



Exploring banking business model types: A cognitive view

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ARTICLE INFO

Article history:

Received 26 February 2021

Received in revised form 13 July 2021

Accepted 13 July 2021

Keywords:

Business model

Banking industry

Business model types

ABSTRACT

The value creation mechanism in a business model is based on a thoughtful configuration of mostly intangible microfoundations. The business model concept is rooted in business logic and strategic management literature. Banking literature lacks the business model concept, which is described based on subjective ideas and qualitative approaches. This article aims to explain the business model concept in banking with a cognitive view. For this purpose, we have qualitatively studied 50 cases of business models of innovative and leading banks and their value proposition structure. Through content analysis, four types of banking business models emerged. The findings proposed a banking business model presented at three levels, i) generic banking business model, ii) types of banking business models, and iii) instances of implementations at the realization level. The constructing microfoundations of each type and their composition are discussed in detail. Actual cases (instances) implemented in the industry are also presented and discussed as evidence of the realization of type models.

1. Introduction

The business model concept has recently been studied in various industries (Zott, Amit, & Massa, 2011). The increasing number of citations to articles focusing upon banking business models indicates the researchers' growing interest in this area of the banking sector. With a simple search for the number of citations to articles whose titles included "banking" AND "business model" in Scopus and Web of Science, we noticed an obvious growth in citations to banking business model articles. Exported reports from both of the mentioned databases indicate that the number of articles discussing banking business models has been increased from 2 articles to 25 articles per year from 2002 to 2020. The number of citations to the mentioned articles increased from 5 to more than 300 citations per year. This increase in attention is probably due to the response to rethinking the bank business model after the financial crises of 2007–2009, and consequently, banks' profitability concerns, changes in risk levels, and banks' orientations in the post-crisis situation (Hanafizadeh & Marjaie, 2019). Another reason for attention to the banking business model research could be the emerging disruptive Fintech companies, which have created new competition and market share challenges for conventional banking business models.

A bank's strategic maneuver includes choosing the right business model, selecting a target market, and identifying the right product or service. Strategy refers to the choice of a business model by which the bank competes (Casadesus-Masanell & Ricart, 2010). Business models are competition tools of an organization (Teece, 2010). In a competitive environment, banks inevitably seek to use all their resources to achieve goals and

succeed against their competitors (Donnellan & Rutledge, 2019). On the other hand, banks' products and services are easily seen by the public, and intellectual property laws do not protect innovative products and services (Hsu, Wang, & Wu, 2013). As a result, competitors can simulate and thus copy them.

Banks are concerned about losing market share in the money market ecosystem against the competition created by disruptive financial institutions and Fintech companies (Hanafizadeh & Marjaie, 2019). Intense competition amongst banks can lead to losing customers and fleeing resources of banks. Moreover, in a highly competitive market, profit margins are eroded, and banks might take excessive risks to increase returns (Berger, Klapper, & Turk-Ariss, 2017).

To tackle such a rivalry situation, understanding the business model is crucial (Magretta, 2002). An appropriate, effective, and innovative business model will create a competitive advantage for a bank. Business models help banks achieve a continuous and sustainable competitive advantage by benefiting from internal strengths and monitoring and seizing opportunities outside the organization.

Therefore, the first question of this research is, "what is a banking business model?". To answer this research question, we aim to define the banking business model by identifying microfoundations of a business model as the vital elements that can be orchestrated in the shape of a business model framework.

After understanding the banking business model by definition, in response to our second research question, i.e., "what are the banking business model types?" we aim to identify types of the unique orchestrations of

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microfoundations in the form of different business model types. Typology simplifies complex and intertwined concepts and creates the basis for arranging an idea (Lambert, 2005). This way, we contribute to banking literature by forming a theoretical and empirical basis for future studies on the banking business model.

By answering the two research questions, we aim to draw a cognitive perspective to the subject of the banking business model, which will contribute in theory and practice to the banking business model discussions for actors inside and outside the bank (Baden-Fuller & Haefliger, 2013; Baden-Fuller & Mangematin, 2013; Martins, Rindova, & Greenbaum, 2015). Our goal is to shed more light on the banking business model concept by depicting the structure and configuration of microfoundations, internal governance of the organization towards the implementation of the chosen type, and identifying the microfoundations involved in the capability and value creation process by the appropriate type of business model.

We use microfoundations to theorize the business model concept at the industry and firm levels. Barney and Felin (2013) argue that microfoundations in business strategy context can lead us to internal concepts, create further understanding of organizational competitive advantage, understand capability, heterogeneity, and the role of specific actors in building capability. In this study, we use microfoundation based on a multi-level definition provided by Felin, Foss, Heimeriks, and Madsen (2012) that microfoundations locate the causes or explanations of a phenomenon or outcome, theoretically or empirically, at levels of analysis lower than that of the phenomenon itself. We consider microfoundations as the key ingredients of a business model, potentially orchestrated through the business model framework to propose a unique value. Hence the whole structure of our exploration is founded on identifying the microfoundations as the key ingredients of the business model concept. We define a microfoundation as the smallest unit of a business model that points to a certain intangible or tangible source, a certain capability, a key partner, a particular segment of customers, key activities, or other critical defining components. By putting the microfoundations together in the structure of a business model, a unique composition is formed that can ultimately lead to exceptional or competitive value. On the other hand, type variation in business models appears through the variation in configurations of microfoundations.

This article explains the banking business model concept in three levels, i) generic level, ii) type level, and iii) instance level. The formation of microfoundations of a business model at each level is explored and described. Finally, actual instances of models from the banking industry practice are presented to support the type models.

After the introduction, we review the existing literature. Then, we will discuss the research method followed by the findings and discussions of the proposed banking business model types. Next, our discussion about the four business model types and their characteristics based on the influential microfoundations will lead us to actual banking business cases. Finally, we conclude the paper and propose suggestions for future studies.

2. Research background

There are multiple perspectives to business model concepts. For example, Martins et al. (2015) mention three views, namely, i) the rational positioning view, ii) the evolutionary view, and iii) the cognitive view. Hanafizadeh, Mehrabioun, Badie, and Soofi (2018) argue that a holistic view to designing a business model benefits from the mentioned views. In the business model development literature, having a holistic approach is an important issue, especially when addressing the social complexities of business model development.

There are two more views on the business model concept (Spieth, Schneckenberg, & Ricart, 2014). Early thoughts on business model literature are influenced by a structural view to explain business (Lambert & Montemari, 2017). In contrast, in recent literature, the business model concept has been a cognitive tool for actors inside and outside the organization (Baden-Fuller & Haefliger, 2013; Baden-Fuller & Mangematin, 2013; Martins et al., 2015). The business model concept in banking has been discussed through the two clustering and ontology approaches, although

the latter appeared relatively minor. The clustering approach is rooted in the structural view, and the cognitive view has influenced the ontology approach. We will discuss them in detail in the subsequent sections.

2.1. Structural view

The structural view seeks to identify how banks operate by studying the selected financial indicators derived from the financial statements data. These indicators can be described and analyzed along with the banks' performance data and statistical methods, specifically clustering. The structural view seeks to identify and explain the banking system's performance by classifying its business model from a regulatory standpoint and ultimately is concerned with its strength and ensuring its stability for survival (Ayadi, 2019). Quantitative and reductionist studies with retrospective data clustering methods fall into this category of banking business model studies. Influenced by this view, researchers studied the evolution of business models (Köhler, 2014), business model types trying to find similar features (Ayadi et al., 2016; Ayadi, Arbak, Naceur, & De Groen, 2015; Ayadi, Arbak, & Pieter De Groen, 2011; Ayadi & De Groen, 2014; Ayadi, Keoula, Pieter De Groen, Mathlouthi, & Sassi, 2017), banking regulations and monitoring the behaviour of banks (Ayadi, 2019; Ayadi et al., 2015), banking business model influenced by economics and accounting theories (Huelsbeck, Merchant, & Sandino, 2011; Ittner, Larcker, & Randall, 2003), and value creation through business models (DeYoung, 2005; Sorescu, Frambach, Singh, Rangaswamy, & Bridges, 2011).

In the studies mentioned above, the reality of a bank's business model is not necessarily reflected. For instance, they have not addressed intangible resources such as maturity of processes, human resource expertise, dynamic capabilities, or expert knowledge and communications skills in shaping the business models. Rather, the studies mainly focus on the banks' conventional business, which gathers deposit funds as tangible assets and offers loans (Chen, Danbolt, & Holland, 2014).

They mainly run cluster analysis on secondary data from financial statements that fail to represent intangible resources. Considering the fact that tangible and intangible resources of banks can hardly be distinguished, researchers may assume that in any case, both tangible and intangible resources contribute to the bank's financial results. However, the business logic behind the value generated and proposed through these types of resources should be differentiated.

The methodology of structural studies is similar in terms of theoretical assumptions. Most of them assume that a set of measurable variables based on financial statements can show the banks' performance. They utilize statistical methods without bias and generalize the results to a region, country, or continent. Banks' business orientations and fund allocation are taken as their business models. They introduce statistical clustering techniques to classify the banks' business orientation and call each cluster a banking business model. This approach often ignores the business logic literature that theorizes business models.

Researchers such as Ayadi et al. (2017) and Ayadi et al. (2016) have conducted studies using clustering methods. For example, to explain banking business models in Europe, 147 European banks (about 80% of the market) have been included in their study. They assume that if banks have consciously chosen their business models, it will be reflected in the financial indicators. Therefore, the clusters are meaningful in terms of representing the banks' orientation and business logic. The results present 4 clusters of banks as investment banks, wholesale banks, retail-diversified banks, and retail-oriented banks. By the same method, global-scale studies have determined banking business models: banks financed by micro-deposits, banks funded by significant deposits, and banks connected to the capital market are classified as investment banks (Roengpitya, Tarashev, & Tsatsaronis, 2014).

2.2. Cognitive view

In contrast to the structural approach (cluster analysis), the cognitive (ontological) approach can explain the concept of a bank's business

model, including the business logic of a bank, a certain configuration of microfoundations, using intangible resources, and the way to create a competitive advantage through innovation in services and products. Through the cognitive view, researchers can provide a coherent picture of the bank in a competitive context using its unique blend of microfoundations to propose a unique value as a competitive advantage (Schindehutte, Morris, & Kocak, 2008; Yunus, Moingeon, & Lehmann-Ortega, 2010). In this view, the business model indicates the cognitive structures of a firm's boundaries, how to configure and orchestrate, how to create value (Doz & Kosonen, 2010), and how to become an operational recipe for managers (Baden-Fuller & Haefliger, 2013; Sabatier, Mangematin, & Rousselle, 2010).

