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# STRATEGIC BUSINESS MODELS IN THE EUROPEAN BANKING INDUSTRY: BUSINESS MODEL OPTIMIZATION FOR NEOBANKS

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ABSTRACT

This report examines business models in the banking industry while putting an in-depth focus on the business model of Neobanks. To evaluate the increasing recognition of the business model of Neobanks, strategic advantages and vulnerabilities are identified, and the robustness of the business model is tested. The results indicate that Neobanks provide a promising customer-centric value proposition while profitability represents a core challenge. Essential recommendations to enhance the business model include the expansion and diversification of the product and service portfolio and the development of a data monetization plan.

KEYWORDS: Strategy, Economics, Business Model, Europe, Banking Industry, Neobanks, Business Model Canvas, Customer, Organizational Architecture, Value Proposition, Evolution, Variation, Optimization, Challenger Banks, Business Model Dimensions, Recommendations

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## 5.1. Expansion and Diversification of Product and Service Portfolio

The first recommendation to mitigate vulnerabilities is to **expand banking and non-banking products and services in the portfolio of Neobanks.** The primary goal of these recommendations is to establish **more diversified revenue streams** to mitigate the central vulnerability of unprofitability. In total, **three pillars**, two pillars in the banking and one pillar in the non-banking business, are recommended that should be addressed simultaneously.

The first pillar is to **enter the credit market**. This is already a core activity and revenue driver for traditional banks, and consumers frequently associate banks with consumer loans. So far, it is untypical for Neobanks, who started as payment provides, to be present in the credit market. To catch up on traditional banks, increase market share and cover the issue of low margins on payments services, Neobanks need to enter the credit market. This action needs to be complemented by expanding into other markets due to high competitiveness in the limited credit market and the current lack of a track record for Neobanks.

The second pillar **introduces brokerage services**, which very few market players, such as Revolut, have started. Despite competing with Neobrokers, Neobanks will have the advantage of increased convenience as interested customers will already have a bank account and thus do not need to sign up and transfer funds to a Neobroker account. This opportunity allows to gain market share and thereby generate additional revenue.

The third pillar is to add **complementary non-banking services linked to financial transactions and relevant** to the target customer segments. The business model of Neobanks can be complemented by various services that relate to payments or payment processing, such as travel booking, insurance, and tax services. Customers can receive a wider variety of services, while the business model can establish an additional revenue stream.

These measures also impact the four business model dimensions of Neobanks. Starting with the **customer dimension**, it will undoubtedly adapt based on the extension and diversification of

services. In fact, the targeted customer segment will be enlarged as more customer needs regarding banking and non-banking services paired with digital convenience can be fulfilled. This will help Neobanks achieve the critical size needed to achieve economies of scale and better cost of funding. Besides, the enlargement of the customer segment will increase the relevance of Neobanks in the banking industry. The necessary condition to realize this enlargement is that customers perceive the Neobank as a trusted brand and that the additional products and services are perceived as relevant for the target audience.

In terms of **value proposition,** a twofold impact can be identified. Regarding the extension of banking services, the business model of Neobanks could be perceived more alike to that of large universal banks, and the customer would derive similar abilities. The extension to non-banking services will lead to superior customer experiences as a fuller range of products and services will be digitally accessible via the platform more conveniently. Moreover, the more diversified portfolio will also promote traffic on the website and thus generate more customer data. This feedback can be transformed into a capability to identify current pain points or gaps in the lending business (e.g., mortgage setup complexity) and respond to these by launching a better version than competitors. This customer-centricity within the expanded offering will increase customer trust and loyalty, which may lead to higher customer deposits and better competitiveness, for example, in the lending business.

Considering the **organizational architecture dimension,** the key activities and resources will have to adapt to the expansion of the product portfolio. As such, the entry into the credit market signifies the extension of key activities while at the same time implying the need to recruit credit experts. Further, to generate a seamless and straightforward customer experience for non-banking services, additional customer experience talents will need to be hired. These will also need to provide excellent customer support. Besides, both banking and non-banking services imply an intensified maintenance and development of the platform to cope with the extended

offer. Additionally, the branding will need to incorporate the additional product and service offering and position the business model accordingly to the broader public.

The **economics dimension** will be impacted as well by contributing towards increased profitability. Due to the diversified offer, Neobanks have much more latitude about which services are monetized. Hence, it reduces pressure on single revenue streams, such as payments, where the willingness to pay is limited. By entering the credit market, net interest income will become an additional income driver. For many traditional banks, this position is already an essential item on the income statement (Humblot 2020, 2). In addition, income from net trading assets can be generated by entering the brokerage business. The additional non-banking services can serve as a revenue stream, either by generating commissions by passing customers on to partner companies or through independent processing if the business model of Neobanks itself covers the services.

This recommendation also has an impact on two **stress factors**. As such, the effect on the economics dimension through the **liquidity risk** is mitigated since this recommendation is intended to retain and attract more customers. Thereby, it also impacts the total financial resources deposited by customers so that Neobanks have an additional source of liquidity for their operations. Likewise, the economics dimension is also less affected by the **potential venture capital bubble burst**. By assuming that Neobanks will grow through this expansion of products and services, this recommendation will also support Neobanks in developing a greater stand-alone power due to their increasing size and diversified revenue streams. Thus, Neobanks can decrease their currently strong dependence on venture capital.

To implement this recommendation, three **enablers** are required. Firstly, **qualified human resources** are needed. As such, IT experts are required to implement products and services to the digital platform smoothly. Additionally, AI experts shall help develop algorithms based on gathered data to make products and services smarter and more convenient. These can also help

identify additional products and services based on trend analysis. Further, entering the credit market requires credit risk experts who build a track record and establish a robust analysis of the credit risk.

Secondly, the business model requires a **trusted brand positioning** to be eligible for consumers to use extended but also complex products. Furthermore, technological expertise in AI plays a vital role in ensuring advanced customer care and frictionless interaction. Applied to credit activities, technologies need to support AI-based customer score ratings to optimize processes and to ensure building a track record.

Lastly, it is essential to gather **customer data on the new markets' relevancy and preference of products and services**. To understand which products and services attract and retain customers and are a potential source of new revenue streams, Neobanks first need data on customers' preferences and relevance to different products and services.

Based on these enablers, **four measures need to be implemented**. Thereby, the first measure needs to be undertaken first, while the other three actions can be pursued simultaneously.

It is first crucial to evaluate whether the extended services should be **developed and offered in-house or whether partner companies should operationalize them**. While both options are feasible, this decision must be taken based on the long-term vision of the Neobank. For banking services and products, it is recommended to internalize all related activities, as banking activities are part of the core activities in the bank banking industry and, thus, important for the trusted brand perception of a bank. However, for non-banking services and products, it is advisable to resort to partnerships to exploit their experience and scale. Following these considerations, Neobanks must undertake specific steps and fulfill certain conditions.

As the cost of funding is an essential factor for competitiveness in the credit market (Table 4, D2, A2.2 and D3, A4), the second measure is to minimize it by **incentivizing customers to use their deposits more intensively**. The goal is that customers use the Neobank as their primary

account so that the business model opts for deposits as a source of funding. To incentivize usage, the implementation of reward programs can be considered. Examples include the offering of marginally and temporally higher interest rates on deposits.

Nonetheless, it is still vital for Neobanks to improve conditions for external funding in case customer deposits are not large enough to cover issued loans. Therefore, it will be crucial to **improve track records in credit and risk management** as the third measure. Thereby, the aim is to reach better funding conditions by creditors and thus, lend money at a more competitive interest rate. Neobanks should start offering less complex credits to consumers and SMEs before moving to more structured loans like mortgages to build this track record. These activities should be complemented by AI credit score tools that optimize credit issuance. Thereby, the financial viability of private and institutional customers should be tested to decrease payment defaults, which can improve the track record.

To implement non-banking services, it is crucial to establish a dedicated team that strengthens **value partnerships** as the fourth measure. As for services such as **travel bookings and insurances**, a suitable partner network would offer consumers additional services while not requiring complex in-house capabilities and costs. Though commission income through partners can imply lower margins, the amount and variety of the services provided to customers can outbalance the individual low margins. As for services such as **tax returns and payments** via the Neobank account, collaborations with local tax authorities would facilitate the implementation in two ways. Firstly, the needed integration of necessary forms to the digital platform will be faster, and the forms will continually be updated given current standards. Secondly, Neobanks can forward respective customer data to responsible tax authorities. Thereby, the advantage for customers is the increased convenience, as refunds and payments are directly linked to their accounts without additional interaction with tax authorities.

Neobanks serve as processors of tax data and payment intermediators within the given regulatory possibilities, while they can charge a fee for every tax declaration or return made.

In terms of **commitment risks,** the implementation can be considered as twofold. As realized, the expansion to the credit and brokerage market requires building sufficient in-house capabilities, influencing the organizational architecture, cost- and revenue structure. To minimize the risk of failure, it is advised to start with a smaller pilot project to derive the future success of this implementation and iterate as cheaply as possible. Diversification of non-banking services can be tested first by establishing short-term contracts to test the partnership and resulting customer satisfaction before putting these partners on a long-term pipeline.

Despite careful implementation, this extension and diversification go along with certain **risks.** If customers do not use the Neobank as their primary account and thus do not bring sufficient customer deposits, which can be transformed into loans, Neobanks would have to rely predominantly on funding from financial partners, such as Deutsche Bank or UBS, for their loan origination. This, in turn, can intensify the risk of not achieving the long-term competitive cost of funding in the lending business (Table 4, D2, A2.2). Regarding the expansion to non-banking services, there is the potential risk of **negatively changing the brand perception**. The belonging risk that must be mitigated is that customers may not see Neobanks predominantly as financial institutions, weakening trust for money custody.

## 5.2. Develop a Data Monetization Plan

While many users of Neobanks are firmly convinced of low-cost or no-cost services, this is considered a significant vulnerability in the banking industry. Hence, a straightforward but still attractive monetization plan needs to be developed. This monetization plan can include shifting away from the freemium model towards multi-tier subscription models. Alternatively, it could be attractive to offer one basic version and allow customers to pay for additional services based on their needs. Both options allow customers to follow a needs-based self-segmentation. With

this strategy, however, customers' behavior and willingness to pay must also be considered, and there is still the risk of customer fluctuation.

Therefore, a far more interesting measure should be added to the monetization plan, namely the **monetization of data.** Neobanks capture and store a lot of data that can be used to generate insights. To reduce pressure on the monetization of actual products and services, Neobanks can try to extract value through the monetization of data, either internally or through third parties (McKinsey & Company 2017). Extracting value for internal matters generates value as it enables optimization of existing products and services and predicts changing customer needs to adapt accordingly. The latter can enable a first-mover advantage which facilitates market share takeover and price setting. Research shows that more than 40% of global financial institutions are already investing in data insight offerings for internal use. However, these financial institutions are missing the opportunity to create new value through external monetization (Accenture Strategy 2018, 4-6). Therefore, for Neobanks, it is also recommended to address third parties in their monetization plan. Providing data to third parties implies preparing and selling data to third parties who have limited abilities to extract data themselves. It can help third parties to understand their key drivers for cost and customer insights that could drive value. For the business model of Neobanks, in turn, this creates an additional revenue stream that targets mainly institutional customers.

The **impact of this recommendation** on the **customer dimension** is twofold. The customer dimension will be indirectly affected as internally applying advanced analytics measures will better adapt to the needs of targeted customers, thereby positively affecting their satisfaction. On the institutional customer segment side, selling data to third parties can imply that this specific customer segment will grow.

Regarding the **value proposition**, it can be inferred that the data monetization plan will strengthen the value proposition. Services and products will become more user-friendly based

on analyzed needs, new offers can be embraced through trend analyses, and prices remain competitive. Overall, it can be said that the product portfolio and service offering would improve, ensuring to fulfill customer-centricity.

The **organizational architecture**, which heavily relies on the platform and related technologies, would also improve. The business model can further exploit its technological advantages and established IT skills, which are already competitive advantages compared to traditional banks (Table 6, D3, A1). A further focus on establishing advanced analytics capabilities also implies further strengthening human resources components.

Additionally, this recommendation mainly aims to improve the **economics dimension** and significantly affects the economics dimension. Existing customers can be retained through this monetization plan, and cross-selling can be promoted. Additionally, more diverse but needs-based tailored products and services will attract more customers. This will ensure to generate more revenue per customer and contribute towards cost-saving economies of scale. Additionally, based on selling data to third parties, a new revenue stream is added to the business model creating more opportunities towards profitability.

The business model dimensions, and the **stress factors are impacted** if this monetization plan is implemented. Complementing the existing revenue model with another revenue stream will help to mitigate certain critical stress factors. For example, **the decreasing willingness to pay for banking services** could be partly mitigated. Customers face increasing incentives to pay if products and services are shaped precisely to their needs and cannot be imitated or substituted by competitive business models due to a lack of available data.

