Mobile Technology as a Bank's Customers Value Driver - the case of Poland

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Abstract

During the last few decades, banking market has changed significantly making banks face new challenges. Mobile technology development has a powerful impact on all human activities including banking. Mobile technology has changed both the information and communication sharing, as well as customers' market behaviour. Nowadays banks have to be more communicative, more customer-centric and innovative. The dynamic increase in the number of smartphones users which is estimated to reach 6,1 billion by 2020 influence the core values delivered by banks' business models. Mobile phones have increasingly become tools that consumers use for banking, payments, budgeting, and shopping. Today they enable using a different kind of financial applications offered not only by banks but also by other providers as telecoms or FinTech enterprises.

The purpose of the paper is to propose the framework for bank's business model that incorporates using mobile technology and creating competitive advantage. The foundation of this framework is based on theoretical background and explorative multiple case studies of Polish retail banks' market behaviour. The paper analysis contemporary used business models, their value proposals and the use of mobile technology as a value driver. The research highlights the strategic routes for bank business models' further development.

Keywords: bank business model, mobile technology, customer-value, banking innovations

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1. Introduction

Today technology is one of the most significant factors influencing the shape of banking systems all over the world. Initially, the banks' motivation to implement modern technology was to improve the efficiency of different processes. It served to reduce costs (Delafrooz et al., 2013, Persson 2013) and increase efficiency, speed, and control of customer-bank interactions (Honebein & Cammarono, 2006). The remote access to banking services and their self-management have delighted both customers and banks. The additional value of the overall customer experience focused on the fact that the clients can access services when and where they want without the necessity of interpersonal contact (Blount, 2010). After the first period of technology admiration, retail banks realised that still a large group of customers prefers face-to-face interactions. Balancing the need concerning service functionality and individual approach to customers focused on relation remains a challenge for banks (Davis, 2013). In recent years, technological landscape has been enriched by mobile technology. Mobile technology development has a powerful impact on all human activities including banking. Mobile technology has changed both the information and communication sharing, as well as customers' market behaviour. The dynamic increase in the number of smartphones users let them sharing any information and access any services in real time. Mobile phones have increasingly become tools that consumers use for banking, payments, budgeting, and shopping. Social media development has influenced markets, companies, institutions and customers' behaviour and expectations (Mayfield, 2008, Ahlqvist et al., 2008, Kaplan & Heinlein, 2010, Weinberg & Pehlivan, 2011, Hanna et al., 2011, Papagiannidis & Bourlakis, 2015, Durkin et al., 2015). Banks have attempted to deploy mobile technology and social media in their market strategies to be more communicative, more customer-centric and innovative (Murray et al., 2014) but their impact on banks need to be better assessed and understood.

This paper argues that extant research in the banking services area is underdeveloped in relation to furthering knowledge on the role of mobile technology in the process of creation, delivering and enhancing value for customers as a core part of business model. It fulfils this gap and contributes to the results of other research by analysing business models of retail banks operating in Poland, their value proposals and mobile technology usage.

The research questions relate to the categorisation of retail banks' business models, the analysis of current customer value factors, the study of mobile technology potential to deliver value to customers in the process of developing a bank-customer relationship.

The paper begins with a literature review concerning banks' business models, their value proposals, and customers' needs and expectations as a basis for creating value for customers. It further discusses the mobile technology application on the retail banking market. The results of an exploratory analysis are the basis for the preparing the proposal of foundations for the bank's mobile business model framework.

2. Theoretical background

2.1. Value for customers in banks' business models

The bank's business model should enable gaining a competitive advantage over the rivals and maintain a desirable market position. It combines all bank's internal tangible and intangible resources that are the source of its strengths and weaknesses with all threats and opportunities that have arisen on the banking market.

The efficient business model is a long-term method of using resources in creating value for customers and other stakeholders (Casadesus-Masanell & Ricart, 2007; Magretta, 2002).