Some studies (Hansen, 2016; Łosiewicz-Dniestrzańska & Nosowski, 2013; Mustafa, 2015; Nosowski, 2017) have made limited efforts to describe the banking industry's business logic through the lens of business model ontologies. They seek three main objectives, namely 1) to create a conceptual framework of planned businesses in banking, 2) to identify weaknesses and inconsistencies, and 3) to study banking groups of companies and their business units. The Polish Financial Supervision Commission has also recognized the business model's ontology approach to better monitor quantitative and qualitative methods. The commission is responsible for overseeing banking, capital markets, insurance, pension schemes, and e-money institutions (Larsen, Nissen, Lueg, Schmaltz, & Thorhauge, 2014). In all the studies mentioned above, the business model view has been used as a cognitive tool.

Regardless of how the business model framework and the building blocks are defined in business model studies, the elements typically include four core areas: 1. Value creation 2. Customer relationship 3. Infrastructure and cooperation network, and 4. Financial aspects (Osterwalder & Pigneur, 2004; Osterwalder, Pigneur, & Tucci, 2005). The cognitive (ontological) approach has been developed in the literature of business models by researchers such as Osterwalder et al. (2005) and Hedman and Kalling (2003). For example, the business model canvas (the 9-elements model) of Osterwalder et al. (2005), which includes customer segment, value proposition, distribution channel, customer relationship, revenue stream, key resources, key activities, key partners, and cost structure, has been the focus of many studies. This approach to understanding the business model can be used as an analytical tool in typological studies.

As discussed above, the structural view is not fully capable of depicting the reality of the business model phenomenon in banking; hence we adopted a cognitive view for exploring bank business models. The business model as a cognitive tool in banking can be used to guide managers in obtaining the cognitive structure of the organization, the structure and internal governance of the bank, and most importantly, to create value in the bank (Baden-Fuller & Haefliger, 2013; Doz & Kosonen, 2010; Sabatier et al., 2010). As a cognitive tool, the business model can present subjective patterns and abstract frameworks or summaries of the bank's business knowledge in one framework (Fiske & Taylor, 1991). Ultimately, it contributes to forming managerial understanding or studies of organizational design and interaction mechanisms related to value creation and competitive advantage (Martins et al., 2015).

By presenting the two different views above, it can be concluded that creating a proper understanding of the business model in banking requires identifying the organization, microfoundations, components, and generic types of banking business model through structural and cognitive approaches.

3. Method design

In this paper, we seek to answer research questions using a qualitative research method. A qualitative approach is appropriate to explore, discover and analyze real-world phenomena (Miles & Huberman, 1994). To study the true nature of the business model as a phenomenon, we used directed, deductive, and inductive content analysis methods. This section will explain how data collection, coding, and analysis were conducted. The overall perspective of the research roadmap is also shown schematically in Fig. 1.

3.1. Data collection

In total, we collected 50 cases as listed in Appendix A - Table A1. We selected 45 cases from the Banker website (The Banker, 2020) by reading about the cases and browsing their websites amongst more than 132 banks. We added five cases of banking business models at the global or regional level explored and reported by Ayadi (2019) to our sample list.

We selected banks that consistently claimed to offer innovative banking services based on a specific business model during sampling. Banks usually explain their activities, innovations, service delivery models on the bank service description page or published reports. For example, Deniz Bank of Turkey claims to offer special services to farmers: "Deniz Bank provides a new banking concept called *Tarim Plus (Tarim +)* to maintain its leading position in agricultural banking". The use of terms such as "pioneering positions in agricultural banking, a new banking concept" is intended to indicate examples of innovative services.

To ensure external validity during sampling, we selected banks with a similar innovation or business orientation context, i.e., retail or wholesale banking. We considered five conditions in selecting the sample banks: 1) Providing retail banking services, 2) Having an official website and published official reports, 3) Explaining the logic behind the service provided or its business model 4) Claiming to provide innovative services; and 5. Providing the claimed services requires tangible and intangible resources more than what is required in conventional banking.

3.2. Coding and analysis

The content collected from the samples formed the primary textual data of the present study. We performed the initial coding process using directed content analysis. Directed content analysis is more structured than the conventional (exploratory) content analysis approach (Hickey & Kipping, 1996). Therefore, it was necessary to specify a code classification framework based on the key concepts discussed in the previous studies or existing theories (Potter & Levine-Donnerstein, 1999).

3.2.1. Code classification framework

To find the suitable code classification framework, we reviewed the existing literature on building blocks and dimensions of the business model concept (e.g., Al-Debei & Avison, 2010; Chesbrough & Rosenbloom, 2000; Hedman & Kalling, 2002; Hedman & Kalling, 2003; Johnson, Christensen, & Kagermann, 2008; Morris, Schindehutte, & Allen, 2005; Osterwalder, 2004; Weill & Vitale, 2001). A comparison table is presented in Appendix E - Table E1 to identify the common elements of the business model concept in their definitions. Most of them include key activities, key partners, key resources, customer relationship, customer segment, revenue stream, cost structure, value proposition, and channels as the key components of the business model concept.

We found the nine building blocks of the business model canvas proposed by Osterwalder and Pigneur (2003) more suitable as a code classification framework in this study. Their framework is recommended to model the innovative configurations of the resources. Furthermore, most banking experts are familiar with the canvas model, as the concept has been commercialized during recent years in books, workshops, and training courses in the industry. Therefore, it better fitted the current study's requirements, and it was more convenient to express the code classification framework through the nine building blocks suggested by Osterwalder and Pigneur (2003). Hence we selected the directed codes as 1) key partners, 2) key resources, 3) key activities, 4) value proposition, 5) customer relationship, 6) customer segment, 7) cost structure, 8) revenue, and 9) channels.

3.2.2. Deductive and inductive analysis

In the next stage, we explored the contextual data of 50 banking business model cases and coded the instances with a microfoundation connotation. We consider microfoundations as the key ingredients of the business model. While coding, we associated the explored new codes with the

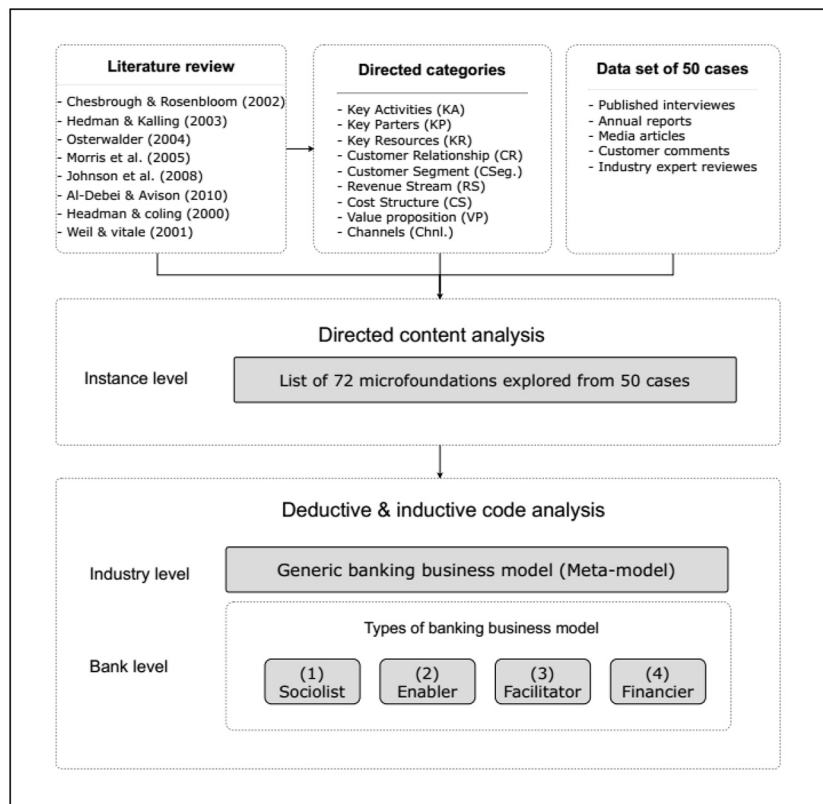


Fig. 1. Research method of content analysis, deductive and inductive approach.

predefined nine directed codes. This form of directed coding, including defining the selective categories, providing an operational definition for them, and coding each category, shaped the initial coding scheme and the meaningful network of codes known as the “deductive category application”. Deductive category application helped us connect the prior formulated, theoretical aspects of the business model concept with the contextual data.

After several rounds of cleansing, merging, grouping, and analyzing the codes through an inductive coding approach, a meaningful configuration of 72 codes emerged as microfoundations. The results formed a coherent model of value creation specific to banking at the industry level. We called the emergent model “Generic Banking Business Model”. The list of the codes is presented in Appendix C - Table C1.

To answer the question, “what is a banking business model?” we propose an abstract definition of the banking business model, like what Magretta (2002) and Timmers (1998) discussed at the concept level for the business model. In the business model literature, back into the initial attempts to define the business model concept, this approach has been used by many, such as Chesbrough and Rosenbloom (2000), Hamel (2000), Linder and Cantrell (2000), and Osterwalder and Pigneur (2003), to describe what a business model is. We used the same method to discuss the banking business model by proposing a generic meta-model and its microfoundations.

In fact, by discarding the textual data, we moved from case-level analysis (a single phenomenon) to study the abstract phenomenon level. This inductive approach was able to answer the “how?” and “why?” questions of the research (Yin, 2013) and build a heterogeneous perception of phenomena and the text. The result was discovering the hidden patterns amongst commonalities between codes (microfoundations) and studied cases. An example of the explained method of categorizing instances under each microfoundation is presented in Appendix D - Table D1.

Combining deductive and inductive approaches allows the qualitative method to impartially explore the experienced reality of separate phenomena in various cases at a more abstract level (Kaplan & Maxwell, 2005).

Further analysis led us towards exploring the four types of banking business models. In general, banks can perform conventional banking based on the 72 microfoundations listed in the generic banking business model shown in Table 1. However, the strategic orientation of the bank leads a bank to initiate various business models. Technically, at the bank level, variation in the business model types is created by developing different configurations using the microfoundations of the generic model. The details of the analysis and findings are presented in Section 4 and related subsections.

We summarized the research design in Fig. 1. It provides a step-by-step understanding of the methods implemented and the results achieved in the study. We used Atlas ti software version 8 to create and manage a coherent database of documents and manage coding in the content analysis process.

4. Findings and discussion

This section presents our findings, including the generic banking business model (meta-model), its microfoundations, and four banking business model types.