The implementation of the **data monetization plan depends on specific enablers** that need to be set in place. First, suitable technological resources need to be provided and advanced data analytics measures need to be established. Further the storage location of gathered and processed data must be determined. For that, the business model's key activity of platform

development and maintenance needs to be continuously tested and adapted while the role of technology as a key resource becomes even more crucial. Thereby, the (financial) trade-off, which must be made for technological capabilities, is whether they shall be developed in-house or acquired through third parties. Besides, processing and providing advanced analytics insights requires capturing suitable talents. As such, employees remain a key resource whose acquisition needs to be further strengthened. Neobanks need to exploit the already existing interest of talents in developing their business model by building an attractive environment for hiring, developing, and retaining talent. Especially IT talents – be it data scientists, data engineers, or digital product managers – are scarce and talent acquisition schemes need to capture their attention. However, not only IT talents need to be in place, but also corporate compliance and risk experts as the data monetization plan's success depends highly on adhering to privacy and compliance requirements. Besides, the success of this recommendation relies on the size of the customer base. Hence, marketing activities that foster community building can be considered a crucial enabler. The more customers are captured for the platform, the more data available for analysis. More data, in turn, results in better analytics capabilities and pattern building, resulting in a positive virtuous cycle.

Having stated the relevant enablers for this recommendation, the **implementation process** can be defined. To launch the data monetization plan, it will be crucial first to define **and prioritize use cases that can be implemented based on existing data.** A first insights offering needs to be established, and a decision must be made which customer segments to target. Once these decisions are made, it is recommended to **ensure all appropriate stakeholders are involved**. This should include not only the internal human resources team but also complementary players such as digital start-ups and targeted customers themselves to gather their immediate feedback and understand their industries' needs. For the use cases, it is crucial to **develop proper controls** to ensure the analytical models drive the desired results and can be quickly adjusted if

needs change. Additionally, it is crucial to continue **experimenting with new technologies, algorithms, and data sources to ensure efficient analytics results** to provide or disprove hypotheses and insights.

Further, evaluating **suitable storage for and access to data and respective analyses** is crucial. This question mainly concerns the storage and provision of analytics insights sold to third parties. Neobanks need to evaluate whether part of their already existing platform interface can be used for providing access to the data insights, whether the existing platform must be extended to present a separated part for the analytics or whether a different platform will be required. Indeed, to keep pace with the increasing size of datasets and processing capacity, the solution must be cloud-based.

Of course, along with the testing and experimenting on the technological side, it is crucial to **develop the pricing scheme on the business side.** The pricing for several data analytics services should undoubtedly cover the occurring costs and be developed based on the competitive advantage it establishes, based on industry benchmarking and customer surveys that explore customers' willingness to pay. Finally, it is vital to **remain flexible regarding the process and the monetization plan** to allow fast and constant revisions to market changes.

For the implementation, the occurring costs need to be considered. Within the first stage, data gathering can be considered a cost rather than creating value. This is linked to substantial upfront costs resulting from developing suitable technologies, expanding the platform, storing the data, protecting the data, acquiring additional talents, ensuring regulatory compliance, and constantly acquiring new customers. However, once the operational side is established, operational economies of scale will create synergies, and the data will start creating value while costs stagnate or even be minimized (Schmarzo 2020). To ensure that the revenue generated through the monetization plan outweighs the costs, go-to-market time is crucial. Although it is difficult to estimate the exact incremental revenue, research based on similar use cases and

markets implies that an adequately executed data monetization plan can increase revenues by 5% to 10% in revenues (McKinsey & Company 2017).

To **minimize the risk** of sunk cost due to implementation failures, it is recommended to **follow a "start small, scale fast approach,"** which allows for flexibility, learning, and course correction as the business develops. Thus, building minimal viable products and prototyping for customer test groups shall explore the actual value creation and the resulting willingness to pay. If test phases are successful, Neobanks can consider wider roll-out of respective services.

However, there are also certain **risks** that are mainly driven by external factors. For example, it is not clear how regulations will affect the use of customer data in the future. Furthermore, increasing hacker attacks on databases also increases business risk, especially for companies that rely heavily on data. Additionally, banks should be aware of competition from big techs who have already established more comprehensive expertise on data monetization and who could capture the market. Finally, Neobanks need to bear in mind that their business model is built upon customer trust. Therefore, Neobanks need to be cautious about how the data monetization plan is defined to avoid customers' perceiving that their data is being "sold" (Accenture Strategy 2018, 13).

# 1. Introduction

## 1.1.Relevance and Motivation

"Banking is Necessary, Banks are Not" (Bill Gates, 1994). This past quote from one of today's most significant technological pioneers implies the unavoidable irrelevancy of banking branches throughout time, given the technological progress that had started to evolve. Indeed, this forecast might be considered as confirmed given that nowadays the number of digital only Neobanks is substantially increasing. In fact, these digital challengers to traditional banking business models have risen from 42 in 2015 to 308 in 2020 worldwide, indicating an increase of 633% within five years (Figure 1). Thereby statistical evidence suggests a continuously increasing trend of Neobank launches in the banking industry since 2009 (Exton Consulting 2020, 3; BBVA Research 2016, 13). A markable point of this trend was the recent valuation of N26, one of the largest European Neobanks, as the second-largest bank in Germany, one of the financial centers in Europe (Browne 2021). This increasing size of Neobanks and the related future potential pave the way for potential and significant disruptions in the banking industry, which need to be examined thoroughly given the industry's critical impact on business and society (Forbes 2021).

This thematic relevancy of banking institutions and their business models for business and society represents one motivational pillar why the authors would like to examine the banking industry. The motivation based on the thematic relevancy is complemented by a temporal relevancy which occurs due to increasingly louder voices indicating a disruption and reshape of market dynamics due to the rise of the business model of Neobanks.

Apart from the relevancy of this topic, the authors of this report were driven to pursue this comprehensive business model analysis by personal motivations. While it was identified that there is no comparative and comprehensive analysis on this relevant topic yet, the curiosity and eagerness of the authors led to a pioneering motivation to fill this gap. Additionally, the banking

industry is of particular interest to the authors, as all three authors aim to work in professions related to that industry in the future, thereby actively shaping the future of the banking industry. For that, the authors consider it as crucial to establish a common understanding on existing business model dynamics and how they will evolve in the future.

## 1.2. Report Structure

As indicated, the thematic and temporal relevancy of a presumed disruption in the banking industry through the business model of Neobanks, paired with personal motivations are setting the base for this report. This report aims to create an understanding of how different trends have impacted the evolution and variation of business models in the industry. Further, the objective is to provide Neobanks with a thorough overview on the potential advantages and vulnerabilities of their business model. Based on these insights, three measures will be provided to optimize the business model. To reach these objectives, the report is divided into three main parts:

1. Business Model Evolution and Variation
2. In-Depth Business Model Analysis of Neobanks
3. Business Model Optimization for Neobanks

## 1.3. Methodology

To conceptualize and structure the report consistently, several analysis methodologies were applied. As such, this report systematically used a business model analysis approach which was predefined based on four contextual dimensions that each business model consists of, leading to better comparability. Thereby the four business model dimensions – customer, value proposition, organizational architecture, economics – were derived based on literature from Fielt (2014, 95-96). For the in-depth business model analysis of Neobanks, the four business model dimensions were further narrowed down by using the criteria included within the simplified business model canvas framework established by Afuah (2014, 50). For the

development of the robustness test, a methodology established by Haaker et al. (2017, 17) was applied.

Considering the data used within this report, it can be stated that a combination between qualitative and quantitative data was used. Visual illustrations of key statistics and facts can thereby be solely found in the appendix while being referenced accordingly within the report. The research methodology is twofold consisting of an analysis of company documents and secondary data sources as well as semi-structured verbal interviews.

Thereby it was noted that the availability of documents and secondary data sources varies. In that light, the authors identified various literature on general business model definitions and business model analysis yet without any clear consensus. In contrast, for business model definitions narrowed down to the banking industry, only limited literature is available which is mainly focused on the economics dimension of a business model. The literature field was thereby dominated by literature from Rym Ayadi (2019) and her balance sheet indicator approach established in "Banking Business Models: Definitions, Analytical Framework and Financial Stability Assessment". Publications from Ferstl and Seres (2012) as well as Humblot (2021) complement the balance sheet indicator approach with an income statement approach. Literature on the evolution within the banking industry was only very fragmented and a holistic overview which presents a direct linkage to the evolution of business models was partly absent. Additionally, no common consensus regarding the beginning of the industry's evolution could be found. Likewise, the currently persistent variation of business models in the banking industry was only partly covered by literature and consistent criteria for comparison were missing. The same accounts for the availability of comprehensive data on the business model analysis of Neobanks. The robustness of the business model of Neobanks was not yet tested, however, various methodologies were available to execute the robustness test.

Different measures were taken to ensure that the gathered information is unbiased and comprehensive. For that, the usage of diverse sources of information were considered and used (Table 1). Additionally, a combination of theoretical and practical databases was used. Finally, to ensure a high data quality, the authors tried to utilize renowned authors and publishers.

In terms of semi-structured verbal expert interviews, it can be stated that four interviews were held in October 2021 (Adams 2015, 493). Interviewees included two professors from Nova School of Business and Economics who provided an academic view on the business model of Neobanks. Additionally, an employee from the senior management of a traditional bank and from a Neobank shared their professional business insights on that matter. It needs to be highlighted that more experts were requested for an interview, especially professionals from traditional banks and Neobanks, but only four invitations were accepted (Table 3). An initial set of questions equal to all experts was prepared in advance, but dependent on the fields of interest and expertise, situational questions were posed as well. Each interview lasted around 45 minutes. Following a permitted recording of the interviews, the edited transcription method was applied to develop written transcripts (Summa Linguae 2021). Once the information was documented, data processing was initiated by clustering the statements of each interviewee according to the four predetermined business model dimensions. As a result, it was possible to identify consistent core statements and avoid flawed conclusions. The clustered interview statements can be found in the appendix (Tables 4-7). The results of the interviews were used as references in the analysis to complement existing literature and verify existing literature's perspectives through an empirical approach. To ensure the reliability of data, expert interviews were taken simultaneously to the literature research to be able to juxtapose insights.

## 2. Examination of the Term Business Model

To examine the evolution and variation of business models in the banking industry, it is crucial to define the term “business model”. As a first starting point, it is intended to establish a

synthesized view of the term "business model" and its belonging components, considering various literature on that matter. To specify more on the banking industry, the subsequent step includes stating relevant criteria through which it is possible to differentiate among business models in the banking industry.

## 2.1. General Business Model Definition

Despite its implicit existence for many decades, it was only in the 1990s that the term "business model" turned into technical jargon (Gassmann, Frankenberger and Csik 2014, 1). A review of relevant literature uncovered **numerous definitions in established publications, yet without a clear consensus**. Various definitions emphasize different elements and vary in their degree of inclusiveness.

One of the first business model definitions was established by Timmers (1998, 4), who states that business models are the *"architecture for the product, service and information flows, including a description of the various business actors and their roles, and a description of the potential benefits for various business actors and a description of the sources of revenues."* Thereby the author indicates that the focus of a business model lies on the architecture and the interaction among various business actors. Other publications such as Afuah and Tucci (2001, 4) emphasize more on the financial and competitive dimension of business models, indicating that business models are a *"method by which a firm builds and uses its resources to offer its customers better value than its competitors and make money in doing to. It details how a firm makes money now and how it plans to do so in the long-term."* In contrast to Timmers (1998, 4), this definition also includes strategic aspects.

Although applying different foci within their definitions, the two preceding publications include revenue creation as part of their business model definition. On the contrary, Amit and Zott (2001, 515) consider the revenue model a distinct but complementary concept to the business model. Business models shall focus on value creation, while a revenue model concentrates on

value appropriation (Amit and Zott 2001, 515). Other literature refers to business models as *"stories that explain how enterprises work",* expressing relevant components such as the target customer, what each customer values, and how the business makes money (Magretta 2002, 4). Given that two out of three components focus on the customer, this author implies that the purpose of a business model is firmly built around the customer dimension.

Shafer, Smith, and Linder (2005) were the first who attempted to establish a general and industry-wide definition of the term. Integrating 42 different business model components from earlier work in this area, they established a general definition indicating that *"business models are a representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network"* (Shafer, Smith and Linder 2005, 202). Since Shafer, Smith, and Linder (2005) define business models as a representation and embodiment of a firm's set of strategic choices, they differentiate between business models and strategy. Along with Shafer, Smith, and Linder (2005), literature from Wirtz, Schilke, and Ullrich (2010) and Gassmann, Frankenberger, and Csik (2014) also present a more operational definition and purpose of the business model. In that sense, Wirtz, Schilke, and Ullrich (2010, 274) indicate that a business model *"reflects the operational and output system of a company and such captures the way the firm functions and creates value".* Likewise, Gassmann, Frankenberger, and Csik (2014, 1) define business models as *"a unit of analysis to describe how a firm's business works"* considering four dimensions, i.e., the who, the what, the what, the how, and the value. DaSilva and Trkman (2014, 382) focus on a more resource-based view, implying that business models *"represent a specific combination of resources that generate value for both customers and the organization through transactions."*

This broad overview of the various definitions of the term "business model" and its different foci evokes that the value logic gained more relevance throughout time. While a few earlier definitions summarize what a business model is made of, the latest definitions are built around

creating, delivering, and capturing value for various stakeholders (Fielt 2014, 89-90). Further, despite the vast amount of differently phrased definitions and their respective foci, a higher-level perspective suggests that all definitions contain a significant common ground regarding the compositional elements that describe what a business model is made-off. For the further development of this report, this common ground of compositional elements and their respective operationalization is considered crucial because it allows distinguishing among business models in the banking industry.