A business model may be defined as a simplified way that explains the relation between internal and external factors influencing reaching organisation's objectives and value creation (Saebi & Foss, 2014, Zoot & Amit, 2010, Santos et al., 2009, Zott & Amit 2008, Magretta, 2002). It is a philosophy of organisation's market activity and a conceptual tool expressing its business logic (Nosowski, 2010, Nosowski, 2012) and precisely determining the value creation's strategic assumptions (Pyka, 2013). The business model may also be defined by describing particular types of components with the common characteristic. The review of business model's definitions and components (see Table 1) allow stating that the ability to create and deliver the original value proposition for customers is its core foundation. This item reflects firms' ability to fulfil customers' needs and expectations and match firm's product and services with these requirements. Among other elements, authors usually indicate the importance of defined market segments of customers, tangible and strategic resources, and strategic processes including the way of communicating and delivering value to customers.

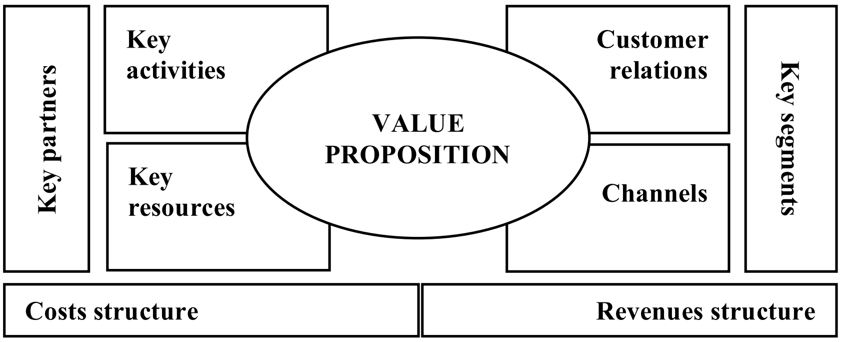
Table 1: The business models' definition and components in selected concepts

Author	Definition	The Components of Business Model
Zott &Amit (2001)	The content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities.	Transaction content, transaction structure, transaction governance
Magretta (2002)	Stories that explain how enterprises work; a good business model answers Peter Drucker's age-old questions: Who is the customer? Moreover, what does the customer value? It also answers the fundamental questions every manager must ask: How do we make money in this business?, What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost?	Customer definition, value to customer, revenue and economic logic
Dubosson-Torbay et al. (2002)	The architecture of a firm and its network of partners for creating, marketing and delivering value and relationship capital to one or several segments of customers to generate profitable and sustainable revenue streams.	Products, customer relationship, infrastructure and network of partners, and financial aspects
Morris et al., 2005	A concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets.	Value proposition, customer, internal processes/ competencies, external positioning, economic model, and personal/investor factors
Shafer et al. (2005)	A representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network.	Strategic choices, create value, capture value, value network
Osterwalder et al. (2005)	The blueprint of how a company does business.	Value proposition, target customer, distribution channel, relationship, value configuration, core competency, partner network, cost structure, revenue model
Johnson et al. (2008)	The consist of four interlocking elements, that, taken together, create and deliver value.	Customer value proposition, profit formula, key resources, key processes

Source: Authors work based on Zott et al. (2011).

All business models' components can be grouped into following core areas (Ballon, 2007, Osterwalder & Pigneur, 2005): creating value for customer, building relations with customers influencing customers' satisfaction, loyalty, and engagement, delivering value by proper infrastructure, managing costs and revenues of areas mentioned above. These areas constitute the business model canvas (see Figure 1).

Figure 1: The business model canvas



Source: Osterwalder & Pigneur, 2005

The fields of the business model and their components should be considered as a potential means through which banks can fulfil their objectives and gain outcomes such as financial performance, risk profile, and contribution to financial stability as well as the economy, which can change over time. Searching for competitive advantage requires analysing these components from the perspective of their potential to create value for customers (Deloitte, 2012). The process of business model creation should thus be based on the knowledge concerning customers' market behaviour, habits, needs and expectations.

2.2. Customers‘ needs and expectations as a basis for value proposal

Preparing the adequate value proposition should incorporate knowledge on customers' core values, technology usage, a preferred way of communication and financial needs and expectations. Additionally, the buying behaviour results from different expectations, experiences, generational history, lifestyles, values, and demographics (Klimontowicz & Harasim, 2017). Those factors differ among generations. The business model must take into account the needs and expectations of leading customers' segments. Today they consist of the representatives of Generation X, Generation Y, and Generation Z (see Table 2).

