint of FinTechs too. Concrete reasons for the disappearance of FinTechs from the markets were not part of this master thesis. It would be helpful for banks to see if this aspect is related to an already holistic digitalisation strategy of Austrian retail banks or if it is related to evolving stricter regulatory requirements.

The master thesis deals with the relationship between banks and FinTechs in general, but does not focus on specific cooperation in the empirical part in order to analyse them in more detail or to examine the duration of the cooperation between banks and FinTechs.

The influence of artificial intelligence (AI) and its impact on retail bank business models is another important aspect that can be analysed in the future. Especially with the focus on cost reduction through the use of AI solutions. AI is not a technical buzzword but a way to open new fields of application that were considered as complicated or not feasible for banks from a cost perspective.

6.4 Conclusion

The findings from the empirical analysis could prove that the influence of digitalisation and FinTechs has an impact on Austrian retail banks business models. Findings from the literature and empirical analyses coincide in the context of this master's thesis. The impact relates to all blocks of the Business Model Canvas though some blocks were more impacted than others. The retail banks studied are aware of their advantages in terms of a large customer base and customer trust, but also, of the change that is coming to their IT systems or is already in the process of breaking through. Also, the focus on new agile ways of working from branch staff to IT departments was pointed out in all surveyed banks.

Thus, a proactively initiated transformation process is one approach to future success in order to survive the competition and other challenges for retail banks. A digital strategy that incorporates all resources like employee mindset and management consent, IT systems modernisation, cooperation with partners, but as well customer relationship can be the approach Austrian retail banks need to head for.

Another aspect is the change in mindset and agile way of working. More intensive cooperation between business and IT departments and responsibility for a product that can be developed in an agile process and quicker time to market is helpful.

Strict and binding regulatory requirements on banks are a big disadvantage banks have over FinTechs. Legacy systems that banks rely on are the next big disadvantage against FinTechs in terms of flexibility. Even though banks are already working on upgrading their IT systems, this is not easy as it is a very costly and time-consuming process. Banks need to ensure that their systems are functional and fail-safe at all times, especially during a potential transformation.

On the other hand, the main advantage of banks is the mapping of the entire financial life cycle due to the huge amount of customer data that banks have.

Partnerships between banks and FinTechs have existed for several years. However, the empirical results of this master thesis show that this strategy is increasingly pursued by large banks, as opposed to smaller banks. The cooperation between banks and FinTechs is beneficial for both sides. Established banks gain access to faster and more innovative technologies and solutions due to cooperation with FinTechs. In this way they can bring innovative solutions faster to the market. FinTechs get access to a large customer base that banks have, and this is the biggest advantage for FinTechs, apart from not having to apply for a separate banking licence.

Digitalisation and competition from FinTechs and other banks will accompany the future of Austrian retail banks.

Proactive action and planning of an end-to-end digital strategy that does not make a 1:1 mapping of analogue products and processes into digital ones, but puts the customer at the centre of product and process rethinking, can be given as a recommendation for banks. There are expectations that FinTechs will increasingly cooperate with banks. Banks counter FinTech success with own, purely digital subsidiaries by upgrading and investing in their IT systems.

The new version of the Business Model Canvas developed in this Master's thesis can be used as an instrument to analyse and test the change in one's own company. As a conclusion, it can be stated that banks should adapt to the trend of digitalisation and FinTech cooperation in order to remain competitive in the long term.

Interview Guideline

1. Welche Position haben Sie derzeit und welche Kernbereiche gehören zu Ihrer Position?
2. Wie lange sind Sie schon in dieser Position tätig?
3. Wie hat Digitalisierung das Geschäftsmodell im Retailbanking in den letzten fünf Jahren verändert?
4. Wie hat sich Ihrer Meinung nach, das Umfeld des Retailbanking in Bezug auf angebotene Finanzprodukte und Dienstleistungen aufgrund von Digitalisierung in Ihrer Bank verändert?
5. Erforderte Ihrer Meinung nach, die digitale Transformation und der Einfluss von FinTechs¹ neue Kernkompetenzen in Ihrer Bank?
6. Wenn Ja: welche Auswirkungen auf interne Prozesse konnten in den letzten fünf Jahren beobachtet werden?
7. Gibt es zentrale oder dezentrale Aktivitäten in Ihrer Bank, die den Einfluss von Digitalisierung behandeln wie zum Beispiel Hackathons oder Innovation-Labs, um nur ein paar zu nennen?
8. In Abbildung A.1 finden Sie eine Darstellung der FinTech Segmente basierend auf der Literatur [DHSW16]:
9. Welche Segmente der FinTech Branche sind Ihnen bekannt-wählen Sie bitte aus bzw. ergänzen Sie diese Auflistung:

¹FinTech wird im Rahmen meiner Masterarbeit definiert als: eine Kombination von Finanzdienstleistungen und Technologie, welche im Finanzbereich angewendet wird, um innovative Finanzdienstleistungen anzubieten oder bestehende Finanzprodukte zu verbessern [DSAH14]; [ZDS16b] neue Kernkompetenzen in Ihrer Bank?

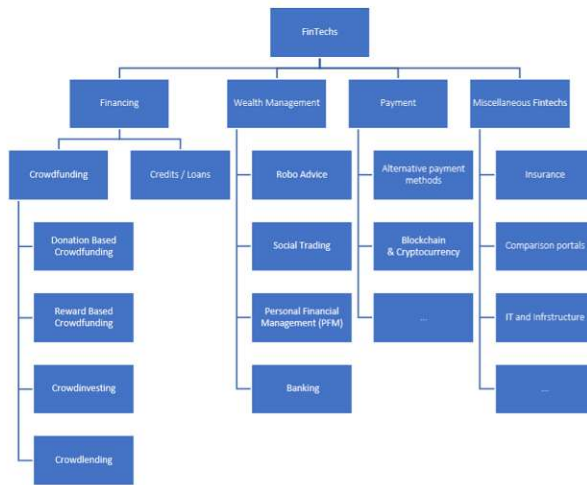


Figure A.1: FinTech Segments according to their business application areas, own depiction based on [DHSW16]

- a) Zahlungsverkehr (Alternative Zahlungsmethoden, Blockchain)
 - b) Finanzierung (Crowdfunding; Kreditgeschäft)
 - c) Vermögensmanagement (Robo Advice, PFM, Social Trading, Anlagen...)
 - d) Sonstige FinTech (IT-Bereich, Versicherungen, Vergleichsportale)
 - e) *hier bitte Ihr Text*
10. Wenn Sie an die oben genannten Segmente denken, welche Beispiele von Weiterentwicklungen/Neuheiten an Produkten könnten hier aufgezählt werden die in den letzten Jahren entstanden sind? Sie können sich hier gerne auf Ihre Bank und Ihren Kernbereich fokussieren.
11. In welcher Relation steht Ihre Bank zu FinTechs?
- a) Kooperation mit FinTechs
 - b) Konkurrenz zu FinTechs
 - c) Übernahme von FinTech
 - d) *hier bitte ihr Text*
12. Sollten Sie Ihre Bank als FinTech sehen, können Sie näher beschreiben warum?
13. In der Literatur [DSAH14] werden Gründe aufgelistet warum FinTechs bereit sind mit einer Bank zu kooperieren: keine Notwendigkeit für eine eigene Banklizenz, die langjährige Erfahrung und Know-How von Banken, die Große Kundenbasis, um nur ein paar zu nennen:

-
14. Warum sollten Banken im Retailbanking Bereich FinTechs nicht unbeobachtet lassen bzw. mit FinTechs in Beziehung treten?
 15. Welche Vorteile würde es für Retail Banken geben?
 16. Inwiefern hat der Einfluss von Digitalisierung und FinTechs zu einer Veränderung des Mindset seitens Ihrer Bank geführt:
 17. Hat es eine Auswirkung auf die Kostenstruktur?
 18. Haben sich neue Prozesse etabliert z.B. neue Onboarding Prozesse bzw. Digitalisierung bestehender Finanzprodukte und Abläufe?
 19. In welchem Bereich sehen Sie Ihre Bank klar im Vorteil gegenüber einem FinTech?
 20. Wo sehen Sie den Wertebereich Ihrer Bank welches Sie von anderen Banken bzw. FinTechs hervorhebt? *Sie können sich hier gerne auf Ihren Kernbereich fokussieren.*
 21. Wie sehen Sie die Zukunft des Retailbanking in Österreich in den nächsten 5 Jahren unter Berücksichtigung von FinTechs und Digitalisierung?
 22. Glauben Sie an eine Anpassung von Finanzprodukten, welche von einer Bank angeboten werden an Finanzprodukte bzw. Finanzdienstleistungen, die von einem FinTech angeboten werden?
 23. Sehen Sie alle Kernbereiche (z.B. Zahlungsverkehr, Kreditwesen usw.) des Retailbanking fest in Hand der Banken oder sehen Sie in den nächsten 5 Jahren einen stärkeren Einfluss bzw. Übernahme durch FinTechs?
 24. Optionale Frage: Im Rahmen meiner Masterarbeit wird die Untersuchung der Veränderungen im österreichischen Retail Banking Bereich auf Basis des Business Model Canvas (BMC) Frameworks von Osterwalder [OP10] durchgeführt, welches der Visualisierung und Strukturierung von Geschäftsmodellen dient. *Die wichtigsten Bausteine des Frameworks im Überblick sind: Schlüsselpartner (Partnerschaften aus denen das Geschäftsmodell besteht), Schlüsselaktivitäten (wichtigste Aktivitäten der Bank), Schlüsselressourcen (Ressourcen welche das Geschäftsmodell braucht), Kundenbeziehung (Kundenbeziehung zu Neukunden und Bestandskunden), Kanäle (Kanäle um Kunden zu erreichen), Kundensegmente (Kunden als Zielgruppe), Wertversprechen (mit welchem Leistungsversprechen tritt die Bank am Markt auf), Kostenstruktur (die wichtigsten Ausgaben) und Einnahmequellen (Erlösmodell).*
 25. Wenn Sie an Ihre Bank denken, bildet der Business Model Canvas A.2 die Struktur in Ihrer Bank ab oder fehlen wichtige Teilbereiche?
 26. Wenn Sie an Ihre Bank denken welche Bereiche (Bausteine des BMC) aus A.2, haben sich in den letzten fünf Jahren am meisten verändert?
 27. Spielen FinTechs und Digitalisierung eine Rolle in dieser Veränderung oder sehen Sie dafür andere Gründe? Wenn Ja welche Gründe?

A. INTERVIEW GUIDELINE



Figure A.2: Business Model Canvas Building Blocks, own depiction based on [OP10]

A.1 Quotes used in (Reference Chapter / section in Chapter 5)

Summary grids of codes used in interviews in MAXQDA:

Sample of coding interview data segments and paraphrasing in MAWQDA:

Summary-Grid

- Paraphrasierte Segmente

Codesystem	IP1	IP2	IP3
Cost Structure	■	■	
Cost optimisation	■		
Cost pressure		■	
Channels	■	■	
Digital Channels	■	■	
Sales channel			
Customer Segment	■		■
Customer Block			■
Value Proposition	■	■	■
Universalbank			■
Advantage of Retail Banks			■
Key Ressoruces	■		
Key Activities	■	■	■
Pre approved loans			
Photo bank transfer			
Securities			
PFM			
Onboarding Process		■	
Revenue			
Key Partners	■	■	■
FinTech	■		
FinTech activity	■		■
Legal Regulator			■
PSD2			■
Relationships	■	■	■
Coperation Bank FinTech			■
Markt consolidation			■
Releationship Bank FinTech			■
Paraphrasierte Segmente	■		

Figure A.3: Summary codes

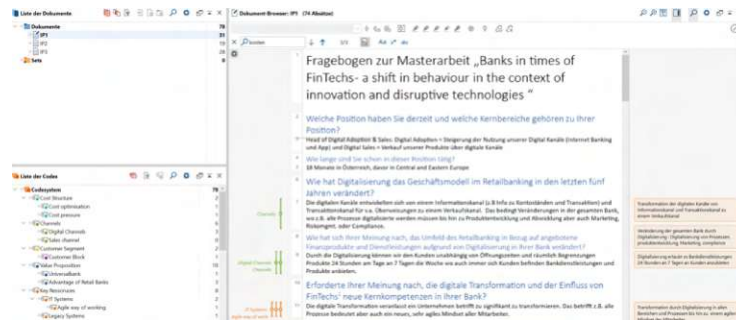


Figure A.4: Sample of summary codes in interview



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