As such, one component of each business model is the **customer dimension.** Thus, defining the target customer is considered one central dimension of designing a business model (Gassmann, Frankenberger and Csik 2014, 1). Additionally, the customer dimension shall articulate the customer's problem, also known as the "job-to-be-done". The second pillar entails the definition of a (**customer) value proposition** as an essential step to establishing a business model. The evolution of the term "business model" towards more value-centered definitions implies that a successful business model should describe how to create value for customers. This includes presenting the most suitable solution to the customer's "job-to-be-done" (Christensen, Johnson and Kagermann 2008). The third business model component is the **organizational architecture**, which addresses how the value proposition can be fulfilled and delivered to the customer (Fielt 2014, 95). Consequently, the organizational architecture component unites key resources, key processes, key activities, and the value network. Key resources include crucial assets such as people, technology, products, facilities, equipment, channels, and the brand, which orchestrate the value creation. The key processes, i.e., operational and managerial, deliver and capture value (Christensen, Johnson and Kagermann 2008). As resources and processes and their components act interrelatedly and outside a vacuum, they are part of a pre-defined value network that enables value creation and capturing in the most successful way (Shafer, Smith and Linder 2005, 202). Finally, each business model

consists of an **economics dimension** that describes the company's blueprint on creating (financial) value for itself while providing value to the target customer (Fielt 2014, 96). The economics dimension can include the revenue model, a cost structure, a margin model, and resource velocity to ensure long-term viability (Christensen, Johnson and Kagermann 2008).

These business model components cover the core objective of creating and capturing value by answering the who, the what, the why, and the how (Gassmann, Frankenberger and Csik 2014, 2). It must be highlighted that all these dimensions have to be considered interrelatedly, which indicates that changes in any of these elements can affect the other and thus the business model as a whole (Figure 2). This also implies that significant differences in these dimensions indicate differences among business models within one industry.

**To synthesize these insights**, it is envisaged to go ahead with a final explanation of the term "business model" applied by Fielt (2014, 99), which describes business models as the *"value logic of an organization in terms of how it creates and captures customer value and can be concisely represented by an interrelated set of elements that address the customer, value proposition, organizational architecture and economics dimensions."* Hence, it can be derived that this report defines business models around capturing monetary value within the company and delivering value for targeted stakeholders. Further, it is intended to maintain the distinction between strategy and business models in the sense that business models reflect and operationalize strategic choices.

## 2.2. Business Model Definition in the Banking Industry

The universal definition of business models needs to be narrowed down to the context of the banking industry. The European banking industry comprises a rich range of banks with diverse business models (Ayadi 2017, 52). To identify and distinguish business models in the banking industry, critical contextual criteria have to be identified within the four dimensions of a business model. Thereby, a broad sight on various literature indicates that defining business

models in the banking industry is not a minor task, and many researchers applied different sets of indicators. To acknowledge that a bank creates and captures value, many economists used an income breakdown and thus income-related indicators such as net interest income, income from fees, or trading income (Ferstl and Seres 2012, 83-85; Humblot 2020, 3). Others have used performance-related indicators such as Return on Assets or Return on Equity (Erins and Erina 2013, 600) or balance sheet indicators (Ayadi 2019, 33-34). The common ground is that it is considered the more efficient approach to cluster banking business models based on the economics dimension than to apply a more qualitative approach. However, if data is made available, the customer -, value proposition -, and organizational architecture dimension must be examined since all four dimensions act interrelatedly.

Indeed, the economics and organizational architecture dimensions' components are affected by and affect the **customer** and **value proposition** dimension. Given the chosen service offering and unique value proposition, banks target different customer segments and are targeted by different customer segments (European Commission 2012, 32). Criteria such as **ownership, size,** and **organizational structure** can be further explored on the **organizational architecture dimension.** Analyzing the **ownership structure** can be crucial to understand the underlying incentive of a financial institution. Banks can have significant differences in their ownership structure, ranging from stakeholder ownership to shareholder ownership. Thereby, shareholder-owned business models are mainly driven by mere profit-maximizing incentives, while stakeholder-owned institutions aim to maximize member surplus while making profits at the same time. The stakeholder-owned institutions can therefore also be considered as dual or multi-bottom-line institutions. Nevertheless, as shareholder and stakeholder-owned business models use profitability metrics to record their profitability, a definite difference in business models solely based on different ownership forms does not necessarily have to occur (Ayadi 2019, 67-70). Additionally, banks can differ in their **organizational structure,** which can

follow a centralized or decentralized approach, either implying a high degree of centralized wholesale funding or the usage of subsidiaries that mainly fund themselves and autonomously (European Commission 2012, 53-54). Further, the organizational structure can, among others, include decisions regarding the number of branches, the variety of channels, the internal processes, or the application of certain specialized technologies (Ayadi 2019, 67-68). Differences in ownership and organizational structure can also imply variation **in the corporate and legal structure** and how different banking business models need to respond to regulation and resolution (Handro 2019, 170). Besides, banks can differ in **size** (i.e., the value of total assets), indicating systematic differences in riskiness, efficiency, and performance (Roengpitya, et al. 2017, 4-12). On the **economics dimension**, there is widespread pragmatic consent that the business model is about managing assets (activities) and liabilities (funding) for banks. This perspective is also known as the "Activity-Funding" definition and is put into practice by applying six defining balance sheet criteria to compare and cluster banks. On the asset side, three indicators can be used, namely: **loans to banks** (as % of assets), to measure the scale of wholesale and interbank activities and to proxy for exposures to risks which can arise due to the existing interconnectedness between banks; **customer loans** (as % of assets) to gain an insight on the share of customer loans to non-bank customers, serving as an indicator to measure reliance on traditional banking activities; **trading assets** (as % of assets), being non-cash assets other than loans and indicating the prevalence of investment activities that are prone to market and liquidity risk. The three indicators applied from the liability side consist of **debt liabilities** (as % of assets), i.e., non-equity liabilities other than deposits and derivatives. This indicator can be broken down into different types of debt liabilities such as short-, medium- or long-term debt and can provide insights on the bank's exposure to market funding. Further, **customer deposits** (as % of assets) can serve as an indicator to identify the share of deposits from non-bank customers such as households or enterprises, which can imply reliance on more traditional

funding sources. Finally, **derivative exposures** (as % of assets) serve as an indicator that aggregates all derivative exposures of a bank which are considered as key financial exposures of banks with investment and trading activities (Ayadi 2019, 33).

However, some items generate value, i.e., income that is not included on the balance sheet, so the mere "Activity-Funding" definition needs to be complemented. Many banks present a breakdown of their income sources to illustrate their business model. Hence, it is deemed reasonable to consider indicators that display the net banking income. These can include examining **net interest income** (as a % of net banking income), **net fees and commission income** (as a % of net banking income), and **net trading income** (as a % of net banking income). Thereby, net interest income is considered as interest income less expense before the provision for loan losses. Net fees and commission income is revenue from services to customers and net of expense from third parties related to services provided to the company. Finally, net trading income is realized and unrealized gains on trading account securities, plus any realized gains on securities available for sale or held to maturity (Humblot 2020, 3).

In sum, these criteria within the four business model dimensions can appropriately reflect the strategic choices made by various banks (European Central Bank 2017, 11). However, although all criteria can be applied to describe the variation of business models in the banking industry, the limited scope of this report requires focusing on critical differentiating criteria. Given the assumption that a change in one business model dimension will affect the other three dimensions and thus the whole business model, it is appropriate to focus on those dimensions where crucial differentiators can be found.

# 3. Business Model Variation and Evolution

This chapter aims to display the evolution and variation of business models in the banking industry. The first part starts with presenting and analyzing the chronological evolution of business models while highlighting the differences between those business models. The second

part focuses on presenting and differentiating nowadays predominant variation of business models in the banking industry.

## 3.1.Evolution of Business Models

The need for trading and exchanging goods started even before the evolution of business models in the banking industry before **3000 Before Christ (B.C.)**. and before the invention of money. To exchange goods and services, primarily livestock and harvest at that time, people had to exchange their offerings directly with another trade partner without any market intermediaries. Today, this early form of trading is known as the **Barter System** (Davies 2016, 9-11). One of the system's drawbacks was the insecure wealth storage, as there was no external place to store wealth safely. Additionally, it was difficult to trade with people outside the local area, as no system existed that allowed people to deposit assets in one place and withdraw assets at a distant place later (VirtualBarter 2013). The need arose for a business model that would facilitate such market transactions.

Only a few years later, in the **second half of the fifth century B.C**., Greece was the first country to establish a system in which bankers received deposits and offered credits partly from the money they stored. They created a business model in which bankers generated profits by charging interest rates for credits partly financed by their clients' deposits. Only a few years later, between **318 B.C. and 350 Anno Domini** a similar but more differentiated business model was also established in the Roman Empire. Thereby, people could deposit, lend, or exchange money from two different parties, namely private parties or bankers. Private parties, such as senators or knights, lent their private money against interest, thereby generating profits. Bankers, who had the official legal right to open deposit accounts, could generate profits partly out of deposited money from clients (Andreau 1999, 30-33). Additionally, there was an activity-based differentiation within the category of bankers between three kinds of bankers – the Argentarii, Mensarii and Nummularii (Labate 2016).

Apart from the early beginnings of banking in Greece and Rome, banking in England started in **1099** with the first crusade of the **Knights Templar** in Jerusalem. A new business model for banking was introduced. Many pilgrims started their route to Jerusalem across Europe and needed to carry many financial resources. To protect the pilgrims from robberies, the Knights Templar offered pilgrims to deposit their money for the route and transfer their money from London to Jerusalem by giving a receipt in return. Furthermore, the Knights Templar mediated between supply and demand. They acted as brokers and thus enabled, for example, the purchase of land with the guaranteed transfer of value to both parties (Harford 2017). In contrast to the former business models, templars focused only on the Christian pilgrims as their audience and provided their service out of churches instead of dedicated banks. Also, the market intermediary activity as brokers was a new service offering compared to former banks in Greece and Rome.

Years later, in the **13th century**, the era of **banking families** began. Few, but financially liquid family-managed companies primarily focused on commodity trading, started to engage in banking activities. These companies were mainly located in coastal regions where they covered the coastal trade to earn interest. However, they also targeted hazardous investment projects to demand a significant interest rate to increase profits further. Consequently, many of these companies disappeared, and only a few survived (Baggins 2020). In contrast to previous business models, this model did not focus on a specific customer group. Instead, the business model targeted projects with significant risk and thus high potential returns.

In the **14th century**, with the launch of the **First Company by the Peruzzi family,** the so-far usual company ownership types, namely family businesses and public institutions, changed. Thus, it was not the business activities that distinguished the Peruzzi family from other families that operated in banking. The Peruzzi family also operated a family business with many employees, a solid personal financial reserve, a high reputation in society, and a physical presence in multiple cities across Europe. Their offering consisted of managing payments

across distances, trading resources, providing credits, managing personal finances, and exchanging currencies. However, the Peruzzi family was the first to launch a bank-financed by 44% from people outside the family. Also, the three main income streams were well diversified, as the company benefited mainly from grain trading, from overseeing the Pope's finances, and from the English wool trade (Mosselaar 2018, 33). This business model was different from that in the 13th century for four reasons. Firstly, the source of financial resources was not from the family itself but from a list of diverse shareholders. Secondly, related to that, the income stream was diversified to ensure service offerings to customers. Thirdly, the additional value created was different as people could reach the bank in several large cities across Europe. Lastly, the targeted customer group was also impacted because multinational banking emerged, and geographically more people had access to banks.

The next step in the evolution of business models in the banking industry marked the launch of the **bank of San Giorgio** in **1408**. It was similar to already existing banks in its offerings, as it provided money transfers across distances, offered credits, and accepted deposits. However, the bank of San Giorgio was the first bank to be known as a public bank. Instead of offering the services to private persons, the bank operated in the public sector. For example, it aimed to save the republic of Genoa from bankruptcy (Boland 2009). Thus, the main difference in the bank's business model was the targeted customer segment, which was not private and wealthy persons but the public sector instead.

In the same century, in **1472**, a new bank called **Monte dei Paschi** emerged. Its idea that changed the typical business model was to also focus on a new customer segment. Instead of offering its services to the wealthy or the public sector, the bank targeted a specific segment by focusing on the needy and the poor (Treanor 2016). Again, the business model was similar in specific dimensions, yet, the change in the targeted customer segment allowed the bank to have established a new business model at that time.