4.1. Generic banking business model (Meta-model)

This section intends to define the generic banking business model using its microfoundations at an abstract level. We answer the research question “what is a banking business model?” based on the configuration of microfoundations collected intuitively (deductive-inductive) and emerged during the coding process. We categorized and presented the explored microfoundations under the nine directing codes to present a generic banking business model at the industry level. The output of this stage is presented in Table 1. Moreover, the details about the microfoundations, including operational definitions, are available in Appendix C – Table C1. Finally, we describe the nine major components of a generic banking business model in the following sections.

Table 1
The list of microfoundations of the generic banking business model (meta-model) at the Industry level.

Directing codes	Microfoundations
Key Partners MF number = 11;	KP.IT infrastructure partners; KP.Marketing and publicity partners; KP.Investment partners (funds, stock markets); KP.Segment specific partners; KP.Banks, industry associations, and networks; KP.Government institutions; KP.Legal assistance partners; KP.NGOs, Non-profit associations, foundations; KP.Rewards and healthy decision-making partners; KP.Innovation partners; KP. Fintech partners
Key Activities MF number = 7;	KA.Application development; KA.Loan management; KA. Fund management; KA.Banking business management; KA.Transaction and reconciliation management; KA. Off-balance-sheet activities management; KA.Risk management
Value Proposition MF number = 11;	VP.Innovative finance and insurance; VP.Banking products and services; VP.Traditional banking products; VP.Innovative IT-based value proposition; VP.Personal life assistance; VP.Startup business facilitation; VP.Advise and consultancy based VP; VP.Access to new customers; VP. Physical infrastructure-based VP; VP.Segment specific integral value; VP.Inter-bank loans, wholesale
Customer Relationship MF number = 4;	CR.Automated relationship with customers; CR.Personal relationship; CR.knowledge-based relationship; CR. Multilingual
Customer Segments MF number = 19;	CSeg.Families want to protect themselves from unforeseen circumstances; CSeg.Customers searching for attractive investment solutions; CSeg.IT savvy individuals; CSeg. Business owners and CEOs; CSeg.Individuals searching for flexible special payment tools; CSeg.Fintech startups; CSeg.Corporations required tailor-made solutions; CSeg. Informal business owners; CSeg.Car buyers and owners; CSeg.Entrepreneurs; CSeg.First-time property buyers with a low deposit available; Seg.Foreigners living abroad, who have international as well as national transactions; CSeg. Freelancers and self-employed; CSeg.Frequent travellers by train - commuters and non-customers; CSeg.Individual account holders who want to improve their financial decision-making; CSeg.Individuals who want to take a long holiday or travel abroad (no annual holiday); CSeg. NGOs, Non-profit associations, foundations; CSeg.other banks; CSeg.Students
Key Resources MF number = 7;	KR.Expert human resource; KR.IT Infrastructure; KR. Office and infrastructure; KR.Innovative IT know-how; KR.Mature processes; DKR.Industry experts; DKR.IT expert human resource
Channels MF number = 7;	Chn.Website; Chn.Publicity and social media communication; Chn.Branches; Chn.Mobile application; Chn.Events; Chn.Information sessions; Chn.Chatbot
Cost Structure MF number = 4;	CS.Payroll - expert human resource; CS.IT infrastructure costs; CS.Marketing and publicity costs; CS.Office and equipment costs
Revenue Streams MF number = 2;	RS.Non-interest-based revenue; RS.Interest-based revenue

4.1.1. Key partners

The necessary microfoundations that can be used as key partners in a bank's business model are listed in Table 1. In total, we identified 11 microfoundations for the key partners. Banks need to work with other economic sectors and businesses, such as technology vendors, government agencies, investment partners, advertising and marketing agencies, or even partner with other competitors (i.e., shaping a syndicate to enter larger deals), to propose their core value. For instance, the Royal Bank of Scotland introduces HooYu as their security partner. They use a key partner to confirm the customers' identity.

“When you're opening an account with us, we have to confirm your identity to make sure we're opening the account for the right person. We do this through our security partner HooYu. This way, we can check you are you while keeping your details completely safe and secure” (Natwest, 2019).

Technology vendors may have once enabled banks to provide emerging technologies to create distinctive value, but what we mean here are companies that allow the bank to buy minimum off-the-shelf technologies. For example, they provide data centre services, hosting, dedicated bandwidth for branch communications, etc. Government agencies, investment partners, advertising and marketing agencies provide the basis for a bank to offer its conventional activities. The bank's partnership with other entities is inevitable. However, how to configure suitable key partners into the bank's business model depends on the nature of the business model. This way, the bank can ensure that the proposed value will be generated as designed in the business model. Moreover, it is important to have a flexible, efficient, and adaptable process to connect to the key partners. Banks work with key partners in a way that creates synergies, and they can take advantage of each other's capabilities, resources, and activities.

Lloyds write about collaboration with Fintech companies: *“These engagements typically take the form of a Proof of Concept (PoC) to establish the use case and value which can be delivered to our customers. The PoC approach is a proven method of on-boarding Fintech and insurtech quickly and efficiently, enabling us to innovate at a pace. We will work with you to determine if an engagement is considered a PoC” (Lloyds banking group, 2021).*

4.1.2. Key activities

Key activities in a bank's business model represent the core of a bank's operations. Key activities play a critical role in creating a unique value proposition, marketing, and offering it. Our findings indicate that seven key activities presented in Table 1, in the key activities section, are the common microfoundations in most of the cases that we study. Our findings indicate that key activities of a generic business model of a bank should include loan management, fund management, banking business management, transaction and reconciliation management, off-balance-sheet activities management, risk management, and application development.

However, banks would like to claim a various range of activities that can support their customers most. For instance, in Societe Generale, with respect to supporting the personal projects of customers, they point out some of these key activities stating that *“Whatever your project, we probably have the right solution”*. Moreover, they claim that Societe Generale private banking specialists can handle the most complex requests, relying on Societe Generale's retail banking and corporate & investment banking teams' expertise (Societe Generale, 2019, 2020).

4.1.3. Value proposition

A bank creates value based on innovative finance and insurance, banking products and services, traditional banking products, innovative IT-based value proposition, personal life assistance, startup business facilitation, advise and consultancy, access to new customers, physical infrastructure-based value proposition, segment specific integral value proposition, inter-bank loans, and wholesale banking. The value proposition is always a place to trade-off for a bank to provide maximum or niche coverage to the audience's needs. The 11 codes that emerged under the value proposition are presented in Table 1.

Bank of America delivers responsible growth through eight lines of businesses: *“Through our eight lines of businesses, we focus on helping individuals navigate every stage of their financial lives, working with large and small companies to drive the economy forward, and providing insights, ideas and award-winning research for institutional investors” (Bankofamerica, 2021).*

4.1.4. Customer relationships

This study shows that banks maintain their relationship with customers in four ways. Most banks have communication processes through automated relationships with customers, personal relationships, knowledge-based relationships, and multilingual relationships. To convey the proposed value of a business model to the banks' segmented customers, a bank must

effectively configure the required microfoundations under customer relationships in their business model. Our findings indicate that conventional banking business models prefer personal relationships, and more innovative business models choose automated or knowledge-based relationships. For instance, in the KBC Belgium case, they report taking the experience of their customers to a higher level, “*We continue to invest in our digital applications and our traditional brick-and-mortar bank branches and insurance agencies. With artificial intelligence and data analysis support, we can work solution-driven to make life easier for our customers proactively.*” The customers can use their personal, fully digital assistant customer relationship service called “Kate”. By rolling out Kate, KBC is taking “...*a giant step forward in the service it provides to its customers, thereby making their life easier becomes the leitmotiv.*”

4.1.5. Customer segments

A variety of 19 codes reported in Table 1 shows that banks have been very creative in choosing their customer segments. The high diversity of different customer segments prevented observing a unique and bold theme amongst the codes. Therefore, instead of reporting the variation of segments, we decided to report meaningful groups of codes representing a segment of customers. Groups of codes emerged during secondary code analysis during content analysis. For example, all customer segments whose requirements were to obtain a loan are listed as loan seekers, customers looking for a secure investment solution, or customers looking for transaction management tools. Therefore, under the customer segment, we deal with three main categories of microfoundations, loan-seekers, investment-solution-seekers, and transaction management seekers.

4.1.6. Key resources

Banks, like any other business, need resources to create value. We identified seven types of microfoundations that can be used as key resources in the banking industry, as shown in Table 1. The seven key microfoundations include expert human resources, IT infrastructure, office and infrastructure, skilled people with innovative IT know-how, mature processes, industry experts, and IT expert human resources. Although monetary resources are one of the most important business resources for banks, it was observed that almost no banks refer directly to monetary resources as an obvious key resource, which could be taken for granted. Instead, monetary resources and related issues have been discussed in the bank reports when banks talk about the inflow or outflow challenges of deposit funds.

The case of Deniz Bank indicates how the banking industry is appreciating expert IT resources. In a highly competitive market, they offer a better customer experience by mingling high technology data science and banking with the support of their professional IT team members. A professional IT team is considered a valuable key resource in the banking industry.

Turkey's Deniz Bank president introduces the bank as: “*We have actualized the data science training programme at our bank with the purpose of offer our customers the right products and services at the right time and reach more efficient results. Within the scope of this project, which is a first in the sector in terms of the size of the team and the contents of the program, our colleagues with a profession in both banking and data science will create synergy with all our business lines to build better customer experience*” (Denizbank, 2020).

4.1.7. Channels

Channel is a conduit to transfer the bank's product and service to the targeted customer segments (Hanafizadeh & Yarmohammadi, 2016). We explored seven key microfoundations of website, publicity & social media communication, branch, mobile application, event, information session, and chatbot as different value delivery channels in a bank. A bank may configure a suitable combination of the microfoundations of a channel to serve its customers effectively. Therefore, channel fitness with the target customer segment is crucial in business model design at the bank level. Our exploration amongst the 50 cases shows that today's innovative banking

business models are highly dependent on IT-based channels such as mobile applications, chatbots, websites, and social media banking. As an example of a channel configuration, Standard Chartered Bank initiated a customer care model through social media at a global scale.

Standard Chartered Bank, in its “*Stakeholder Engagement and Material Concerns Report*”, states: “*Customer care on social media: in 2019 we analyzed the countries' social media customer care models and best practices, and we have designed a global 'best practice' model to provide the best customer care on social media to be implemented globally.*” (Santander, 2019).

4.1.8. Cost structure

As presented in Table 1, banks deal with four microfoundations in their cost structure, namely cost of payroll of expert human resources, infrastructure, marketing and publicity, and office and equipment costs. Banks include most of the cost components of the operation cost without specifically linking to a certain business model or microfoundation. To have a feasible business model, banks have to analyze the cost of each microfoundation to be included or excluded from the model. Especially this becomes more important when banks want to deviate from conventional banking towards more innovative business models.