Table 2: The characteristics of selected generations

Criterion	Generation X	Generation Y	Generation Z
Core values	Time	Individuality	Connectivity
Technology	Assimilated	Integral	Digital natives
Preferred way of communication	Prefer personal interactions and communication.	Commonly use telephone communication and the Internet, active on social networking sites.	Communication via smartphones, active on social networking sites, create own documents and databases, use the web to research and network.
Communication media	Cellar phones	The Internet, picture phones, e-mails	Smartphones, tablets and other mobile devices
Financial needs and expectations	· cautious and conservative, · looking for mortgages, investment insurance, saving programs · money is means to and the end, · used to ingrained status quo banking · some find their bank's existing mobile interface	· earn to spend, · money is today's payoff, · looking for first car loans, first mortgages, credit cards, student loan · a half of them would switch banks to mobile payments capability from their primary bank	· looking for savings and payment accounts, first credit cards, student loan, · more conservative, more money-oriented, more entrepreneurial and pragmatic about money compared to Millennials, · elusive to traditional financial services providers,

	difficult to work with · display some willingness to adopt mobile banking, but they lack the enthusiasm · security concerns about new technology · declare the openness to the idea of mobile banking		· use mostly mobile devices like smartphones, tablets, and laptops for communication · expect everything to be digital · expect seamless cross-channel customer service

Source: Authors work base on Williams and Page, 2011, BMO Wealth Institute, 2014, First Data Corporation, 2010.

The representatives of Generation X still prefer in-person branch banking and face-to-face consulting service, but they are open to online and mobile banking. However, they will expect a high degree of personalisation in their digital banking experience. The generation Y and Z adopt mobile banking easily. As a transaction-rich segment, Generation Z should be treated as significant customer segments for mobile banking (Arnfield, 2015, Arnfield, 2016). Despite the generation, customers have a core set of requirements that are unlikely to change over the next few years. Among them are simplicity, mobility, free or low costs, security, real-time immediacy, flexibility and choice, preferences specialisation and refunds (EBA, 2014).

3. Mobile technology application on retail banking market

Mobile technology has already influenced different aspects of human life. The increasing number of smartphones and tablets and the broad spectrum of their possible usage have caused the dynamic development of mobile banking. Mobile financial services are among the most promising mobile applications. Mobile money could become a universal platform that transforms entire economies, as it is adopted across commerce, health care, agriculture and other sectors (Donovan, 2012). As a result, new kind of banking, called mobile banking (m-banking) has appeared. Mobile banking is a service provided by a bank or other financial institution that allows its customers to conduct a range of financial transactions remotely using a mobile device such as mobile phone or tablet and using software, usually called application (app), provided by the financial institution for the purpose. The type of mobile technology used by retail banks determines the range of products available for customers (see Table 3).

Table 3: The range of banking services enabled by technology

Technology	A range of banking services
SMS (Short Messaging Service)	· information about the balance on the bank account · information about last few operations · money transfers for accounts defined in bank's outlet or via internet access
WAP (Wireless Access Protocol)	· information about the balance on the bank account · money transfers · bank deposits
Lite Website	· information about the balance on the bank account · the operations' history browsing · money transfers · mobile phone prepaying · cards' activation · cards' cancelling
Mobile Applications based on JAVA, Android,	· information about the balance on the bank account · the operations' history browsing · money transfers

	· bank deposit · loans' repayment · credit cards' service · ATM and branches' location browser
NFC (Near Field Communication)	· POS payments · P2P payments
QR Codes	· online payments · POS payments · check sending · P2P payments
RWD (Responsive Web Design)	· information about the balance on the bank account · online payments · mobile phone prepaying · saving account · deposits · credit card repayment · taking out a loan · cards' order

Source: Klimontowicz & Derwisz, 2016.