The emergence of modern banking in Europe began in **1640** through **goldsmiths** who invented the business model for **retail banks**. These mainly offered credits in exchange for interest and deposits to private customers. However, there were two critical differences compared to all previous banking business models. Firstly, goldsmiths took advantage of the double ownership system, which is still used today. On the one hand, goldsmiths received deposits from their clients and were first to return money in the form of paper receipts. On the other hand, goldsmiths offered credits based on the customers' deposits and received interest in return. Thus, the goldsmiths offered their services without using their financial reserves by virtually dividing the ownership of gold. As such, the economics dimension was impacted by generating profits through interest without putting its financial reserves at risk. The depositor had a receipt that guaranteed the ownership of gold stored at the goldsmith while the creditor was given the stored gold from the client (Kim 2011, 2-3,19). A second key difference emerged through market competition. The number of goldsmiths in the market increased from 32 in 1670 to 42 in 1700. It was innovative that these competing companies decided to accept receipts from competitive goldsmiths to increase their customer base. Goldsmiths were secured by other goldsmiths in the market and thereby secured and strengthened the value creation to customers (Quinn 1997, 412). The goldsmiths' business model displayed an updated form of former banking business models and marked the starting point of modern **retail banks**. While the First Bank also had similar retail banking attributes in 1300, goldsmiths distinguished themselves by issuing paper receipts and creating a collaborative network of competitive market players.

A significant event that impacted banking business models in the future was the invention of **paper money** in Europe. Being first invented in China in the seventh century (Allen 2013), it took until 1661 for Europe to launch the first paper money in Sweden (Fourtané 2019). As paper money was lighter and more portable, it facilitated consumers to take part in market transactions, and it enabled the creation of further innovative banking business models.

Only a few years later, in **1668**, Sweden was also the first country in Europe to establish a **central bank**. Like other early central banks, the bank was established primarily to finance public government debt and serve banks in two ways. Firstly, central banks served as a storage for banks' large financial reserves, and secondly, central banks simplified transfers between banks (Bordo 2007). Thus, central banks had a distinctive business model by serving public institutions and private banks as targeted customers while having similar value offerings such as money transactions, deposits, and credits. Thereby, this business model was an extension of the business model of the first public bank of San Giorgio, as the Sweden central bank did not only fund government debt but also managed transactions between banks and stored the banks' reserves as the banks' bank.

The business model of **investment banks** originated in **1774**. The merchant Van Ketwich provided the innovative idea to share a mutual fund so that people from all wealth classes have access to a more diversified portfolio of three bonds, which was unaffordable for many small investors at that time. However, given the market volatilities, the idea of a mutual fund was unsuccessful. It took 150 years until **1924,** that the first modern investment funds arose from Van Ketwich's initial thought. The first low-cost but diversified investment fund was launched in Boston, but Europe quickly launched similar funds in the same decade. In contrast to Van Ketwich's initial idea, these early investment funds shared key characteristics of modern mutual funds as they allowed to invest in stocks without leverage and with the opportunity to sell or re-acquire fund shares. The investment sector proliferated and reached another milestone in the **1960s**. Investment funds started to focus more on short-term profits, relative risk became the new benchmark to assess projects instead of the absolute risk, and maximum turnover was the fund goal (Mosselaar 2018, 15). Hence, investment banks had a different business model. The value proposition consisted of diversified investment funds for investing to gain speculative

profits in return. Regarding the economics dimension, higher benchmarks were set to increase riskier short-term profitability significantly.

The establishment of the **commercial bank** was another step in the evolution of business models in the banking industry and was first founded in **1781** in Philadelphia before the business model was adopted in Europe. Commercial banks consisted of an extensive network of physical bank branches targeting private and Small and Medium-sized Enterprises (SME), especially in the early stages. The goal was to offer a wide range of banking services such as credits, deposits, and later also basic investment opportunities. The commercial bank is a for-profit company that earns profits through administration fees and interest for credits (Kagan 2021). In contrast to business models such as retail banks, commercial banks targeted two types of customers – private and business clients – while their extensive branch network together with their broad service offering allowed for a tailored client focus.

In the **late 18th century**, the first **savings and loan bank** was established in Great Britain at a similar time. It was initially established by a small group of people who created a shared fund to enable them to finance their mortgage credits through regular long-term payments. The fund was initially closed as soon as all group members were able to finance their mortgage. However, people started to take credits for other purposes and deposited their money without the goal of financing a home. Thereby, savings and loan banks became permanent institutions. This business model quickly succeeded and expanded from Great Britain across continents (Encyclopedia Brittanica 2019). However, it became less relevant in later stages of the European evolution of the banking industry due to the financial crisis in 2008 and the related mortgage crisis. In its early stages, the business model differentiated itself from others due to its customer segment with the common goal of financing mortgages at minimum cost. The source of value creation was based on the initially deposited money by all customers, and profits were generated based on the regular fixed payments in return for the credit, including interest.

The launch of **wholesale banking** marks another vital step in the evolution of business models in the banking industry. Wholesale banks offer a wide range of financial products and services to three targeted customer groups: large corporations, banks, and public institutions (Majaski 2021). Already during the Napoleon wars in **1803**, Barings PLC was known to finance Britain's military. Wholesale banking can be considered as the counterpart of retail banking. While both offer similar services, retail banks primarily serve small business and private customers, while wholesale banks serve large corporations and institutions (Kagan 2020).

Another business model that evolved in the banking industry was the business model of **mutual savings banks**, first launched in **1816** in Boston and Philadelphia (Kagan 2021). Mutual savings banks were established to help the lower and middle class get relatively cheap mortgage loans and promote savings among members. All members who opened an account at a mutual savings bank were considered owners of the bank, including the voting rights, and thus, participate in the bank's profits (Kumar 2014, 186). The targeted customers were not just any clients but people with a common ground (geographically, professionally, interest-wise) who were willing to commit to the company with an interest in getting a cheap mortgage loan. Regarding the business model components, the organizational architecture was unique because the bank was led by its members without an external management board. The service offering was similar to other banks, as people could deposit their money against interest or lend money from the bank. However, the source of the value creation was the community itself by committing to the bank and depositing their savings in the bank. Thus, with regards to the economics dimension, those bank members also participate in the bank's profit creation.

In the same century, in **1864**, the **credit union** was launched by Friedrich Raiffeisen with the goal to enable neighbors with different income levels to get cheap credits from the bank. The credit union's business model is similar to that of the mutual savings bank. Only credit union members have access to cheap credits but must also contribute to the shared fund. The members

are chosen based on a shared interest, such as the living area or the industry they work in, and the character of the person requesting credit is more critical for the credit union than for an income-driven traditional bank (Foreman and Birken 2020). Thus, the offering and customer target groups are similar to mutual savings banks. The difference between these two types is that mutual savings banks are for-profit companies while credit unions are not-for-profit. The purpose is not maximizing profits but offering the cheapest credits for all credit union members. Thus, the business model differs in value proposition and economics dimensions.

The disruptive success of the internet led to a new banking era. In **1983**, banks in the United States and the United Kingdom started with **online banking**. Online banks, also known as digital or internet banks, also provide customers with online access to their bank accounts and respective banking activities (Kocic 2017). Thereby, the customer segment was widened to all people with internet access as people were no longer tied to a bank with a local physical presence. While the offering was the same, customers could perform their banking activities autonomously. Furthermore, the organizational architecture was impacted, as the need for physical offices was reduced, and many duties were automized.

The latest business model that evolved in the banking industry is the one of **Neobanks**. One of the earliest innovators in the field of Neobanks was Fidor which was launched in Germany in **2009** (BBVA Research 2016, 13). Neobanks provide a wide range of solely digital banking services. In contrast to traditional banks, Neobanks have a leaner organizational structure due to fewer employees. The value proposition is built around customer centricity and tailored products which are enabled due to constant data gathering and analysis.

The invention of the digital currency **bitcoin in 2009** marks the latest innovation in the banking industry (Kay and Bernard 2021). Just like business model adaptations in response to the invention of paper money, business models in the banking industry will continue evolving and adapting to future trends and disruptions to deliver and capture value in the future.

## 4.5. Strategic Advantages and Vulnerabilities of the Business Model

Based on the thorough business model analysis of Neobanks, certain strategic advantages and vulnerabilities can be derived. Regarding the **customer dimension**, it can be stated that mainly targeting a younger and tech-savvy generation is beneficial for the future success of the business model. The previously mentioned generation will become increasingly relevant in the future, and Neobanks will have already gathered, processed, and analyzed their data. Thereby, they will be one step ahead in the long-term regarding customer preferences and product- and service-portfolio adjustments. However, considering the younger target group, certain downsides can be identified. Many younger customers do not have high deposits and tend to use the account for daily expenses instead of savings, resulting in a lower deposit position than traditional banks. This implies that the business model needs to rely on external funding to offer loans, which results in a higher cost of funding (Table 4, D2, A2.1, A2.2). Besides, many of those targeted customers use Neobanks as second or third bank accounts, whereby low switching costs and low brand loyalty can be derived. At the same time, many, seen nearsighted, European countries have increasingly older demographics. Thus, targeting younger generations can mean reaching natural limits in the present, which can complicate establishing the immediately required scale for long-term success.

The most significant strategic advantage within the **value proposition** is customer-centricity. While traditional banks tend to be product-centric, Neobanks establish their business model around customer needs to create the utmost value. Therefore, they have established a platform that enables them to provide inexpensive services compared to traditional banks meeting a crucial customer requirement within the banking industry. This customer-centricity is even strengthened by adding tailored digital tools and gadgets so that private and institutional customers can better understand and analyze their financial data. Additionally, the entirely digitally operating model paired with sufficient advanced technologies allows for efficient data

gathering, which can, in turn, reinforce the objective to offer customer-centric tailored solutions. Another beneficial component of the value proposition is that based on the digital nature, the business model is built on advanced technology pillars, such as AI and ML, which continue to play an increasingly important role in all industries. Having already established sufficient technology not only enables to adhere to the Megatrend "digitalization" but is also ensures competitiveness against traditional banks and potential big tech entrants. However, the downside of this value proposition is that the digital-only concept is mainly suitable for products and services that can be handled autonomously and without specific professional knowledge. For complex products, such as mortgage loans, people prefer to speak personally to human advisors by visiting a branch, and the digital-only value proposition cannot fulfill this customer need due to its nature (Table 5, D2, A1.3).

Considering the **organizational architecture**, as stated, it highly depends on external funding resources. The dependency implies adhering to the investment partners' expectations and timelines. This increases pressure and can mean that some decisions are primarily made to satisfy investment partners in the short term instead of benefitting the business model in the long term. It also implies continuously justifying why certain business activities are pursued. Apart from that, the online-only organizational architecture results in Neobanks not owning an ATM infrastructure. Thus, for the customer to withdraw money, the business model depends on the infrastructure of traditional banks and the retail industry, which in turn increases networking fees. Besides, not having a visible offline infrastructure complicates gaining more traditional banking customers needed to gain scale.

Nevertheless, these vulnerabilities can be continuously addressed, as many talented graduates are interested in joining Neobanks (Table 4, D2, A4.3). Given the Neobanks' future-oriented value proposition, IT and business graduates want to contribute their share towards developing and improving the business model to ensure its future success. Thereby, it also helps Neobanks

to globally select talents because their employees can work remotely. Due to the geographic presence, traditional banks need to select among a smaller talent pool.

Further, in contrast to working hours of brick-and-mortar banks, the technology platform of Neobanks offers indefinite customer support implying considerable advantages in terms of availability and approachability. Additionally, the platform is easily scalable due to less legacy than traditional banks, enabling simplifying expansion. Neobanks only need to operate their platform and integrating new partners and services on the platform can be fulfilled more efficiently. The platform architecture enables more agility and reactivity, which is a massive advantage in a fiercely competitive environment. In terms of understanding the customer, the advanced technologies used for the organizational architecture allow to gather customer data and derive current and future preferences to which the business model can quickly adapt. This, in turn, also lowers expenses for customer research and customer acquisition.

Regarding the **economics dimension,** notable advantages and disadvantages were derived. One decisive competitive advantage over traditional banks is that the business model of Neobanks is built on a lean operational cost structure. Thus, although initial set-up costs for the digital product, i.e., app and platform, are high, ongoing operational costs are relatively low due to the online-only nature. However, it must be noted that initial set-up and development take some time, so that in recent years mainly these set-up costs affect the business model's cost structure. As such, N26 stated in the 2019/2020 annual report that large portions of their costs (up to EUR 150 m) were used to expand the digital product. However, the lean operational structure benefits from low personnel costs in relation to the number of customers. Looking again at N26, personnel costs are only accountable for around 5% of their cost structure, while for a traditional bank like BNP Paribas, it accounts for almost one-third of the revenues (BNP Paribas 2021, 4; North Data 2021). These costs can be well illustrated by looking at the expenses for an average bank branch in Germany. On average annual costs of EUR 600.000 to EUR 1.000.000 occur,

which are split among rent, maintenance, and personnel cost. The branch, however, serves an average of 3.000 customers (Table 7, D4, A3.1). Traditional banks are aware of this high-cost position, which the decreasing number of bank branches can statistically display. The number of branches was lowered from 237.700 in 2008 to 174.000 in 2018, indicating a decrease of 26,8% within one decade (Statista 2020, 14) (Figure 6). The decrease in branches also decreases employees, which decreased around 13,8% from 3,1 m in 2009 to 2,67 m in 2018 (Statista 2020, 15) (Figure 7). However, there is still a substantial number of branches operating in Europe. Those substantial cost drivers are essential for the operating model of traditional banks but much less impactful on the cost structure of the business model of Neobanks. In fact, the platform allows scaling products and services to a more significant number of customers without enormous cost burdens coming from physical branches (Table 7, D4, A3.2). Other advantages regarding the cost structure concern the low customer acquisition cost. Traditional banks struggle to acquire new customers, implying increasing customer acquisition costs. This is mainly because many consumers have become accustomed to a digital banking business model, and traditional banks have not offered an equivalent digital experience (Boston Consulting Group 2020). Neobanks can scale customer acquisition due to the usage of mainly viral marketing approaches on social media and a solid friend-referral system. For example, N26 acquires two-third of its customers through the referral strategy (Table 7, D4, A1).