We realized that the cost of implementing a business model or an innovative initiative is considered a lagging factor in banking. Cost is inevitably imposed on the business model following managerial decisions to implement a business model, expecting to cover the cost through the overall revenue stream. For example, most of the cases including Société Générale bank use the term “operation expense” in their annual report for total administrative expenses, equipment, salaries, and wages, stating that “*The term cost also refers to operating costs. The cost/income rate is stated in the bank registration document.*”

4.1.9. Revenue streams

The two non-interest-based revenue and interest-based revenue codes show that banks benefit from two revenue streams, as shown in Table 1. Conventional banking is mostly earning through interest-based revenue. However, in more than 50% of the cases, both codes emerged. Therefore, most banks have a mixed revenue model. In the generic banking business model, we can include both microfoundations. Banks may configure a unique business model at the firm level that may work only with either one. During our exploration, a few banks, such as Intesa Sanpaolo (Italy) with the business model called “For Funding” listed in Appendix A - Table A1 and Barclaycard (United Kingdom) with the “Grab + Go” model listed in Appendix B - Table B1, claimed to operate based on non-interest-based revenues only.

4.2. Typology of banking business models

We have kept the text aside during our final round of the coding phase and worked only on the emerged codes. After carefully analyzing the emerged codes, concepts behind the codes, code categories, code networks, and relations between them, four main leading concepts emerged. We identified and nominated them as banking business model types. The four banking business model types are (1) Socialist, (2) Enabler, (3) Facilitator, and (4) Financier. Moreover, we decided to compare the generic banking business model with the four types in Table 2, where we intersect the models and the nine business model elements. Each column represents a business model type and the unique configuration of its microfoundations. The key microfoundations of each model are mentioned inside the cells.

We believe banks can orchestrate and implement variants of business models by a possible configuration of the microfoundations listed in the generic banking business model column. As shown in Table 2, any of the four types, i.e., socialist, enabler, etc., are creative variants shaped based on microfoundations in the generic banking business model. Configurations of the microfoundations must be designed thoughtfully based on the inclusion or exclusion of each microfoundation towards achieving the

Table 2
Microfoundations of banking business model types – comparison with generic banking business model (meta-model).

Business model elements	(1) Socialist	(2) Enabler	(3) Facilitator	(4) Financier	(5) Generic banking business model
Key Partners	KP.Government institutions; P. NGOs, Non-profit associations, foundations	KP.Fintech partners; KP. Innovation partners; KP. IT infrastructure Partners; KP.Segment specific partners	KP.Banks, industry associations & networks; KP.Government institutions; KP.Legal assistance partners; KP.Rewards and healthy decision-making partners	KP.Banks, industry associations, and networks; KP.Investment partners (funds, stock markets); KP.Rewards and healthy decision-making partners	KP.IT infrastructure partners; KP.Marketing and publicity partners; KP.Investment partners (funds, stock markets); KP. Segment specific partners; KP.Banks, industry associations, and networks; KP. Government institutions; KP.Legal assistance partners; KP.NGOs, Non-profit associations, foundations; KP.Rewards and healthy decision-making partners; KP. Innovation partners; KP.Fintech partners
Key Activities	KA.Administration; KA.Customer service; KA. Marketing	KA.Application development KA.Business development	KA.Sales; KA.Relationship management; KA.Customer service	KA.Sales; KA.Marketing; KA. Account management	KA.Application Development; KA.Loan management; KA.Fund management; KA. Banking business management; KA. Transaction and reconciliation management; KA.Off-balance-sheet activities management; KA.Risk management
Value Proposition	VP.Social segments empowerment	VP.Business enabler	VP.Daily life facilitator (individual/business)	VP.Leverage investment	VP.Innovative finance and insurance; VP. Banking products and services; VP. Traditional banking products; VP. Innovative IT-based value proposition; VP. Personal life assistance; VP.Startup business facilitation; VP.Advise and consultancy based VP; VP.Access to new customers; VP. Physical infrastructure based VP; VP. Segment specific integral value; VP. Inter-bank loans, wholesale
Customer Relationship	CR.Personal relationship	CR.knowledge based relationship; CR.B2B relations	CR.Automated relationship with customers; CR.Multilingual channels	CR.Personal relationship; CR.B2B corporate relationship	CR.Automated relationship with customers; CR.Personal relationship; CR.knowledge based relationship; CR.Multilingual
Customer Segment	CSeg.Support seekers	CSeg.Business owners and CEOs CSeg.Fintech-startups	CSeg.Innovative segment seeker	CSeg.Loan seekers (Retail/wholesale)	CSeg.group.loan-seekers; CSeg.group. investment-solution-seekers; CSeg.group. transaction management seekers*
Key Resources	KR.Expert human resource; KR. Mature processes; KR.Office and infrastructure	KR.IT infrastructure; KR.Mature processes; KR.Innovative IT knowhow	KR.Office and infrastructure; KR. Innovative IT knowhow; KR.IT infrastructure	KR.Financial resources; KR.Office and infrastructure; KR.Mature processes	KR.Expert human resource; KR.IT infrastructure; KR.Office and infrastructure; KR.Innovative IT know-how; KR.Mature processes; DKR.Industry experts; DKR.IT expert human resource
Channel	Chn.Publicity Chn.Events	Chn.Information sessions Chn.B2B2B relations	Chn.Website Chn.Mobile application	Chn.Branches Chn.Relationship managers	Chn.Website; Chn.Publicity and social media communication; Chn.Branches; Chn. Mobile application; Chn.Events; Chn. Information sessions; Chn.Chatbot
Cost Structure	CS.Publicity	CS.IT infrastructure; CS. Implementation	CS.IT infrastructure	CS.Cost of tangible resources; CS. Time value of money	CS.Payroll-expert human resource; CS.IT infrastructure costs; CS.Marketing and publicity costs; CS.Office and equipment costs
Revenue Stream	Indirect income; Non-interest-based revenue	Indirect income; Non-interest-based revenue	Non-interest-based revenue Interest-based revenue	Interest-based revenue	RS.Non-interest based revenue; RS. Interest-based revenue

* Members of the code-groups reported here are 19 microfoundations in total already reported in Table1 under the customer segment of the generic banking business model.

theoretical value proposition. By theoretical, it is meant that every business model must be influenced by a certain mindset, thought, or a conceptual blueprint.

This study identified four types of unique business models, which are different from conventional banking. However, we believe there could be more types that require further research to explore and report. Below we describe four types of banking business models.

4.2.1. Type 1 - socialist business model

The Socialist business model upholds the value of having responsible behaviour towards society and equal distribution of wealth as a purposeful banking practice. It should not be considered social networking banking or deducted to be a channel of value delivery, as discussed by Bohlín, Shaikh, and Hanafizadeh (2018). The relentless development of capitalism today has led banks to focus only on income models. As illustrated in Fig. 2., the focus of socialist banking business models is value creation for customers

who are “support seekers”. The community-oriented model's main purpose is to empower the focused customer segment, and the model does not seek to generate a direct revenue stream.

An example of a socialist banking business model is the microfinance model, the experience which is available for years in different geographies (Banerjee, Duflo, Glennerster, & Kinnan, 2015). However, in some cases, due to the banks' profitability and the emphasis on the direct income model, it did not have the necessary efficiency. Instead of working to benefit “support seekers”, they worked to their detriment (D’Espallier, Goedecke, Hudon, & Mersland, 2017).

The socialist model is based on microfoundations such as Government institutions, NGOs, and Non-profit associations as key partners. Moreover, customer segmenting targets “support seeker”. As illustrated in Fig. 2, the revenue model has been configured to receive tax exemption and economic value instead of receiving interest-based revenue from the customers. Hence, we witness a business model which uses its conventional

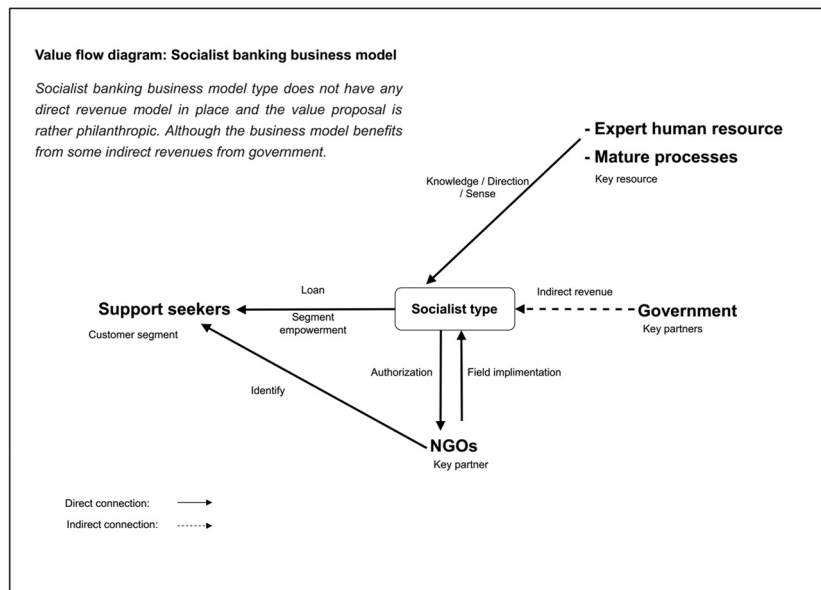


Fig. 2. Example of a value flow diagram of socialist business models type.

communication channels, targets a unique segment, and innovatively realizes its revenue model through its key partners.

Below is a brief example of a crowdfunding case that we explored with case code MBC5 listed in Appendix A - Table A1 called “For Funding” as a working instance of a socialist banking business model.

For Funding is a crowdfunding platform started by Intesa Sanpaolo, which facilitates NGOs, non-profit associations, and foundations by a community of donors. “Projects should meet some predefined conditions, and the platform pays special attention to transparency. It does not seem to have any revenue model in place, and the initiative is in that sense rather philanthropic. However, that bank might benefit from some tax deductions rather than economic income. The emphasis seems to be placed on the social and environmental impact that might be achieved by participating projects and organizations” (Case of MBC5, Appendix A – Table A1).

Wherever a bank can identify a bridgeable social concern, a financial institute can play a role, and a socialist banking business model may emerge. This business model type is formed based on the opportunities that emerge by observing social problems in society. Thus, banks must work with social activists, specialized associations, non-governmental organizations (NGOs) to run the business model. To identify social opportunities, specialized human resources are needed, an important microfoundation of key resources. Social professionals and managers who have the will to engage in social activities are essential. Related infrastructures such as social departments, expert teams, and embedded processes are also essential. The bank must have specific processes for identifying an opportunity and acting on it.