The ING International Survey on Mobile Banking 2016 revealed that almost 47% of the global population use such a devices for banking and the next 15% is going to use mobile banking during the next 12 month. In Poland, 43% responders have declared using mobile banking and next 20% plan to use mobile banking in the nearest future. The number of m-banking active users is growing very fast. The data gathered by PR News shows that during the last five years has reached the level of 7,6 million users. Among the largest credit institutions PKO BP holds the leader position (see Table 4).

Table 4: The number of customers use mobile banking (2012-2017)

Bank	The number of customers who use mobile banking at least ones a month (in thousands)					
	2012	**2013**	**2014**	**2015**	**2016**	**2017**
PKO BP	236,62	427,54	625,22	1 328,91	1 652,46	2 057,86
Bank Pekao SA	201,00	373,06	595,93	1 014,65	1 495,68	1 697,85
mBank	300,00	724,10	892,00	1 092,44	1 327,56	1 524,42
ING Bank Śląski	98,00	244,00	420,15	500,00	1 048,49	1 260,49
BZ WBK	124,82	239,00	483,47	666,28	974,34	1 115,57
Bank Millennium	51,40	70,06	145,00	402,69	595,76	652,00
Alior Bank	n/a	107,51	41,75	115,05	128,81	174,21
Eurobank	n/a	n/a	49,80	90,00	111,70	132,20
Citi Handlowy	111,13	170,00	66,00	74,96	86,20	114,93
Raiffeisen Polbank	52,60	57,78	27,50	52,50	68,21	77,02
T-Mobile UB	n/a	n/a	50,90	60,00	60,88	71,53
Credit Agricole	n/a	n/a	n/a	n/a	45,03	65,50
BGŻ BNP Paribas	n/a	n/a	77,97	118,62	35,59	61,20
Plus Bank	n/a	5,80	n/a	13,95	27,75	36,99

Source: Authors work base on PRNews Reports, www.prnews.pl/raporty [29.12.2017]

Almost a half of internet users has already installed a banking application. For them making a money transfer is the second most commonly managed activity (the first is sending and receiving e-mail). Over 80% transactions is done using internet and mobile. This channels are also used for sending loan, credit, account and deposit applications (Kurowski, 2017).

The rapid adoption of technology by consumers is changing their needs and the way they interact with banks (CFSA, 2015). Mobile channels will probably become the "first screen" through which customers interact with a bank. Banks will need to innovate to meet customers' expectations and compete with nonbank institutions. FinTech startups and other vendors entering the banking market will create more options for customers. Banks should offer mobile apps different from every other mobile banking apps to keep the customer engaged and provide them with an experience similar to that of using the Amazon, Google or Apple apps (CFSA, 2015, Arnfield, 2016).

The further development of mobile technology and its application will make bank to search for new solutions. Traditionally they treat other banks' market activity as a benchmark for the market decisions. However, in this case, the leading innovative market players have been established outside the banking system. They consist of mobile operators, virtual payment services, and FinTechs. As a result, in the nearest future, the competition concerning the internet and mobile banking will be very extensive.

4. The foundation for bank mobile business model framework

The analysis of mobile banking application altogether with the dynamic increase of smartphones users and m-commerce development show the impressive potential of mobile technology. The so far banks' business models have treated this technology as one of communication and distribution channel. They focus rather on selected aspects of banks' activity as (Capgemini 2008, Deloitte, 2012):

- a range of products and financial needs that may be fulfilled by these products – universal bank and specialised bank,
- a level of service quality and its correlation with price level - financial advisor for mass affluent customers, community bank model, discount bank model, trust operator model,
- a nature and scope of the activities and funding strategies - investment banks, wholesale banks, diversified and focused retail banks.

They took into account customers' needs and expectation but did not focus on delighting them during the overall customer journey with the bank. Competing with non-bank providers will require changing the prior assumption of banks' business models and developing the ability to create exceptional value for customers.