In terms of the **revenue model, beneficial attributes** of the business model go along with the platform and belonging expansion opportunities. Since Neobanks have access to a large customer base and respective data, they can analyze preferences and generate additional revenue through needs-based platform extensions (e.g. insurance services). This is usually difficult for traditional banks, as customers perceive them as pure banking services providers, and the integration of digital and physical presence is more cost intensive.

However, the **revenue model also contains significant strategic vulnerabilities** centered around ongoing profitability issues. These are rooted in primary activities as payment providers which go along with small or even negative margins due to the fierce competitive landscape. While this has helped Neobanks quickly create a large customer base, it threatens its profitability.

The unprofitable payment services lead to a compulsion to diversify revenue streams, similarly to traditional banks, through the lending business. However, while traditional banks have already established a significant track record in the lending business, Neobanks are confronted with a crucial weakness of non-competitiveness in lending. The vulnerability starts with the fact that Neobanks cannot lend competitively based on their relatively small size and, therefore, lower deposits. These lower deposits also arise as customers mainly use the accounts for payments, not for significant savings. Consequently, either Neobanks need to underprice loans, which in turn means insufficient revenue generation, or they have to offer non-competitive prices risking insufficient demand. Further, given the small deposits, Neobanks need to resort to bank loans from larger institutions since they cannot generate credits on their own. Yet, given the limited track record and associated risk management, the cost of funding is high (Table 4, D2, A2.2). Additionally, all business models in the banking industry face challenges due to negative interest rates and related costs in the lending business (Walden & Strohm, 2021; Menegon, 2020). The low- or negative interest rates also affect customer behavior who face higher opportunity costs when storing their savings on a bank account. Neobanks, in turn, bear the costs of negative interest rates when holding the client's deposits. Once interest rates rise again, price-sensitive customers will shift to traditional banks that can deliver better offers due to the lower cost of funding (Table 5, D4, A1).

To conclude, the business model of Neobanks is addressed to promising targeted customer groups and provides a distinctive customer-centric value proposition, aiming for simple, fast,

and transparent products and services. The value proposition is supported by key resources and activities, leveraging the use of the digital product, while costs can be kept relatively low compared to traditional banks. However, the revenue model provides significant vulnerabilities that threaten the business model's path towards profitability.

## 4.6.Robustness of the Business Model

The previous section has identified certain internal advantages and vulnerabilities of the business model of Neobanks. However, the business model does not only have to arrange itself with internal challenges, but it is also susceptible to external disruptions requiring evaluating the robustness of the business model. Thereby, a business model is considered robust if its forecasts are consistently accurate, even if one or more components are significantly changed due to unforeseen circumstances (Kenton 2020).

To assess the robustness of the Neobanking business model, the method established by Haaker et al. (2017) will be applied. Haaker et al. (2017) established the term "business model stress testing," which illustrates a systematic analysis of the robustness of several business model components. The analysis follows six steps, namely (1) describing the business model, (2) identifying and selecting stress factors, (3) mapping the business model to stress factors, (4) creating a heat map, (5) analyzing the results and (6) formulating improvements and actions. Within this approach, the business model is exposed to a stress test, in which future trends and uncertainties serve as stress factors (Haaker, et al. 2017, 17). The first step of this methodology was already examined so that this section will focus on the second to the fifth step. The last step of this approach will be dealt with in more detail in the last chapter of this report.

**Identifying and selecting stress factors** can be derived from existing scenarios or brainstorming. The actual stress test intends to map the various potential stress factors with the business model components to test which stress factors and business model components are causally related. However, this report intends to shortcut this step by solely stating those stress

factors that are causally related and thus impact the components of the business model of Neobanks. As such, the following **ten stress factors** have been identified:

- **Credit risk:** Assesses the sensitivity of Neobanks towards credit default risk when entering the lending business and evaluates the likelihood of loan repayment.
- **Market risk:** Addresses the impact of changes in equity, commodity prices, interest rates, and foreign exchange rates.
- **Liquidity risk**: Refers to the risk that a bank cannot meet short-term financial obligations without encountering significant losses.
- **Operational risk:** Describes the risk of losses due to inadequate or failed internal processes, people, systems, or external events.
- **Venture capital bubble burst:** Refers to the risk resulting from enormous venture capital investments into so far unprofitable business models. According to Paulo Pinho, this factor could cause severe stress for the future of Neobanks (Table 5, D2, A1.6).
- **Long-term negative interest:** Explores implications of negative interest rates as this affect profitability over time by eroding bank's net interest margins.
- **Decreasing willingness to pay for banking services:** Addresses the increasingly lower willingness to pay for banking services such as payments due to fierce competition.
- **Security breaches:** Evaluates consequences followed by potential security breaches as the business model of Neobanks heavily relies on data gathering and the digital product. Also, Thomas Wille sees this as a crucial factor as security will be decisive for customers' trust and willingness to pay (Table 6, D2, A6).
- **Regulatory penalty:** Examines the risk of penalty related to money laundering or illegal financial transfers that might arise due to simplified account openings.
- **Competition through imitation and/or substitution:** Monitors effects of intensified competition due to possible substitution or imitation.

A **heat map** including a coloring scheme was developed to examine the impact of these stress factors on the business model components. In total, ten green, 15 orange, and 15 red factors were identified (Table 2). The outcome of the heatmap implies that Neobanks need to work towards increasing robustness by significantly counteracting stress factors such as credit risk, liquidity risk, venture capital bubble burst, decreasing willingness to pay, and competition through imitation and/or substitution.

# 5. Business Model Optimization for Neobanks

The previous section has clearly shown that the business model of Neobanks consists of strategic advantages but also strategic vulnerabilities which mainly affect the economics dimension. Besides, the business model is prone to ten stress factors which could destabilize the business model. Based on this analysis, it is certain that the business model needs to be adjusted to ensure its long-term success. In the same vein, literature suggests that business model components are subject to continuous dynamic change. Therefore, anticipating and reacting to the consequences of evolution in any given component is a capability that each business model needs to provide to maintain sustainable performance (Demil and Lecocq 2010, 230). The adjustment of business model components is framed by the term “business model innovation”. The term indicates a change within those components. Although the word “innovation” is associated with radical differences, business model innovation can be both, radical and slight. Thus, business model innovation can refer to what is done differently within the business model components, or to a newly emerging business model resulting from doing things differently. The change is driven by the objective to take advantage of opportunities and to minimize threats to better create and capture value (Afuah 2014, 69-72).

The overarching **goal of this section** of the report is to first provide two recommendations which diminish detected strategic vulnerabilities and then one recommendation which aims to maximize previously identified strategic advantages. In light of the previously mentioned

diverse understanding of the term "business model innovation", it is opted for using the term as to what is done differently within the business model components. As such, the objective is not to introduce recommendations which result in a new business model but to optimize the existing business model components in such a way that they improve the existing business model dimensions and their robustness. A wide mistake that firms often make during innovation processes is to focus on one component of a business model while neglecting potential impact on other components (Afuah 2014, 71-72). Yet, as business model components are interrelated, slight changes in one dimension can positively affect other dimensions. Therefore, the recommendations' impact on all four business model dimensions will be explored. The previous analysis had clearly shown that the revenue model of the business model of Neobanks does not lead to profitability so far. To extend the revenue streams, the following two recommendations have been developed: **(1) expansion and diversification of product and service portfolio and (2) develop a monetization plan.** To maximize on benefits the third recommendation includes to **(3) extend and individualize platform abilities.** The order in which the recommendations are stated also reflects the prioritization in terms of implementation. Thereby, the prioritization is based on the urgency and relevance of implementing the recommendations. As the business model cannot persist without a viable profitability plan, it is considered as crucial to first implement measures to mitigate the risk that goes ahead with negative profitability. The extension of the product and service portfolio should be the first measure to be implemented as the business model already consists of enablers that will support fast implementation. These enablers will be explained in more detail when exploring the recommendations more thoroughly. The second measure to be implemented will be the data monetization which will still require minimally more preparation than the first recommendation. Finally, the platform abilities can be extended, which will profit from established enablers that were set up for the second recommendation.

### 5.3. Extend and Individualize Platform Abilities

As indicated, the business model of Neobanks has a strategic advantage due to its customer-centric value proposition, which is strengthened through complementary offerings for private and institutional customers. N26, for example, introduced a savings feature allowing customers to earn daily interest on their money (N26 2021). These features serve as an initial starting point to differentiate from the competition. Nevertheless, in the long term, these features can be imitated. However, having access to a vast customer database, Neobanks can exploit this advantage to **improve further, extend and personalize digital tools and gadgets** available to customers. These tools and gadgets cannot be easily imitated as they are based on exclusive customer insights unavailable to competitors.

So far, Neobanks provide a desktop or mobile application, allowing access to financial information and tools and gadgets. Once accessing the app, one option to create awareness on additional tailored tools and gadgets could be implementing a "button" underneath the financial overview. When clicking on the "button", a pop-up window can be shown that presents multiple options within two categories, namely "permanent tools" and "individual-situational tools". While permanent tools are similar for all customers, individual tools change based on financial situation and needs. Every analysis tool goes along with an explanatory icon so that customers who are not proficient on financial indicators, such as a debt-to-income ratio or average collection period, can educate themselves. Following the requested analysis, customers receive a PDF in their inbox, including a visual presentation and a (simple) written explanation of findings as well as potential next steps. While the first two points are objective results, the last part provides diverse scenarios of how the customer can improve results according to personal preferences.

Certainly, changes in the digital platform **impact the four business model components**. As such, within the **customer dimension**, the customer journey will be extended for targeted

customers. The number of potential tailored tools will incentivize the customer to use the app and potential analyses more intensively. Consequently, the customer will consciously or subconsciously reflect on their financial situation and its optimization potential. This effect will be intensified through the constant adaptation of individual-situational tools. These tailored digital tools also serve as a lever to increase customers' positive brand perception. This will not only lead to a higher retention rate of existing customers but also attract new customers due to the inimitable service within the competitive landscape.

In terms of **value proposition**, it can be stated that the customer-centric activities are further strengthened while at the same time an educational component is added due to the explanatory icon. Additional value is also added due to the tailored and time-efficient financial results and recommendations. Furthermore, expanded tools and gadgets which are constantly being optimized will allow the business model to gamify the user experience. Customers will pursue standardized financial activities and receive gamified and specific knowledge on the implications of their financial activity.

Regarding the **organizational architecture dimension**, it will be essential to operationalize required processes and analytics metrics and establish a core team working on the data insights. To maintain superior services, feedback given by customers is essential and needs to be analyzed regularly.

For the **economics dimension**, more robust cross-selling opportunities can be inferred due to two reasons. On the one hand, the visual and verbal financial results educate customers and increase their awareness for further needed financial instruments from the current product portfolio to pursue specific goals. On the other hand, customers are advised to buy other financial instruments by suggesting the next possible steps. In both cases, increasing average profit per customer can be expected as revenues can increase due to increasing cross-selling while costs remain stable. Another factor that will promote bottom-line growth will be the more

extensive customer base due to stronger customer attraction and the higher retention rate. Finally, the recommendation also increases customers' incentive to use the Neobank's bank account as their first and only account to take full advantage of provided analyses tools, which are not fully exhaustive when only depositing a small share of the customers' financials. Consequently, the average deposited money per customer will increase, which will increase the liquidity of the Neobank to pursue other income-related operations, like originating loans.

Considering the **impact on the stress factors** displayed on the heatmap, it can be stated that this recommendation can mitigate the risk arising from two stress factors. Firstly, the added value through digital tailored tools and gadgets might not only incentivize customers for cross-selling but also allow exploiting a **willingness to pay** due to the inimitability of the tailored offering. As such, the stress factor concerning general decreasing willingness to pay for banking services might be partially mitigated. Secondly, the stress factor **competition through imitation or substitution** will be reduced due to the inimitability of the tools and gadgets, strengthening the business model's competitive advantage. Likewise, the tailored digital tools and offerings can convince customers and thus, prevent them from leaving the Neobank.

To ensure successful implementation, relevant **enablers** are identified in advance. As such, it is essential to already have an established talent acquisition plan to attract talents who can implement changes on the platform. These talents need to present skills in data analytics to be able to benefit from gathered customer data and understand which tools and gadgets are of interest to both private and institutional customers. Additionally, it is essential to have information in place to **gather sufficient customer insights** on needs and objectives regarding various financial instruments. Lastly, an **effective marketing strategy** needs to be in place to create awareness of the product and service portfolio.