Banks can work with a variety of organizations to enter the social field. Key partners that can form constructive partnerships for social operations include all kinds of professional associations, non-governmental organizations, and even the government in some cases. Different types of empowerment projects pursued in various government departments can help the bank's main partner implement a socialist business model. For instance, key partners may include any specialized associations for protecting the environment, associations of certain diseases, NGOs active in social concerns related to health, addiction, poverty, women, children, people with special needs, ethnic groups, racial groups, religious groups, marginalized groups, etc.

There are various mechanisms to realize the revenue model of the socialist business model. Conventional revenues such as interest fees and

transaction fees are not applicable. Hence, tax exemptions or subsidies from the government seem more feasible revenue generation streams as indirect income models.

4.2.2. Type 2 - enabler business model

We called the second type of banking business model “enabler”. Enabler business model aims to empower small, medium, and large businesses by maintaining an innovative relationship between the bank and the business. The main value proposition of the enabler business model is to offer and enable businesses through banking capabilities. It can range from personalizing a banking IT service to starting an independent business based on API banking.

In this model, the key partners of this bank are Fintech partners, innovation partners, IT Infrastructure partners, and segment-specific partners. A bank contributes to the partnership through its banking capabilities. The outcome is an innovative business solution, a service with a unique value that the business partner delivers to its customers. In Fig. 3, we illustrated how the customer segment is benefited from the business and bank partnership.

There are countless examples of diversified opportunities for integrating banking services with other business services that fit into the enabler business model type. For instance, an IT company providing a payroll management system to its clients may enter into a partnership with a bank through an enabler business model. Here, the bank can integrate its core banking with the payroll management system to enable clients to instruct the bank directly from the payroll management software to pay the salaries every month. API banking can easily fulfil this requirement if the bank can implement it through its software partners or in-house software developers. This integration can simplify the tasks of third-party clients dealing with different banks to pay the salaries every month. Meanwhile, the bank will benefit from inviting all the third-party clients of the software company to open an account and deposit funds in the bank.

In this business model type, the key resources that a bank requires include IT infrastructure, mature processes, and innovative IT know-how. To implement an integration plan with a business, the bank needs advanced IT infrastructure, an expert team or partner to develop a tailored integration solution, and creative IT knowledge to turn the idea into a product or service. Moreover, the bank's core processes must be flexible enough to adapt to the external business procedures, which requires mature and well-established banking processes to fulfil the new requirements through the new integration.

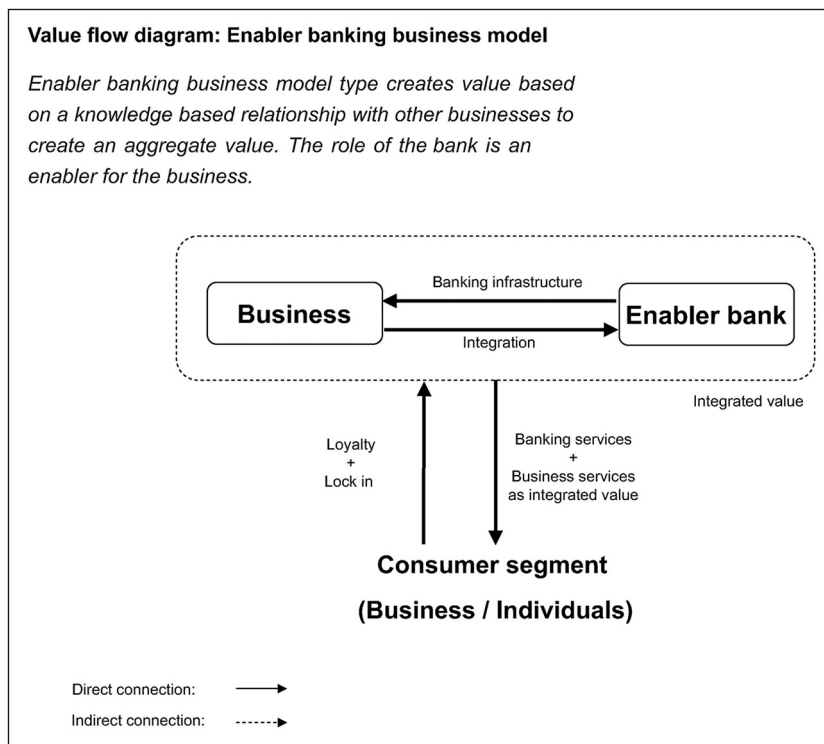


Fig. 3. Value flow diagram of enabler business model type.

Bank enters into a partnership network with key partners such as FinTech companies, innovation partners, and partners operating in a specific industry to propose a competitive value and benefit from their potentials. Meanwhile, the bank shares its capabilities, such as access to a centralized banking system, API banking, and core banking system, to enable the external business to deliver value at a higher level. The two-way collaboration creates a unique value proposition opportunity for both entities through the enabler banking business model.

The major customers of this business model type can be business owners, CEOs of large companies, guilds and their representatives, startups, and freelancers who have a high ability to direct and empower. The type of communication here is B to B to B, meaning that the bank, as a firm, cooperates with another firm to integrate with the bank, which in turn has corporate clients. To establish such a highly complex partnership, the relationship between the bank and customers is a knowledge-based relation. The communication channel is often based on highly complex face-to-face technical meetings. In this type, the bank does not seek to generate a direct revenue stream, rather targets other indirect income types.

For example, case number MBC27 listed in Appendix A – Table A1 is about ING Group that has developed an investment program specifically for successful startups to access fintech innovation. Together with its investment partners, this group strengthens startups, and some of these innovations can be applied later in the bank's activities. The program does not generate direct revenue streams, but participation in these startups will eventually lead to revenue or access to important innovations in the industry.

4.2.3. Type 3 – facilitator business model

Customers expect services and products from the banks that can facilitate their daily life. Ross and Srinivas (2019), in a study conducted by the Deloitte Institute, surveyed more than 17,000 banking service users in 17 countries to find out why they are loyal to their favourite bank, amongst other variables. The most highlighted answer is fulfilling the expectations

in terms of monetary facilities. A facilitator business model type's main activity in the bank often revolves around monitoring the audience's needs and designing banking services tailored to them. The main concern of banks in this model is the sale of these services and customer satisfaction.

The unique value that the facilitator model proposes is the appropriate response to “pain” in the daily lives of individuals and businesses to make it easier. Banks need IT infrastructure, innovative IT knowledge, and mature processes to run a facilitator business model. It should be noted that because customer satisfaction is of particular importance in this model, service facilitation is important. For example, imagine a bank that requires a one-week time to issue a gift card for a customer who wants it on the same day. In other words, the bank is supposed to speed things up.

In contrast, a facilitator bank can send the gift card to the customer's address after requesting it online. Even more innovative, a bank can send digital gift card credentials through email immediately after the bank has received the request. Such services require a very well-configured facilitator business model.

For example, in case number MBC32 listed in Appendix A – Table A1, Deutsche Bank issued a Spanish debit card to foreigners in Spain, giving them more confidence while living abroad. This debit card offers various services, including a special service package for legal aid, telephone medical advice, and personal injury insurance. Customers benefit from the advice in their language.

The facilitator business model works with innovation partners, various industries, government, legal assistants, insurance consultants, etc., as key partners to innovate or meet their needs. These partnerships allow facilitator banks to go beyond banking services and provide various insurance, legal, investment, and wealth management services to their clients. Fig. 4 illustrates the value flow diagram of the facilitator business model type.

We realized that this model could form around different customer segments and a diverse range of needs. Customers always are looking for innovative services and solutions to meet their needs. The customer segment for the facilitator business model is mostly the seekers of innovative services.

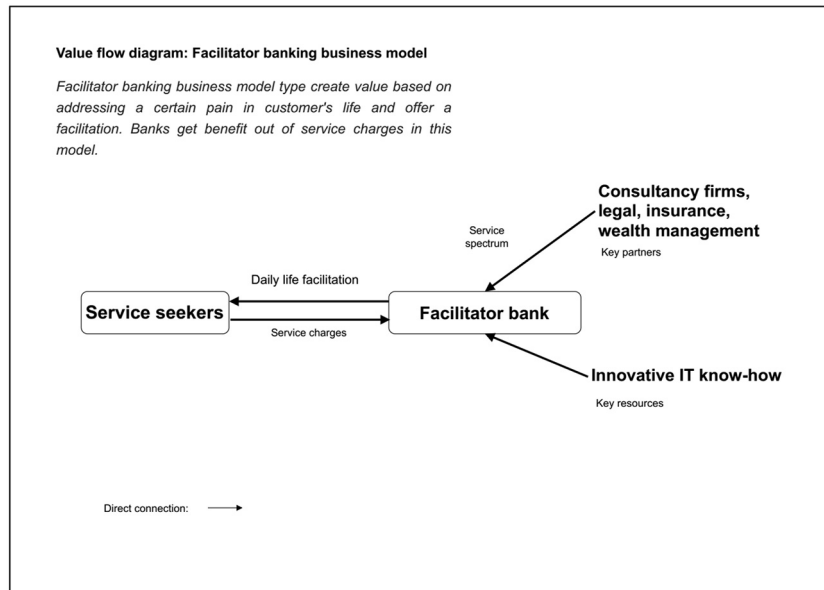


Fig. 4. Value flow diagram of facilitator business models type.

Therefore, banks that implement the facilitator business model are innovatively looking for segments of customers that have a specific need or “pain”. The banks can respond to any existing or forecasted needs of customers as an opportunity to propose a unique value.

Most of the customer relationship in this business model is with the individuals; however, in some cases, a B2B relation is possible. In this model, the communication channels are diverse and multidimensional to the range of customers. It includes various websites and mobile applications to chat, robots, email, face-to-face visits to branches, and even the telephone. This

model needs a suitable infrastructure to communicate with different spectrums of audiences, so innovative channels such as multilingual channels are part of the creative dimensions of this model's configuration.