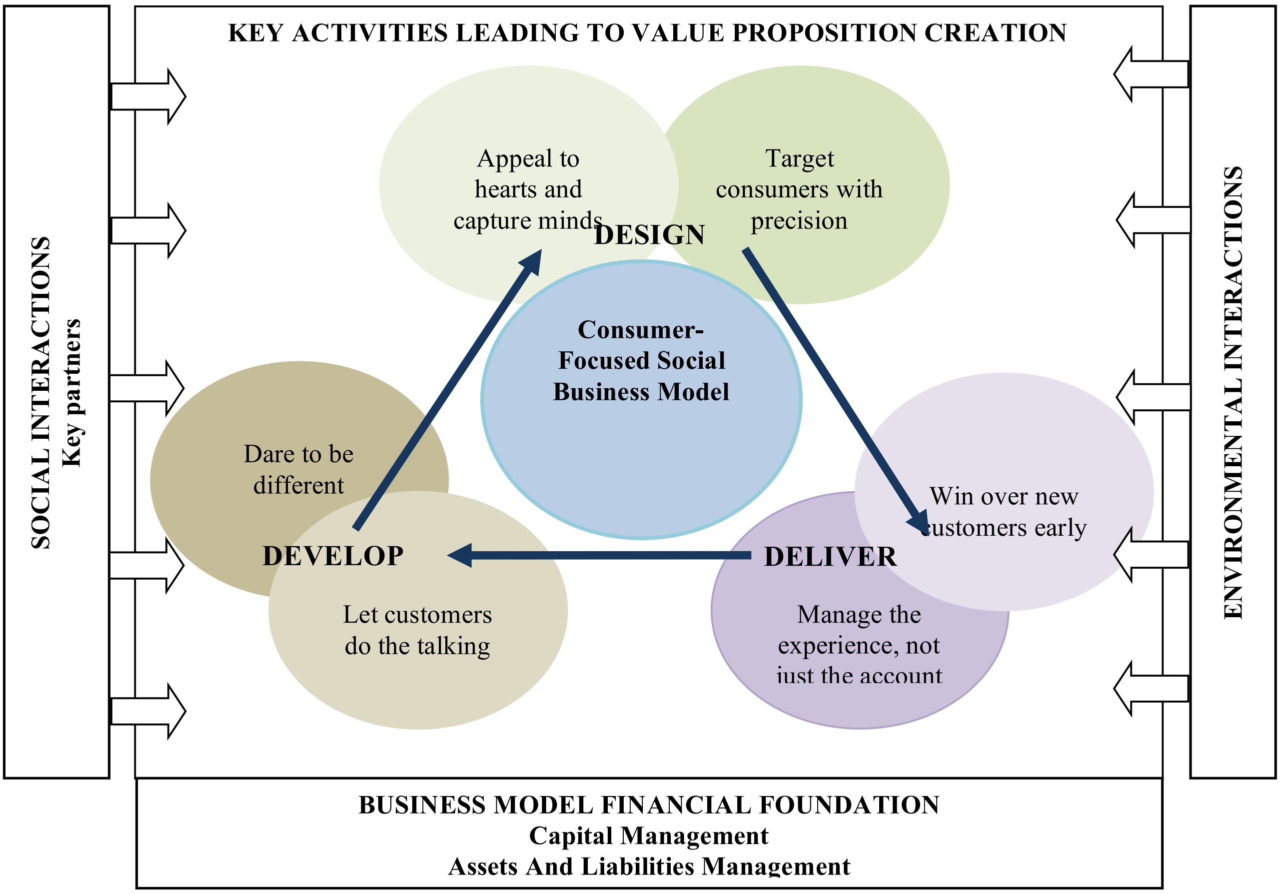
Decreasing consumer defection rate might be reached by approaching three customer elements simultaneously (Symons et al., 2007):

- designing the right propositions for the right customers - a task that involves identifying target segments of the market and crafting propositions and experiences to delight them,
- delivering these propositions by focusing the entire company on them with an early and ongoing emphasis on cross-functional collaboration,
- continually developing the capabilities to delight customers again and again.

Each of these "Three D's" contributes to value for customers' creation and reinforces the others. When wielded together, they can effectively transform a bank into an organization that is continually and profitably developing customers satisfaction and loyalty.