With these enablers ahead, the first step to implement this recommendation will be to **develop a task force consisting of talents who can implement technological requirements** on the

platform to develop the algorithms. Given that this recommendation affects the value proposition significantly, it is advised to remain with building in-house capabilities instead of outsourcing these activities, despite its potential lower costs in the short term. Further, a **second task force** should be created **consisting of employees who can aggregate and analyze customer data** to understand the needs and urgency of implementing specific tools and gadgets. If suitable, employees are already part of the Neobank, this step can be pursued without any high occurring costs. Following the setup of the two task forces, **customer surveys need to be developed,** and results can be shared with all already existing customers. The frequency of surveys needs to be determined, and all customers need to receive these surveys, including reminders in their inbox automatically. Given the wide availability of survey tools, this step can be easily accomplished based on small or zero expenditures.

Having all technological requirements and necessary customer insights at hand, the next step is to **implement the desired tools and gadgets offline** to avoid operational interruptions for customers. This step is more time-consuming as it includes adequate preparation and execution of the programming, which can go along with a certain number of updates. The associated costs can be, among other things, based on the hours invested by qualified employees. According to recent research, to exemplify the costs, the annual average salary of software in Europe was USD 59.493 (Daxx 2021). Further research indicates an average number of working hours of 37 hours per week, i.e., 7,4 hours per day (Statistisches Bundesamt 2021). Assuming an average of 250 working days in Europe, this will result in an average hourly salary of USD 32 per hour. Hence, depending on the specific number of hours to be invested per employee, the development of tools and gadgets can result in high costs.

To ensure comprehensive communication of the new features to customers, it is essential to **set up a brief explanatory guide for customers shortly after establishing the tools.** This guide shall explain the new functionalities and the complemented features of the engagement button

need to be explained. The implementation can be pursued quickly due to access to customers' inboxes. This explanatory guide can go along with a marketing campaign embedded in the existing marketing strategy. The marketing campaign complements the brief guide for all existing customers, but it also generates awareness of potential new customers. The marketing campaign shall highlight the distinctive benefits of the new features and shall be executed over several weeks by using suitable communication channels. Given that marketing is already a significant cost position for Neobanks, this additional marketing campaign implies increasing costs. Once the tools are finalized, they can **be tested within smaller test groups** before being **put online** through an app update. Finally, feedback through customer engagement needs to be constantly gathered and analyzed. It is also important to track customer satisfaction through feedback buttons at the end of each analysis (e.g. like vs. dislike button). This feedback can adapt the tools and gadgets accordingly so that superior services can be offered and maintained. As this represents an ongoing step, it is also related to ongoing costs related to the involvement of employees, which is reflected in their salary.

The **feasibility** of implementing this recommendation can be considered as realistic as it is built upon already established technological metrics. In terms of **reversibility**, it can be stated that each of the steps mentioned earlier is followed by constant iteration processes. Further, the roll-out will start with a smaller test base before becoming available to all customers.

However, there are also a few **risks** related to this recommendation. As such, customers may **not be affected by the cross-selling effect** as they choose to use the recommended financial products from another competitor after receiving the tailored financial analysis through the provided tools. Another risk concerns the **execution of the marketing communication, and only** a few customers will notice the new features and neglect meaningful changes if the communication is not effectively operationalized. Consequently, Neobanks cannot positively impact platform traffic and instead only face the cost burdens related to the implementation.

# 6. Conclusion

**To summarize**, this report analyzed literature on business model definitions, provided an overview on the evolution of business models in the banking industry, and investigated relevant and emerging business models in today's market. The analysis then focused on the business model of Neobanks and identified competitive advantages but also strategic vulnerabilities. Furthermore, the robustness of the business model was tested, and three key recommendations were derived to minimize vulnerabilities and to maximize existing strategic advantages.

The analysis of business models within the banking industry and of Neobanks in particular, resulted in **four key findings.** As such it was identified that not only regulatory, infrastructural, or financial drivers shape and transform the banking industry, but mainly **changing customer requirements and needs.** Thereby the second key finding was that **Neobanks** were able to **detect this significant driver** and thus built their business model around the customer dimension. Hence, the business model first uncovered customer needs and requirements based on data analyses conducted on their digital platform and then concluded on their value proposition to provide low-cost, solely digital, and user-friendly products which are indefinitely accessible due to the development of a suitable organizational architecture. Given the expansible digital platform, customer data is constantly gathered and analyzed to constantly ensure customer centricity. While the business model of Neobanks was built to ensure customer centricity, product-centric traditional banks are confronted with a long adaptation process so that Neobanks encounter significant market takeover potentials.

However, despite the business model's strategic advantages, it was detected that Neobanks entail a significant vulnerability within their economics dimension. Given the **limited revenue streams** that were mainly built around competitive and thus low-margin payment services, profitability cannot be reached indicating a threat on the long-term success of the business model. Besides the results of the robustness test evoked that the business model is partially

**prone to instabilities in case of external disruptions**. These potential instabilities are also rooted in the detected current lack of profitability.

The key findings are the result of a comprehensive overview on business models, respective characteristics, and drivers of business models in the banking industry. The detected literature gap on the business model of Neobanks and its positioning in the banking landscape was filled by this gap, thus implying significant **impact of this report**. Not only did the authors establish a synthesized historical and contemporary overview on business models in the banking industry based on consistent criteria, but they also put emerging business models into this context and provided an inclusive approach to examine their success within this landscape. Thereby the identified advantages and vulnerabilities of the business model of Neobanks allow to derive anticipations on future market dynamics.

To actively shape the future of the business model of Neobanks, lastly, three recommendations were established to diminish vulnerabilities and to strengthen existing competitive advantages. As such, the first recommendation described how the business model of Neobanks can **expand and diversify the product and service portfolio** to generate additional revenue streams within the economics dimension to compete with traditional banks. The secondary objective was to strengthen the value proposition by being able to offer a variety of customer-centric services. The second recommendation again targeted the economics dimension by advising to **establish a monetization plan**, to make use of the generated data volumes. Thirdly, the **extension and individualization of platform abilities** was recommended to build upon the customer-centric value proposition and to gain further scale.

Despite the comprehensive analysis, this report was bound to certain **limitations** to narrow down the research scope. In terms of geographic limitations only business models and respective dynamics in the European banking industry were considered, while business models outside of Europe were neglected. This measure was taken due to substantial variation in global

market dynamics and regulations. Considering solely the European market allowed for a more consistent overview due to persistent similarities which cannot be served on a global scale.

Besides, the examination of business models in the banking industry was solely restricted to banks with a legal banking license allowing to pursue banking services. As such, only the business model of Neobanks with a banking license was analyzed, while Neobanks without a banking license were neglected. In the same vein, digital financial institutions such as Fintechs and big tech firms were also considered out of scope although both partly provide financial (payments) services.

Finally, it needs to be noted that statements from qualitative interviews are based on subjective perspective of the interviewees. These experts represent diverse expert fields within the banking industry thereby providing different subject views. However, since these interviews were constantly juxtaposed to relevant literature, validity of the statements was able to be tested. For the developed recommendations it has to be noted, that, although the three measures are supported by relevant literature and interview statements, they were still established based on the subjectivity and commonsense of the authors.

This report can be further extended, especially when lifting certain of the aforementioned limitations. Hence, the **geographical scope can be extended** to capture cross-continental or global movements and transformations within the banking industry. Further, it can be insightful to **extend the scope of the banking industry** by considering market players without a banking license. As such, not only Fintechs but also big tech companies could be involved into the analysis to identify their impact and role on the banking landscape of the future.

Given the analysis and findings of this report, the authors **expect further transformations within the banking industry.** It is assumed that the business model of Neobanks will not only face competition from adapted traditional players through established digital spin-offs, but also from non-banking competitors such as Fintechs and big tech companies, especially in payments

activities. To sustain within this fierce competitive landscape and to create and capture value, the authors conclude that, in terms of the organizational architecture dimension, the business model of Neobanks needs to rapidly achieve a critical size to enable the strengthening of the economics dimension and to establish a critical position within the banking industry. During this process, however, many challenges will arise, and the business model will certainly depend on inorganic growth through mergers and acquisitions, implying consolidation movements, while at the same time, not all currently present Neobanks will survive. Finally, the authors would like to highlight that banking industry movements will continue to be driven by customer requirements and given the impact of the megatrend digitalization, online and mobile solutions will continue to be taken for granted. In that light, the future of the banking industry might face the anticipation stated by interview Georg Hauer: *"If today we are talking about banking, people think of branches but in 15 years will think of their smartphones. The change happens in the mind of people."* (Table 7, D1, A3.3).

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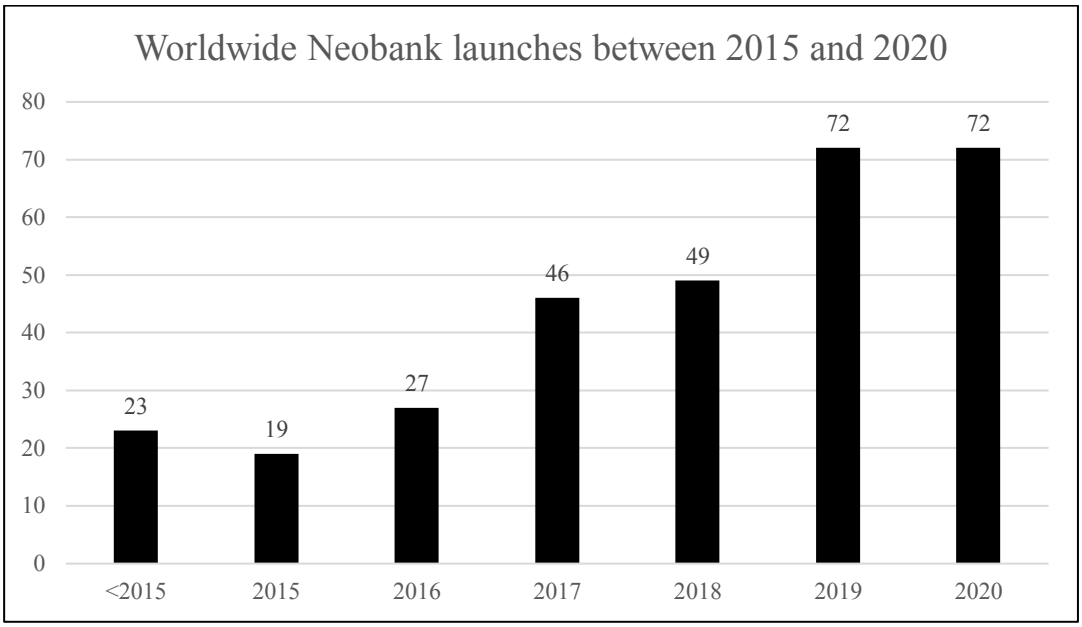
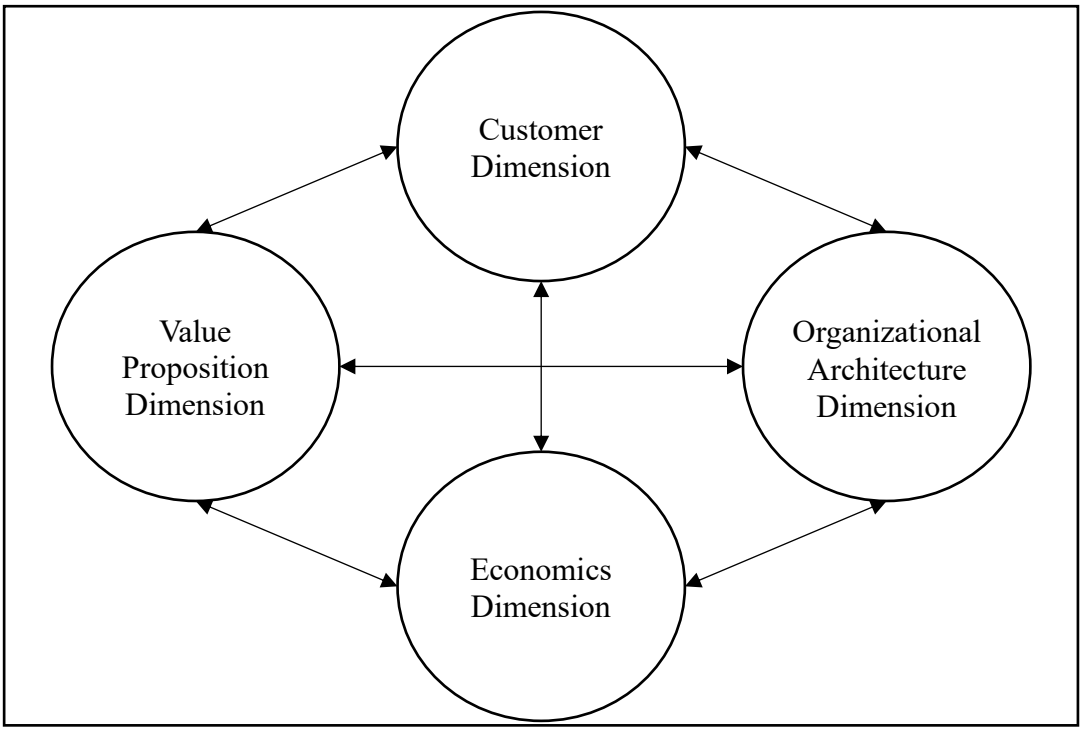
# Appendix