The key activity of the facilitator model is dedicated to customer service. It uses business partners with specialities to provide legal advice or provide motivational and supportive programs to satisfy customers. Suppose tourists in a country have limitations or restrictions on carrying a certain currency. A facilitator business model recognizing this need can meet the tourists' needs by providing appropriate payment tools

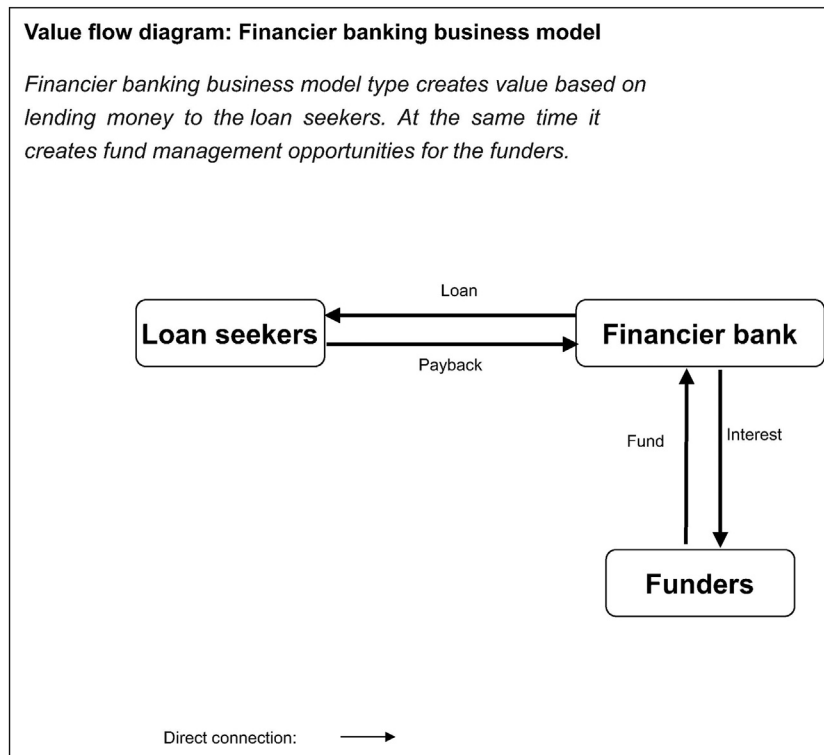


Fig. 5. Value flow diagram of financier business models type.

aligned with the country's laws and regulations. It is logical that the bank also has an income stream from providing the mentioned service as a transaction fee. Therefore, the revenue stream in this model is indirect. The services provided contribute to the bank's income by using a lock-in mechanism to take advantage of certain privileges. In this case, the major costs are those associated with the IT infrastructure. Still, innovation costs, implementation costs, and advertising costs are part of this model's main cost structure.

4.2.4. Type 4 – financier business model

The financier business model is the same as the conventional banking business model concerned with the loan and fund allocation. This model has been the subject of various studies with an economics approach for many years. Here, banks engage in routine activities such as selling services and products, marketing, and managing customer accounts. Investment banks, wholesalers, retailers, and financing banks fall into the same business model type (Ayadi, 2019).

Important resources for this banking business model are tangible monetary resources and the existence of loan applicants. Tangible resources are of special importance, and banks make every effort to gather funds. In all three previous models, intangible resources such as knowledge, skills, human resources, and innovation were the banking business's driving force. Through their business partners, banks find investors who can be individuals or institutions. On the other hand, they create value by lending their loan-seeking audiences. The main types of partners that can provide resources for this banking model are industries, other banks, guilds, investment networks, and the stock market.

As presented in Fig. 5, the main customers of these banks, i.e., the seekers of various micro and macro loans, can be individuals, businesses, and various sectors of industry and guilds. That is why there is a different set of customer relationships in this type of banking. Most people have a personal relationship with the bank, while businesses have a business-to-business relationship. Businesses need more specialized communication channels; for example, by account managers, or relationship managers (RM), banks assist their customers.

Since the most important resource is the deposit funds in this model, the main activity is lending money; hence, the most important income source is interest-based income. This type of banking, unlike previous types, is a completely interest-based model, and its value creation is also realized based on the availability of funds and loans. With the accumulation of customer deposits, financial resources become available to circulate and create economic turnaround and value. The bank's highest cost will be the time value of money and regular branch and head office operations.

5. Conclusion

The goal of this study was to explain the position of the business model concept in banking. For this purpose, we selected 50 different types of banks that create value in various ways. Then, we studied the contents of reports, documents, and banks' websites using content analysis. After completing the coding steps, we were able to identify the microfoundations that act as constituent units in the business model of banks. We developed a cognitive framework for the banking business model by identifying 72 microfoundations representing a bank's business. Therefore, we were able to define the business model concept in banking using its microfoundations on an abstract level.

To answer the first research question, "what is a banking business model?" we developed a generic model as the banking industry's business model by studying the commonalities between microfoundations and finding repetitive patterns to understand a fit configuration using microfoundations in the banking industry. The model emerged intuitively (deductive-inductive) during the coding process. The model consists of microfoundations presented under the nine leading components of the business model. We reported our contribution at this stage as the banking industry's generic banking business model (Meta-model).

In response to the second research question, "what are the banking business model types?" we identified four types of the unique configurations of microfoundations in the form of different business model types. We identified and reported (1) Socialist, (2) Enabler, (3) Facilitator, and (4) Financier business models. As per the strategic orientation or competitive manoeuvres, a bank can pick four business models and implement them. However, we believe more types of business models could be developed, but it requires further research to explore and report them.

By socialist banking business models, we refer to the banks whose strategic focus is on business models aiming at responsible behaviour towards society and equal distribution of wealth. Therefore, we argued that becoming a socially purposeful bank is achievable by implementing a socialist banking business model.

Enabler banking business model deals with the empowerment of many other businesses and sectors. The enabler business model creates value for businesses by providing banking capabilities. For instance, the cases may range from a tailor-made banking IT service to starting an independent business using API banking. The objective of the enabler banking business model is to help other business sectors run, enhance, deliver innovative values, or expand.

In the facilitator business model type, a bank has a solution for a difficulty or requirement in the daily lives of individuals and businesses to be solved or met by a bank. Banks need IT infrastructure, particularly innovative IT knowledge, proper needs analysis and understanding of the customers' requirements, and mature banking processes to facilitate. In this business model type, customer satisfaction is a critical success factor.

The financier business model type is the same as the conventional banking business model concerned with the loan and fund allocation. Here, banks engage in routine activities such as selling services and products, marketing, and managing customer accounts. Investment banks, wholesalers, retailers, and financing banks fall into this business model type. Important resources for this business model type are tangible monetary resources and the existence of loan applicants. Monetary deposit funds are of special importance, and banks make every effort to gather more funds. However, in all three previous models, intangible resources such as knowledge, skills, human resources, and innovation are the main driving forces.

The four presented business model types are considered a theoretical ground for further investigations in the banking industry. This study had a limited scope to investigate the business model types. However, studying the role of different capabilities in forming each business model is recommended as a potential research area for future studies.

Researchers are recommended to study the role of different capabilities in forming business model types. For example, studying the role of IT capabilities, dynamic capabilities, regulatory, or deregulation to form each type of business model reported in this article would contribute to the body of knowledge.

From the practical perspective, the four presented business models can be considered a blueprint of shaping banks' intention, orientation, and positioning of their value proposition in society. The current study's findings can contribute to the feasibility studies of establishing new and innovative banks by helping them understand or choose a business model type, design value proposition system, and understand the essential microfoundations required to configure a successful business model. Also, the presented four types of business models help create a new perspective for the banks' current executives and leaders to think out of the box and incorporate a systematic approach towards rethinking their bank's business model.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A

Table A1

List of 50 cases of banking business models.

Case No.	Bank name	Country	Website	Access date	Business model name
MBC1	Denizbank	Turkey	https://www.denizbank.com	2/11/2019	Augmented Agricultural Banking App
MBC2	BBVA	Spain/Global	https://www.bbva.es	27/10/2019	Bonomy
MBC3	Unicredit	Italia	https://www.unicreditgroup.eu	24/10/2019	Buddybank
MBC4	Bank of America	United States	https://bankofamerica.com	27/10/2019	Chatbot Erica
MBC5	Intesa Sanpaolo	Italia	https://www.intesasanpaolo.com/	24/10/2019	For Funding
MBC6	Barclaycard	United Kingdom	https://www.barclaycard.co.uk	26/10/2019	Grab + Go
MBC7	Idea Bank	Poland	https://www.ideabank.pl	28/10/2019	Idea Hub
MBC8	Bradesco	Brazil	https://banco.bradesco/	24/10/2019	MEI Portal
MBC9	mBank	Poland	https://www.mbank.pl	1/11/2019	mPower
MBC10	KBC Bank	Belgium	https://www.kbc.com/en	1/11/2019	My Car
MBC11	Santander	Spain/Global	https://www.santander.com	26/10/2019	Santander Onboarding
MBC12	Discovery	South Africa	https://www.discovery.co.za	26/10/2019	Vitality Money
MBC13	Wells Fargo	Global	https://www.wellsfargo.com/com/ceo/	23/10/2019	Commercial Electronic Office (CEO)
MBC14	BBVA	Spain – Global	https://www.bbva.com	2/11/2019	API Market
MBC15	N26	Germany	https://n26.com	1/11/2019	Business Account/Freelancers
MBC16	Sberbank	Russian Federation	https://www.sberbank.ru	2/11/2019	Tips
MBC17	HSBC	United Kingdom	https://www.hsbc.co.uk/	4/11/2019	95% Mortgage
MBC18	Scotiabank	Canada	https://www.scotiabank.com/	4/11/2019	Select Account for Business
MBC19	HSBC	United Kingdom	https://www.hsbc.co.uk/	4/11/2019	Gadget Insurance
MBC20	BNP Paribas	Belgium	https://www.bnpparibasfortis.be/	4/11/2019	Family Insurance
MBC21	Deutsche Bank	Germany	https://www.deutschebank.be	5/11/2019	DB Investment Plan
MBC22	Société Generale	France	https://www.privatebanking.societegenerale.com	5/11/2019	Dedicated Funds or Family Funds
MBC23	Société Generale	France	https://www.privatebanking.societegenerale.com	5/11/2019	Global Markets Incubator
MBC24	ING Group	The Netherlands	https://www.ing.nl	5/11/2019	Growing Bigger Account for Children
MBC25	Royal Bank of Scotland	United Kingdom	https://personal.rbs.co.uk/	5/11/2019	Holiday Loan
MBC26	Unicredit	Italy	https://www.ing.nl	5/11/2019	Homestory App
MBC27	ING Group	The Netherlands	https://www.ing.com	5/11/2019	ING Ventures
MBC28	Crédit Agricole	France	https://www.bnpparibasfortis.be/	5/11/2019	Investment credit
MBC29	Lloyds Bank	United Kingdom	https://www.lloydsbank.com	5/11/2019	Large purchase credit card
MBC30	Unicredit	Italy	https://www.unicreditbank.hu	5/11/2019	Mastercard Orange Credit Card
MBC31	BNP Paribas	France	https://www.bnpparibasfortis.be/	5/11/2019	Prepaid Card
MBC32	Deutsche Bank	Germany	https://www.deutsche/bank.es/	5/11/2019	Spain Ready db Card
MBC33	Barclays	United Kingdom	https://www.barclays.co.uk	5/11/2019	Start/up Business Account
MBC34	Royal Bank of Scotland	United Kingdom	https://www.rbs.co.uk/	5/11/2019	Student Bank Account
MBC35	Diversified Retail (Type 1)	Global – Industry level	NA	6/11/2019	Diversified Retail (Type 1) (Ayadi, 2019)
MBC36	Diversified Retail (Type 2)	Global – Industry level	NA	6/11/2019	Diversified Retail (Type 2) (Ayadi, 2019)
MBC37	Focused Retail	Global – Industry level	NA	6/11/2019	Focused Retail (Ayadi, 2019)
MBC38	Investment Bank	Global – Industry level	NA	6/11/2019	Investment Bank (Ayadi, 2019)
MBC39	Wholesale Bank	Global – Industry level	NA	6/11/2019	Wholesale Bank (Ayadi, 2019)
MBC40	Goldman Sachs	United States	https://www.goldmansachs.com/	10/11/2019	Goldman Sachs
MBC41	J.P. Morgan Chase	United States	https://www.chase.com/	10/11/2019	J.P. Morgan Chase
MBC42	Rabobank	The Netherlands	https://www.rabobank.com/	6/11/2019	Rabobank
MBC43	United Savings Bank	United States	https://www.unitedsavingsbank.com/	8/11/2019	United Savings Bank
MBC44	Goldman Sachs	United States	https://www.goldmansachs.com/	10/11/2019	Goldman Sachs
MBC45	HDFC Life	India	https://www.hdfclife.com	13/11/2019	HDFC Life
MBC46	ING Insurance	The Netherlands	https://www.ing.nl/	13/11/2019	ING Insurance
MBC47	National Bank Insurance	United States	https://www.nbc/insurance.ca/	13/11/2019	National Bank Insurance
MBC48	Ridgewood Savings Bank	United States	https://www.ridgewoodbank.com	13/11/2019	Ridgewood Savings Bank
MBC49	Triodos Bank	The Netherlands	https://www.triodos.nl/	13/11/2019	Triodos Bank
MBC50	United Savings Bank	United States	https://www.unitedsavingsbank.com/	8/11/2019	United Savings Bank