As banks play a crucial role in the economy, their business models must accommodate and balance the individual bank's aims focused on value's creation, market position and profits with the public interest focused on safety. The analysis of banks' case studies and the results of other research are the bases for preparing the foundation of a framework for the customer-focused bank business model. Figure 2 presents the conceptual framework that combines the safety and regulations requirement with resources management and active interaction with customers based on "Three D's" concept. The detailed components of business model must be carefully crafted to capitalise the enthusiasm new customers bring to their selection of product and provider and allow to monitor how customers are using the bank's services and systematically track any potential problems that could cause a new customer to defect. Managing the customer relationship needs tracking how well bank delivers on promises what is the customers' experience day by day in contacts they have with each branch office or call centre. The ability to delight customers again and again means not only gathering customers' opinions but use the findings to correct shortcomings, fine-tune product and service offerings, and, by tying improvements to compensation, motivate employees.

Figure 2: The business model canvas



Source: Authors work.

All these processes may be successfully supported by technology. They should include:

- multichannel integration, especially creating and optimising a seamless experience that bridges physical and digital channels,
- next-generation branch networks that include 'cookie-cutter' branches and differentiated branches that are specialised for a particular territory,
- innovative relationship management, with a particular focus on customer experience and customer feedback management.

The integrated business model architecture must be powered by analytics (real-time event management, etc.), advanced digital advisory and need-based offerings optimised by customers and channels. Additionally, banks will base building long-term relations with customers on their engagement where they spend their time (e.g. on social media), following their personal interests, leveraging influencers, and co-creation based on increased customer intimacy. The future success depends on the ability to create a digital ecosystem. In such ecosystem, banks will serve as trust centre with an extended proposition (financial and non-financial) wherever the customers leverage the power of mobile and offer m-payment services (Accenture, 2012).

The presented conceptual framework for bank business model enabling the increase of customers' engagement is to be the basis for further quantitative empirical research focused on factors that can help or interrupt using mobile technology for its developing.

Among the different factors influencing the shape of banks' business models and their ability to create and deliver value are (Kumar et al., 2016):

- the threat of new entrants resulting in increased competition from fintechs and neo-banks - non-banking service providers in the form of fintech players are causing disruption and disintermediation, often targeting discrete highly profitable segments of the banking value chain,
- changing customer demographics and expectation that are driving the need for innovation to meet customers' demand,
- the increasing risk of cyber threats –facing the unprecedented challenge of data breaches banks are forced to strengthen their security and authentication systems,
- development of cloud services for core business activities as a key enabler of increased agility and improved cost efficiency to support banks' business strategy,
- the need for the transformation of banks' legacy systems enabling to drive agility, achieve better time to market, and develop competitive differentiation,
- the development of distributed ledger technology that is expected to eliminate banks' need for managing multiple databases and reconciliation structure and enhance the transpiration of transaction into the future,
- the necessity for full integration of banks' risk management and compliance,
- the implementation of advanced analytics to deliver insights about customers focused on detection and mitigation of risks associated with frauds,
- financial inclusion and financial awareness.

Today's banking customers want more transparency, more simplicity and easy access. Above all, they seek a seamless experience as they move from one channel to another. Customers are interacting with multiple channels, both physical and digital. More and more, they rate banks according to the overall experience.

5. Conclusion

The last decades have brought fantastic development of new technology that influenced customers' market behaviour. Comparing with alternative financial services providers banks are perceived as traditional ones. Although they implement mobile technology and mobile applications in some fields of their market activity, their business models are still not focusing on creating, delivering and enhancing value for customers. It is a high time to start to be more communicative, more customer-centric and innovative.

The literature review concerning business models and the analysis of mobile technology application on retail banking market was a foundation for preparing the bank's business model framework. The business model concept presented in the paper incorporates the two core aspects of banks' market activity. The first is the ability to delight customers and deliver values during the whole customer experience. Such an ability is necessary for creating competitive advantage and maintaining market position. The second aspect is banks' social and economic responsibility what require adequate capital, assets and liabilities management and fulfiling the regulatory requirements. Combining customers' engagement in value creation process with a strong financial foundation for the business model should bring benefits not only for a bank but also for whole economy and society. Such a complex business model framework must be precisely matched with particular bank's specificity.

İn the nearest future, banks' business model must reflect the changes in customers' behaviour and expectation as well as take into account the new market players and they value proposals.

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