Figure 1: Number of Neobank launches worldwide between 2015 and 2020



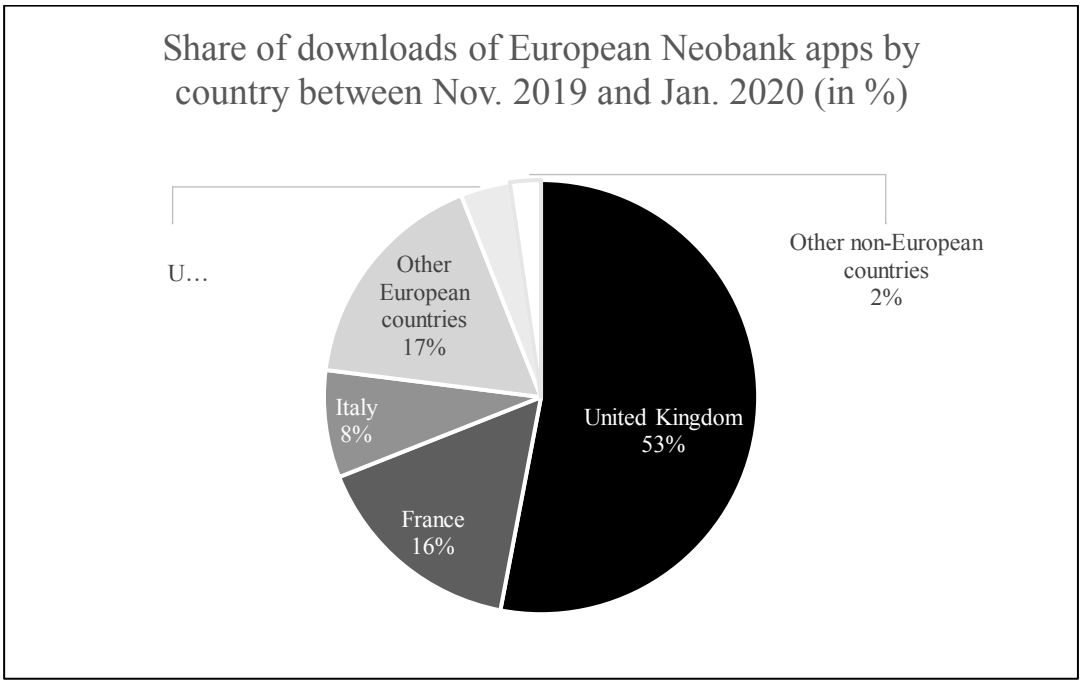

Source: Own illustration based on Exton Consulting 2020, 3

Figure 2: Business Model Dimensions



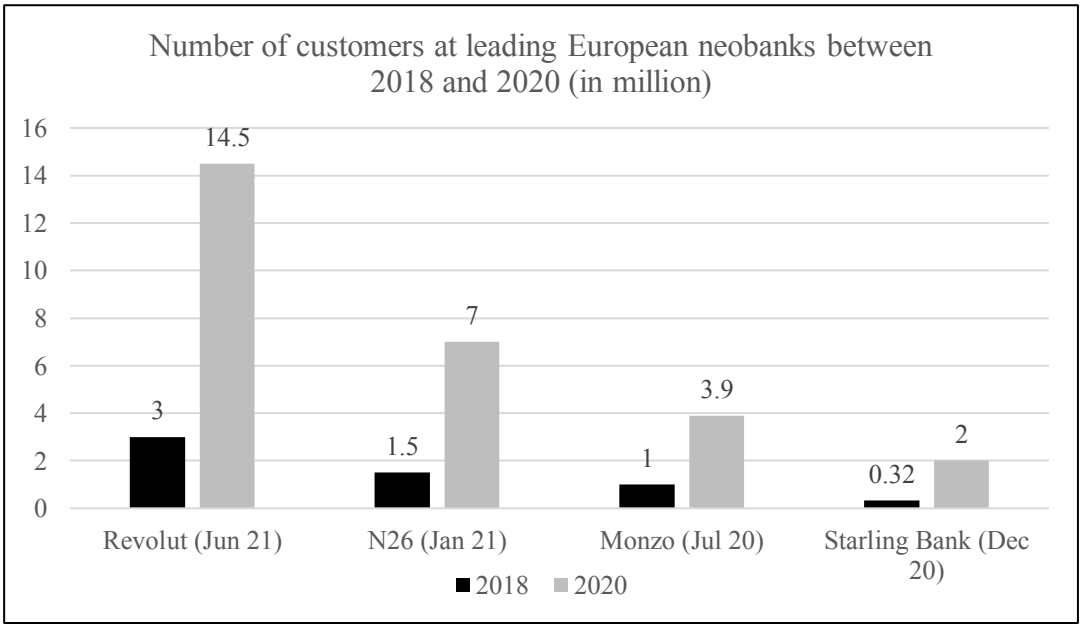

Source: Own illustration based on Fielt 2014

Figure 3: Downloads of European Neobank apps by country between 2019 and 2020



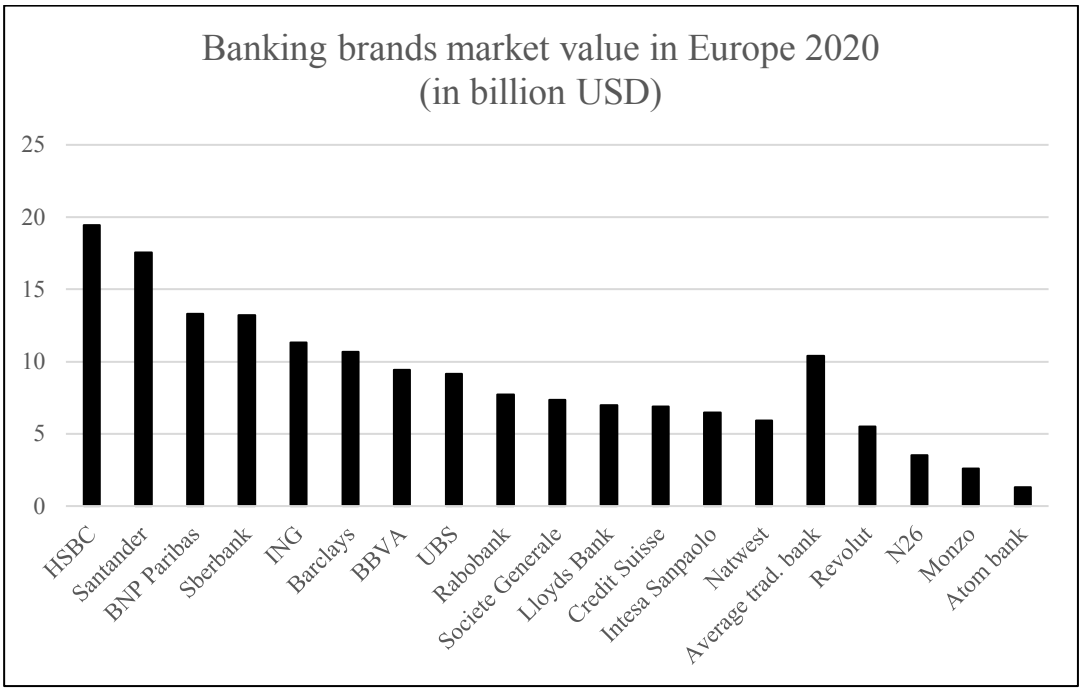

Source: Own illustration based on Schelakov, et al. 2020

Figure 4: Number of customers at leading European Neobanks between 2018 and 2020



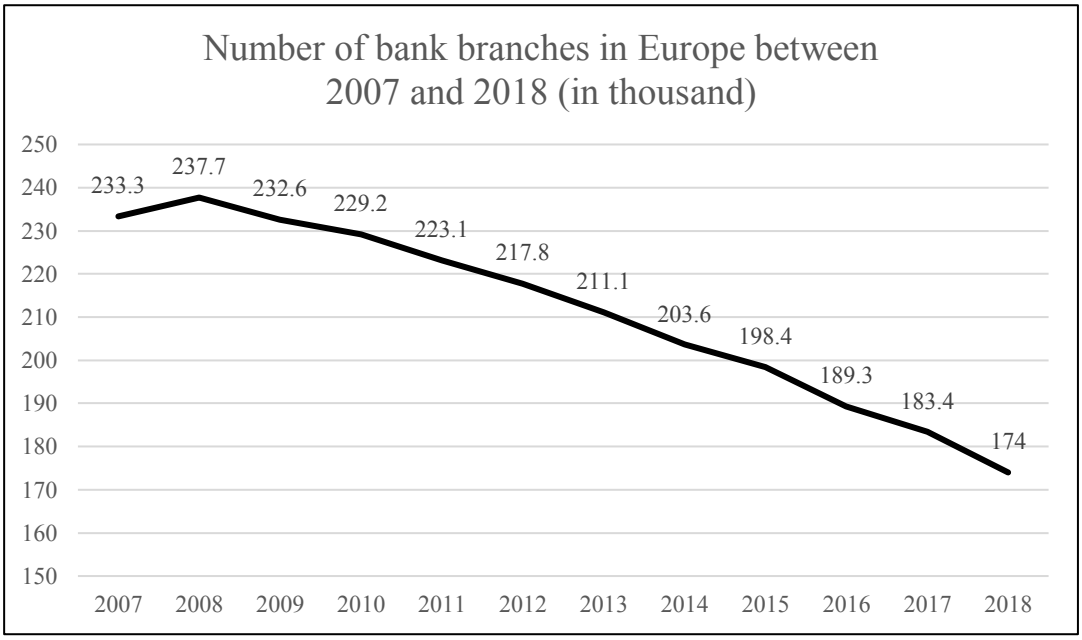

Source: Own illustration based on Ruttmann, et al. 2021, 11; Statista 2021

Figure 5: Market value of brands of traditional banks and Neobanks in Europe in 2020



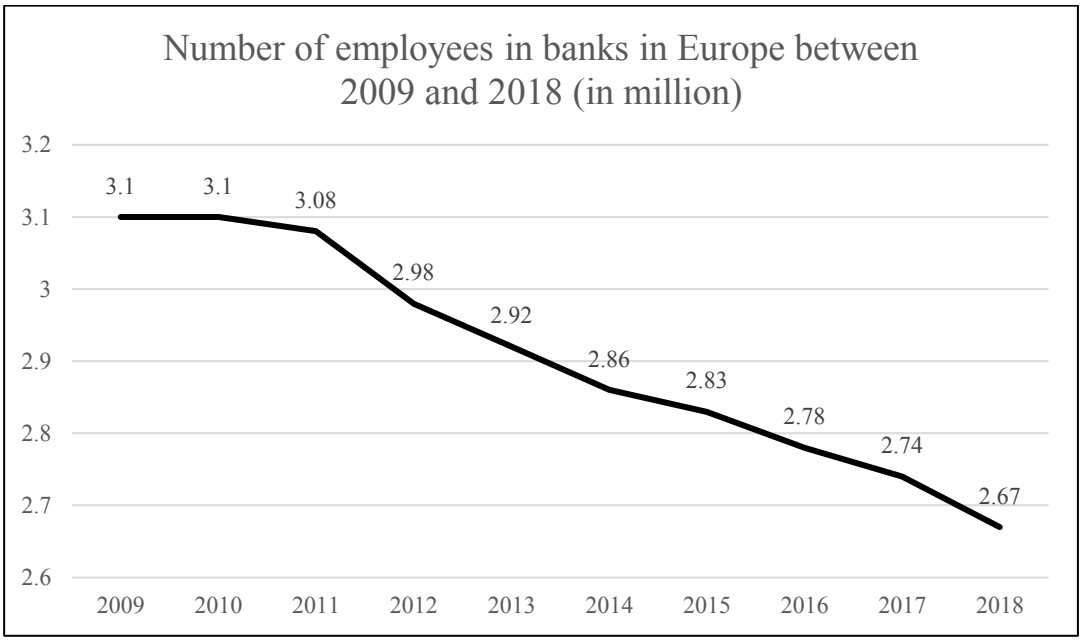

Source: Own illustration based on Statista 2020, 25

Figure 6: Number of bank branches in Europe between 2007 and 2008




Source: Own illustration based on Statista 2020, 14

Figure 7: Number of employees in banks in Europe between 2009 and 2018




Source: Own illustration based on Statista 2020, 15

Table 1: Overview on different sources of literature

| # | Type of Reference | Number of References |
|---|---|---|
| 1 | Website | 77 |
| 2 | Document from website | 16 |
| 3 | Artical from journal | 18 |
| 4 | Report | 4 |
| 5 | Consulting report | 9 |
| 6 | Book | 7 |
| 7 | Book section | 2 |

Source: Own illustration

Table 2: Robustness test on stress factors of the business model of Neobanks

| | Customer Dimension | Value Proposition Dimension | Organizational Architecture Dimension | Economics Dimension |
|---|---|---|---|---|
| Credit Risk | | | | |
| Market Risk | | | | |
| Liquidity Risk | | | | |
| Operational Risk | | | | |
| Venture Capital Bubble Burst | | | | |
| Long-Term Negative Interest Rate | | | | |
| Decreasing Willingness to Pay for Banking Services | | | | |
| Security Breaches | | | | |
| Regulatory Penalty | | | | |
| Competition through imitation and/or substitution | | | | |

Legend:

- The occurrence of the stress factor makes the business model component no longer feasible
- The occurrence of the stress factor makes the business model component is no longer viable
- The occurrence of the stress factor neither affects the feasibility nor the viability