Appendix B

Table B1

Business models with a non-interest-based revenue stream.

Case no.	Business model name	Bank name	Short description
BMC6.	Grab-Go	Barclaycard	Barclaycard has developed an application that allows retail consumers to self-checkout through their phones. Their camera is used to scan the products, the customer then proceeds to online payment. For retailers, this means a cost advantage on the payroll. They need fewer employees to assist customers with their checkout; they can also offer a better customer experience with fewer or no queues.
BMC7.	Idea Hub	Idea Bank	Idea Bank in Poland experienced that many of their individual and business customers travel weekly or daily by train for work, sometimes up to 10 h a week. Its Idea Hub, a coworking space on a train, aims to provide these customers with a space to use these hours for work, decreasing lost time. It's a new value proposition to customers. Furthermore, the bank hopes to attract new customers through the coworking space.
BMC9.	mPower	mBank	mBank from Poland challenges bureaucracy with an online tool that helps entrepreneurs and new business owners to get operational. In Poland, setting up a business usually takes 10–30 days, considering government, banking, and accountancy obligations. The value mPower creates for 90% of new business owners, who can set up their business by themselves in 10 min,

Table B1 (continued)

Case no.	Business model name	Bank name	Short description
BMC13.	CEO Business Model	Wells Fargo	answering six simplified questions in mPower and complying with rules and regulations. Partnering with the government and accountants is important for this business model. Administration fees could lead to direct revenue; however, gaining more customers would be the main advantage for mBank. Wells Fargo's CEO (Commercial Electronic Office) service is a product where CEOs or business owners get control over their business's financial side at their fingertips. Through the CEO portal or the CEO mobile App, they can access (near) real-time financial data about their business for decision making, security, and reporting. The value of this innovation of this business model lies in the (near) real-time access and the level of control the CEO or owner has from their devices, which is pulled from the company's accounts to facilitate the CEO and owner's information and analysis.
BMC22.	Dedicated and Family Funds	Société Generale	In their portfolio of wealth management solutions, Societe Generale offers dedicated and family funds for families who want to join forces and manage their wealth more efficiently together. The funds are tailor-made according to the family members' needs and wish to invest in a profitable and comfortable experience.
BMC24.	Growing Bigger Account for Children	ING Group	ING Group in the Netherlands offers several special accounts for children. The Growing Bigger (Groeï Groter) account provides parents or grandparents with a chance to save their children's future. The child can learn to save but does not have access to the funds until their 18th birthday. Parents might want to save up for studies, property buying, a driver's license, or any other need their child may have in the future.
BMC26.	Homestory App	Unicredit	The Homestory App, as used by Unicredit in Austria, provides digital natives with an almost completely online application and management process for their mortgage. Only for signing the contract, the customers should go to a bank office. The app makes it easy to compare mortgages, manage payment slips, look at the consequences of different payment decisions, etc. This way, the bank aims to adjust its products to the needs of digital natives and make them easier to manage for this generation.
BMC31.	Prepaid Card	BNP Paribas	BNP Paribas in Belgium offers a prepaid card that offers a credit card payment method but does not have a credit with interest attached to it. Customers can load the card and pay internationally and online with their funds. This way, the bank opens to people who can't or don't want to have a credit card because of their age or not complying with any other requirements for a credit card, or people who don't want one. A new market segment the bank is tapping into.
BMC32.	Spain Ready db Card	Deutsche Bank	Deutsche Bank offers a Spain Ready db Card to foreigners in Spain, allowing them to feel more confident while living abroad. This debit card comes with an exclusive service package that includes legal assistance, medical advice by telephone, and personal injury insurance, amongst others. Customers receive assistance in their language from local professionals.
BMC33.	Start-up Business Account	Barclays	Barclays offers an account focused on start-up founders and new business owners. This account is free for the first 12 months, and it also allows account holders to focus on their business through easy and efficient account management online and through a call centre. Furthermore, it offers support through content – guides to find funding or about financial business structures, for example. This way, the bank hopes to attract new business owners and to be able to offer them more services and products later.
BMC45.	HDFC Life (pension plans)	HDFC	HDFC Life offers standardized and tailor-made pension and retirement plans for their retail customers. It aims to provide a value of financial security and stability for their customers, allowing them to save up for retirement and investing (compensating inflation) while in reliable funds. Once their customers retire, they can enjoy a peaceful pension with the same living standard they are used to.
BMC47.	National Bank Insurance	National Bank Insurance	The National Bank Insurance offers insurance in the United States. It focuses on security and the right coverage, providing a value for risk-avoiding individuals and families. Apart from insurance, it also offers pension plans so that its customers can save up for their retirement.

Appendix C

Table C1

Operational definition of the grounded codes (microfoundations) during the coding phase of content analysis.

Business model elements	Microfoundations	Grounded frequency	Communality	Definition
Key Partners MF number = 11;	KP.IT Infrastructure Partners	6	96%	Partners providing IT infrastructure
	KP.Marketing and publicity partners	42	84%	Partners with the capability to contribute with their expertise in marketing, advertisement, and social presence of the business
	KP.Investment partners (funds, stock markets)	9	18%	Partners with the capability to invest financially into the business
	KP.Segment Specific Partners	5	10%	Partners from different segments, such as the automobile industry, insurance, oil and gas, aviation, etc.
	KP.Banks, industry associations, and networks	4	8%	Entities such as banks, industry associations considered as potential partners
	KP.Government institutions	6	6%	A department or body of the government that can enter into a partnership with a Bank
	KP.Legal assistance partners	3	6%	Partners with the capability to contribute with their expertise in legal affairs
	KP.NGOs, Non-profit associations, foundations	3	6%	Partners as Non-Profit Organizations
	KP.Rewards and healthy decision-making partners	3	6%	Partners with the capability to contribute in rewards and healthy decision-making partners
	KP.Innovation partners	2	4%	An external entity, which acts as a partner in which through them customers, suppliers, research institutions, and competitors can be involved in the <i>innovation process</i>
	KP.Fintech Partners	1	2%	Potential partners from companies that use technology to make financial services more efficient
Key Activities MF number = 7;	KA.Application Development	11	18%	The process of creating software applications. It includes user interface design, programming, alpha and beta testing, and deployment.
	KA.Loan management	12	22%	A collection of tasks related to allocation, consumption, and returning of a loan
	KA.Fund management	9	16%	A collection of tasks related to fund allocation in a bank
	KA.Banking business management	11	18%	Empirical set of knowledge dealing with banking business in branches and headquarters
	KA.Transaction and reconciliation management	12	22%	Controlling the transactions between a business and bank account of the business to find and rectify discrepancies

(continued on next page)

Table C1 (continued)

Business model elements	Microfoundations	Grounded frequency	Community	Definition	
Value Proposition MF number = 11;	KA.Off-Balance-sheet activities management	6	6%	Activities and services in the bank that generate income through service fees and not interest on a loan	
	KA.Risk management	7	12%	Tasks related to forecasting, control, transfer of probable damage out of unforeseen or predictable events	
	VP.Innovative Finance and Insurance	16	30%	Innovative out of box thinking leading to finance and insurance products and services	
	VP.Banking products and services	12	24%	Banking products and services, such as credit card, loan, safe box, loan, etc.	
	VP.Traditional banking products	8	16%	Banking products and services which require physical presence and are limited to accepting savings and providing loan	
	VP.Innovative IT-based Value Proposition	14	12%	Innovative out of box thinking leading to innovative IT-based products and services	
	VP.Personal life assistance	8	12%	Assistance to customers in their personal life	
	VP.Startup Business Facilitation	8	12%	Helping startup businesses by facilitating their requirements	
	VP.Advise and consultancy based VP	4	6%	Increasing the awareness level of the customer based on advisory service	
	VP.Access to new customers	2	4%	Expanding the reach to the new segments of customers	
Customer Relationship MF number = 4;	VP.Physical Infrastructure based VP	3	4%	Value proposition based on break and mortar infrastructure such as branches, availability of ATMs, etc.	
	VP.Segment specific integral value	4	4%	The value proposition to certain segments that are specific to the requirements of the segment	
	VP.Inter-bank loans, Wholesale	1	2%	Providing a loan to other banks	
	CR.Automated relationship with customers	44	80%	Includes functions like personalized communications and customer-targeted recommendations based on past activities recorded with software	
	CR.Personal Relationship	9	18%	The kind of relationship between people exemplified by shared understanding, mutual trust, and social bonding	
	CR.knowledge based relationship	3	6%	The development of an ongoing relationship between a bank and its customers based on knowledge sharing between them	
	CR.Multilingual	1	2%	In or using several languages.	
	Customer Segments MF number = 19;	CSeg.Families want to protect themselves from unforeseen circumstances	13	26%	Customer segment that wants protect themselves from unforeseen circumstances that may affect them
		CSeg.Customers searching for attractive investment solutions	6	12%	A segment of people who have money and are searching for an investment opportunity
		CSeg.IT Savy individuals	7	12%	Individuals who have average knowhow about how to operate an IT device, software, or a mobile application
CSeg.Business owners and CEOs		4	8%	A business owner is someone who derives profit or income from a company's operations, whether or not he participates in its management. A CEO is a paid executive manager who guides the day-to-day activities in the company	
CSeg.Individuals searching for Flexible Special Payment Tools		4	8%	A segment of potential customers searching for flexible payment tools	
CSeg.Fintech startups		3	6%	companies that use technology to make financial services more efficient	
CSeg.Corporations required tailor-made solutions		2	4%	Companies with special requirements that are not able to buy the solution off the shelf	
CSeg.Informal business owners		2	4%	A segment of potential customers who don't have government or municipality licenses and registration but are involved in business	
CSeg.Car buyers and owners		1	2%	A segment of people who own a car or are interested in buying a new car	
CSeg.Entrepreneurs		1	2%	A person who directs a company and takes commercial risks	
Key Resources MF number = 7;	CSeg.First-time property buyers with a low deposit available	1	2%	A segment of customers of a bank that are first-time property buyers with low deposit money available with them	
	CSeg.Foreigners are living abroad who have international as well as national transactions.	1	2%	Foreigners living in the country, who have international as well as national transactions	
	CSeg.Freelancers and Self-employed	1	2%	A person who works as a writer, designer, performer, or the like, selling work or services by the hour, day, job, etc., rather than working on a regular salary basis for one employer	
	CSeg.Frequent travelers by train - Commuters and non-customers	1	2%	A segment of potential customers who are frequent travellers by train that mostly are executives	
	CSeg.Individual account holders who want to improve their financial decisionmaking	1	2%	A segment of customers who require a service to improve their financial decision making	
	CSeg.Individuals who want to take a long holiday or travel abroad (no annual holiday)	1	2%	A segment of potential customers who travel for a long time	
	CSeg.NGOs, Non-profit associations, foundations	1	2%	Is an organization traditionally dedicated to furthering a particular social cause or advocating for a shared point of view	
	CSeg.other banks	1	2%	Banks as individual business entities	
	CSeg.Students	1	2%	A potential customer segment who are registered with a school or university for formal educations	
	Channels MF number = 7;	KR.Expert human resource	227	100%	Specialized human resource with a certain range of expertise
KR.IT Infrastructure		29	58%	Hardware, network, and software	
KR.Office and Infrastructure		19	36%	Process maturity is an indication of how close a developing process is to being complete and capable of continual improvement through qualitative measures and feedback	
KR.Innovative IT Know-how		11	22%	Understanding and application of IT in which can lead to innovation	
KR.Mature Processes		11	22%	Processes that have been through continuous evaluation and upgrade till reaching a mature level in the organization	
DKR.Industry experts		2	2%	Human resource who has deep experience in an industry or multiple industries	
DKR.IT Expert Human Resource		1	2%	Human resource with deep experience in IT	
Channels MF number = 7;		Chn.Website	50	100%	A location with a specific address on the Internet that maintains one or more pages on the World Wide Web
		Chn.Publicity & Social media communication	48	92%	The giving out of information about a product, person, or company for advertising or promotional purposes

Table C1 (continued)

Business model elements	Microfoundations	Grounded frequency	Community	Definition
	Chn.Branches	36	72%	The local office of a bank or large business or a local shop that is part of a large chain
	Chn.Mobile Application	12	22%	A program or piece of software designed and written to fulfil a particular purpose of the user on a mobile device (Encyclopedia, 2021)
	Chn.Events	4	6%	A planned public or social occasion.
	Chn.Information sessions	2	4%	Information sessions are a way to ask questions and find out more about the services and products of a bank
	Chn.Chatbot	2	2%	A computer program designed to simulate conversation with human users, especially over the Internet
Cost Structure MF number = 4;	CS.Payroll - Expert Human Resource	55	100%	A payroll expert is primarily responsible for processing payroll and maintaining the employee database regarding salary and pay.
	CS.IT Infrastructure costs	56	98%	Hardware, networking, and physical location costs
	CS.Marketing and publicity costs	46	92%	Cost of advertisement to give out information about a product, person, or company
	CS.Office and equipment costs	45	88%	Cost of purchasing or renting office equipment such as furniture
Revenue Streams MF number = 2;	RS.Non-Interest Based revenue	71	96%	Revenue-based on services charges against delivering services to the customers
	RS.Interest-Based Revenue	3	60%	Revenue-based on the money paid as loans and returned with an extra interest fee

Note: **MF Number** means the number of microfoundations under each element; **Grounded frequency** indicates the number of times that the same microfoundation has been grounded in multiple cases; **Community**: indicates the percentage of the commonality of the Microfoundation between the cases. The higher the percentage, the more the frequency of the commonality of the microfoundations between the cases.

Appendix D

Table D1

Evidences and examples of “Key Partners” in generic meta-model grounded in the studied cases of banking businesses models.

Microfoundations	Case of a bank	Evidence and examples from the case	No. of grounded evidence
KP.Banks, industry associations, and networks	BMC8	8:19 Chambers of commerce	Gr = 4
	BMC13	13:15 Internal partners: Wells Fargo Commercial, Wells Fargo Small Business	
	BMC28	28:17 Solidary economics partners (France Active, Sogama, Development Bank of the European Council)	
KP.Fintech Partners	BMC39	39:17 Banks, industry associations and networks	Gr = 1
	BMC23	23:16 Fintech (knowledge) partners	
KP.Government institutions	BMC8	10:24; 10:23; 9:19; 8:22; 8:18 Government institutions; 8:20 Tax institutions;	Gr = 6
	BMC9		
	BMC10		
KP.Innovation partners	BMC23	27:10; 23:31 Innovation partners	Gr = 2
	BMC27		
KP. Investment partners (funds, stock markets)	BMC23	44:18 Investment partners (funds, stock markets)	Gr = 9
	BMC27	23:15; 27:11 Funding partners	
	BMC35	41:25; 40:18; 35:20; 36:18; 38:23; 39:16;	
	BMC36		
	BMC38 ~ 41		
KP.IT Infrastructure Partners	BMC44		Gr = 63
	Grounded in all the 50 cases	4:20;35:19; 36:17; 37:17; 38:22; 39:15; 40:17; 41:24; 42:16; 43:16; 44:17; 45:15; 46:15;47:17; 48:18; 49:21; 50:19; 5:19; 6:14; 7:14; 8:17; 9:18; 10:22; 34:15; 11:21; 16:19; 17:19; 18:21;19:16; 20:13; 21:14; 22:11; 23:12; 24:13; 25:18; 26:16; 27:9; 28:16; 29:18; 30:16; 31:14; 32:11; 33:14; 12:21; 13:16;14:15;15:16; 3:17 Website, hosting and domain providers; 6:13;33:15; 26:17; 15:18; 15:17; 12:19; 13:17; 16:17; 11:19; 4:18; 3:18 App Store and Google Play 10:26 Blockchain partners	
KP.Legal assistance partners	BMC32	32:12 Legal assistance partners	Gr = 3
	BMC46	46:16; 47:18 Lawyers	
	BMC47		
KP. Marketing and Publicity Agency	All the cases except BMC6, BMC8, BMC13, BMC39,BMC40,BMC49	3:16; 4:19; 5:18; 7:13; 9:17; 10:21; 11:20; 12:20; 14:14; 15:15; 16:18; 17:18; 18:20; 19:15; 20:12; 21:13; 22:10; 23:17; 24:12; 25:17; 26:15; 27:12; 28:15; 29:17; 30:15; 31:13; 32:10; 33:13; 34:14; 35:18; 36:16; 37:16; 38:21; 41:23; 42:15; 43:15; 45:14; 46:14; 47:16; 48:17; 49:20; 50:18; Marketing and Publicity Agency	Gr = 44
	BMC5	5:20 NGOs, Non-profit associations, foundations	
KP.NGOs, Non-profit associations, foundations	BMC42	49:22 CSR and sustainability communities	Gr = 3
	BMC49	42:17 Communities and sponsoring partners	
KP.Rewards and healthy decision-making partners	BMC12	12:22 Rewards and healthy decision-making partners: gyms, airlines, healthy food, etc.	Gr = 3
	BMC23		
KP.Segment Specific Partners	BMC27	27:13; 23:14 Event partners	Gr = 9
	BMC1	7:15 Railways	
	BMC7	10:25; 8:21 Insurance companies	
	BMC8	12:23 Discovery Insurance products	
	BMC10	15:19 Insurtech provider (Clark)	

Note: Numbers under the column “Evidence and examples from the case” indicate the position of the grounded code in the text. For example, 12:22 means the code has been grounded as the 22nd code inside the text belonging to the Business Model Case 12 (BMC12). The list of the bank cases is presented in Appendix A – Table A1.

Appendix E

Table E1
Review of elements in different business model frameworks.

Elements	Chesbrough and Rosenbloom (2000)	Hedman and Kalling (2003)	Osterwalder (2004)	Morris et al. (2005)	Johnson et al. (2008)	Al-Debei and Avison (2010)	Hedman and Kalling (2002)	Weill and Vitale (2001)
Key activities		✓	✓		✓	✓	✓	✓
Key partners		✓	✓	✓	✓	✓	✓	✓
Key resources		✓	✓	✓	✓	✓	✓	✓
Customer relationship		✓	✓	✓	✓	✓	✓	✓
Customer segment	✓	✓	✓	✓		✓	✓	✓
Revenue stream	✓		✓	✓	✓	✓	✓	✓
Cost structure	✓		✓	✓	✓	✓	✓	✓
Value proposition	✓	✓	✓	✓	✓	✓	✓	✓
Channels		✓	✓	✓	✓	✓	✓	✓
Other elements	Value chain, value network, competitive strategy	Competitors, the scope of management	–	Competitive strategy factors, personal factors		Value network		Critical success factors

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