Source: Own illustration

Table 3: Overview on interview partners for expert interviews

| Number | First Name | Last Name | Nationality | Expertise | Current Position |
|---|---|---|---|---|---|
| 1 | Afonso | Eça | Portugal | Fintech, Finance, Banking | • Co-Founder of Raize<br>• Adjunct Professor of Finance at Nova SBE |
| 2 | Paulo | Pinho | Portugal | Banking, Corporate Finance, Private Equity, Venture Capital | • Professor of Banking and Finance at Nova SBE and Cass Business School<br>• Academic Director of the Lisbon MBA |
| 3 | Thomas | Wille | Switzerland and Germany | Traditional Banking, Finance, Economics | • Head of Research and Investment Strategy at LGT - Private Bank |
| 4 | Georg | Hauer | Germany | Neobanking, Fintech, Startups, Business Model Disruption | • Former General Manager DACH & Northern Europe at N26<br>• COO/CFO at HAWK:AI (Germany's leading software platform for banks, fintech and payment companies) |

Source: Own illustration

Table 4: Interview transcription Afonso Eca

| Dimensions | Afonso Eca |
|---|---|
| **Customer**<br><br>**D1** | • **(A1)** They (Revolut & N26) both targeted retail millennials, 100% digital experiences and card-based technologies.<br>• **(A4)** People want one single app instead of 20 different ones, so all brands try to become beloved brands. This creates a challenging competitive environment for Neobanks. |
| **Value Proposition**<br><br>**D2** | • **(A1.1)** They (Revolut & N26) both offered nice user experience in terms of apps with the same kind of features, and both did not target innovation in technology but only used existing infrastructure.<br>• **(A1.2)** At the same time Revolut and N26 can offer crypto assets, while Neobanks who are owned by other banks won't be able to offer these services.<br>• **(A2.1)** The credit business, however, is very challenging as it required funding. Funding can be done in two ways, customer deposits and/or funding from financial partners. Customer deposits can be seen as a question mark, as most customers use these Neobank accounts for payments but not for major savings. Therefore, deposit capture is challenging for Neobanks.<br>• **(A2.2)** Their (Neobanks) risk capabilities on those matters are unknown and thus they are missing a track record to refer to. As a consequence, cost of funding on their balance sheet will be much higher. Being a bank or becoming a bank, business becomes all about credits, so the cost of funding plays a huge rule in terms of competitiveness in the banking landscape.<br>• **(A4.1)** The only way Neobanks can survive is by distinguishing themselves from traditional banks. The closer Neobanks get to the services that traditional banks provide, the closer they are to lose the race. They (traditional banks) have a lot of clients and a lot of assets, they know how to serve regulations and crisis. That's why Neobanks have to operate differently. It will all be about value added services.<br>• **(A4.2)** Neobanks must work to become something bigger than a bank, they have to work to become a loved brand, and this will ensure their path towards success. They must become apps that helps to manage a customer's life and life is more than managing banking. They must become permanent touchpoints with clients.<br>• **(A4.3)** There is also a big opportunity to interact with SME's and to facilitate their lives in terms of financial planning, managing suppliers and accounting. There, Neobanks have a big opportunity because they possess a big talent pool of tech and businesspeople. Young generations nowadays prefer working for young start-ups and developing new banks instead of traditional banks.<br>• **(A4.4)** The opportunity for Neobanks lies in their value proposition and the fact that they have access to a talent pool consisting of tech and business graduates. The only question is whether Neobanks will have enough time to make use out of this opportunity or whether traditional banks will catch up and capture the market all over again. |
| **Organizational Architecture** | • **(A1)** Five years ago they (Revolut and N26) were both card-based payment providers with nice user apps, but N26 was regulated as a bank |

| | |
|---|---|
| **D3** | in Germany and Revolut only as a payment institution in the UK. Likewise, N26 was at the top of the chain in terms of regulation while Revolut was at the bottom.<br>• **(A2)** This (smaller size) is a major disadvantage for Neobanks.<br>• **(A3.1)** For Neobanks to thrive in the future, the logical step for VCs is to put even more money on their operations to allow them to undertake M&A activities with execution risk.<br>• **(A3.2)** In the future, we will see more concentration and some brands will either become big or they will disappear. But the jump to make in terms of number of clients and of banking assets is huge and bears a lot of execution risk.<br>• **(A4)** In total Neobanks need to grow so that their balance sheet can compete with traditional banks in terms of cost of funding. |
| **Economics**<br><br>**D4** | • **(A3)** Neobanks need to scale and grow. Many Fintechs in UK used mergers to scale. Some Neobanks merged with traditional banks. The main challenge is to gain scale and finance organically. |

Source: Own illustration

Table 5: Interview transcription Paulo Pinho

| Dimensions | Paulo Pinho |
|---|---|
| **Customer**<br><br>**D1** | • **(A3)** Neobanks would need to focus on market segments where other forms of differentiation than price, allow for competitive advantage.<br>• **(A4)** In contrast to the common thought, people with 55 years and more are using online banking instead of going to branches. Nonetheless, there are enough other age groups that need the human contact for customer satisfaction even though they are capable of using the new technologies. |
| **Value Proposition**<br><br>**D2** | • **(A1.1)** Neobanks cannot enter the credit market and have to focus on markets which are more and more competitive, such as the payments market. Neobanks compete on market niches that are highly concentrated with players that have competitive advantage.<br>• **(A1.2)** We need to keep in mind that every business that can manage a complete relationship with a customer has a competitive advantage, because the business can spread its costs and produce a large set of products in order to satisfy the customers' needs in a superior way.<br>• **(A1.3)** Another important aspect is human relationship. An SME could not deal with its problems through a standardized platform and apps. If you need advice for a certain thing, you need people you can trust. Trust is an essential part of banking.<br>• **(A1.4)** The price is the only value proposition that Neobanks compete with. If Neobanks need to offer interest rate to the client to overcome opportunity costs, the price would need to rise and thus, the value proposition would be lost.<br>• **(A1.5)** Nowadays, the business models are switching towards serving the financial needs of clients, not only offering credits and deposits. So, banks have to offer an increasingly wider service range. The small Neobanks have a hard position, because they can only offer a narrow part of the service offerings of traditional banks.<br>• **(A1.6)** When the (venture capital) bubble bursts, as we have learned from the past, we will see which business models are truly competitive on the market. This means that Neobanks cannot enter the credit market and have to focus on markets which are more and more competitive, such as the payments market.<br>• **(A4)** Speaking about the big data revolution, the core of a business model today is customer information. |
| **Organizational Architecture**<br><br>**D3** | • **(A3)** The Neobank could be the producer of the financial product that supplies its services such as payments or consumer loans to the bank that is in direct contact with the client. |

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| **Economics**<br><br>**D4** | • **(A1)** The Neobank's business model is based on two pillars. The first pillar is commissions from payments, which is indeed working. The second pillar is managing the floats, which cannot work with negative interest rates. There, customers have zero opportunity costs of having money stored in banks such as Revolut. Revolut, on the other hand, earns a negative interest rate on that money. Thus, Revolut actually loses money for storing the clients' money. If interest rates go up, Neobanks can make money through the second pillar, however, clients will be more aware of having opportunity costs for storing their money at a bank.<br>• **(A3)** Neobanks need to go into banking. But that would require considerable investment. Once you become a bank, the regulatory burden becomes so big that you need to invest more money and that is a problem for Neobanks.<br>• **(A4)** The question is who is going to dominate the banking area, because you need to keep in mind the economies of scale. It costs the same virtually if you serve 100 clients or 100.000 clients. |

Source: Own illustration

Table 6: Interview transcription Thomas Wille

| Dimensions | Thomas Wille |
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| **Customer**<br><br>**D1** | • **(A6)** The new generation must be kept in mind. This generation prefers the use of apps and this generation will be dominant in 2030-2040. This means that banks have to adapt their services to this generation and their needs so that they are willing to pay for them. They need a digital channel to the customer and continuous access to their own data. |
| **Value Proposition**<br><br>**D2** | • **(A1.1)** Neobanks have recognized a need among customers. The need concerns universal and constant access to one's own information on accounts, etc. This access is no longer linked to the bank counter or a branch, but to the mobile phone and the apps on it. Customers no longer associate this access with the bank counter or a branch, but with their mobile phone and the apps on their mobile phone.<br>• **(A1.2)** Neobanks enable easy access to all data through apps. Many customers today also have this trust of security in their mobile phones<br>• **(A2)** In general, purely providing an electronic wallet and not charging fees is not a feasible business model in the long term. The Neobanks need to expand their offering.<br>• **(A3)** Another weakness of Neobanks is the low hurdle to switching. They have almost no customer loyalty and the services seem quite interchangeable so far.<br>• **(A4)** What Neobanks have to do is to build a portfolio of services that the consumer is willing to pay for. However, this approach is fraught with many challenges.<br>• **(A6)** It will also be a lot about trust and security. If a technology can offer me that, then I would also be prepared to pay for it. |
| **Organizational Architecture**<br><br>**D3** | • **(A1)** Today, a lot has to be done on the IT side, but this is a challenge for established players, as the associated costs (such as personnel costs) are immense. New banks, on the other hand, have lower costs, especially in terms of staff, and they are more flexible.<br>• **(A5)** Roughly speaking, it cannot work so easily for a big bank to take over a Neobank. There are big differences in culture and setup. The legacy of a universal bank alone makes the merger between the bank's IT and the app of the new bank difficult. There is also the question of cannibalization.<br>• **(A7)** Only by focusing on one's own core competencies can money be made. This also means that you should stop serving certain areas in-house. Instead, one could also consider buying in some things. It is more important to emphasize the core competence. |
| **Economics**<br><br>**D4** | • **(A2.1)** In general, purely providing an electronic wallet and not charging fees is not a feasible business model in the long term. The Neobanks need to expand their offering.<br>• **(A2.2)** Many of the Neobanks are being treated as disruptors. But you have to keep in mind that you can disrupt a market, but that does not necessarily mean that the business model will become profitable. Many Neobanks have not yet passed this test.<br>• **(A2.3)** In general, purely providing an electronic wallet and not charging fees is not a feasible business model in the long term.<br>• **(A3.1)** Of course, they could offer more services, but more and more |

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| | services also mean higher and higher costs.<br>• **(A3.2)** However, the management must also evaluate the stability and profitability of the foundation on which progress is to be built on. |

Source: Own illustration

Table 7: Interview transcription Georg Hauer

| Dimensions | Georg Hauer |
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| **Customer**<br><br>**D1** | • **(A3)** The next generation will barely remember that there was a time where people actually went to a bank branch to use the services. If today we are talking about banking, people think of branches but in 15 years will think of their smartphones. The change happens in the mind of people.<br>• **(A6)** The customer needs are very similar; everyone receives a salary, everyone spends money online, does grocery and all that. Banking has been organically growing which resulted in the fact that habits are different locally despite that the needs are the same. |
| **Value Proposition**<br><br>**D2** | • **(A3)** There are two trends that we see: in the future the biggest differentiation of banks will become the digital product. In the past the banks have been differentiating themselves with the locations of their bank branches.<br>• **(A4.1)** Today what matters most is to have control of your own finances. The traditional model often relies on credit cards where you only see your transactions and costs at the end of the month while with N26 you see it immediately and you have the safety to know what happens at the same moment.<br>• **(A4.2)** The second point is about security. Even if someone steals your credit card and tries to spend money, the moment a transaction happens, you receive the notification on your phone. It asks you to confirm the transaction and you can confirm or stop it. This is how security looks in 2021. Convenience plays a big role.<br>• **(A8.1)** We are already offering credits in three to four markets. We offer overdraft credits in Germany and Austria and consumer credits in Germany and France. We are planning on rolling that out to other markets.<br>• **(A8.2)** Even the most complex product, which is mortgage, will be bought online. Other key products will already be online much earlier. |
| **Organizational Architecture**<br><br>**D3** | • **(A1)** I made the friend referral the most important growth channel. Today, two thirds of our new customers come from the friend referral.<br>• **(A2.1)** What ultimately counts are the people because they have the impact in the company. It is not how you can outprice the traditional banks to attract talents because they pay very well, it is about the impact and the responsibility.<br>• **(A2.2)** No matter how much money traditional banks spend for consultants, they can't acquire the creative and entrepreneurial spirit.<br>• **(A7)** Regulatory requirements are the biggest hurdle. In Europe, the European Economic Area and Switzerland you can work with the same banking license which makes it very easy. |

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| **Economics**<br><br>**D4** | • **(A1)** I made the friend referral the most important growth channel. Today, two thirds of our new customers come from the friend referral (customer acquisition costs).<br>• **(A3.1)** An average bank branch in Germany costs between EUR 600.000 and EUR 1.000.000 a year for a medium sized branch and they have on average 3.000 clients. Thinking that these clients have to pay for the costs of the branch, is ridiculous.<br>• **(A3.2)** Also, in terms of expansion a traditional bank might acquire an additional branch for one million euro to get a few thousand clients. However, if you want to create a digital product, it can cost between EUR10 m or hundreds of millions of euros and that is an amount that a small and regional bank will not be able to pay. Once you invest, you can scale your product and attract a large customer base. |

Source: Own illustration