DIGITAL BUSINESS TRANSFORMATION DRIVES MARKET RESILIENCY OF REPUBLIC OF SERBIA

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ABSTRACT

In order to provide their clients with the highest quality services and to be competitive and keep up with the times, banks are increasingly focusing on investing in the development of distribution channels such as ATMs, payment cards, POS terminals, mobile banking, and online banking. The process of digital business transformation in banks leads to a change in the products offered by banks to clients, personal contact is less frequent and the number of branch offices decreases, which leads to a significant reduction in operating costs and increases the number of customers satisfied with the new wax of providing services. The goal of the research in this review is aimed at pointing out the benefits of digital business transformation in banks, their market position, and more precisely pointing out the advantage of using new technologies in the retail banking sector. The research methodology is based on a literature review. The subjects of research are distribution channels with card banking, which is the first and the most developed alternative channel in banks. In this article we come to the conclusion that traditional banking is becoming increasingly important, and banks are focusing on new technologies that are leading to accelerating day-to-day banking and increasing the number of clients. The banking sector in the market of the Republic of Serbia has developed infrastructure and follows the trends of the world banks.

Key words: digital banking, traditional banking, market position, technology, clients.

JEL classification: G21, D4, N7
INTRODUCTION

Banking is determined by the type and content of the banking business and the institutions, which together constitute the content of the banking system. The development of banks throughout history has been determined by the forms and specifics of production and reproduction, to which the function and organization of banks has been adopted, while maintaining the basic content of the bank as an intermediary in monetary affairs [4]. Traditional banking is aimed at performing basic banking tasks such as payment transactions, collecting deposits, creating money and granting loans. The main source of income and expense for banks that do only basic banking operations, are interest income and expenses. Traditional banking is characterized by a large number of office branches, high variable and fixed costs, low supply of products and services, imbalance of supply and demand for loans.

Modern banking and alternative distribution channels are one of the most popular topics, especially in Europe, and a topic that will be subject of research in the near future. As alternative channels of distribution nowadays are ATMs, online banking, Internet or e-banking, mobile banking, web sites, POS terminals, payment cards, SMS and point of sale (POS), [6]. The main characteristics of these digital channels are individuality, mobility, time and place independence, flexibility and interactive work. The benefits they provide are numerous and some of the most significant are: a smaller number of organizational units of the bank, a much larger number of customers who can be provided services, reduced fees, 24 – hour service availability, 365 days a year and stronger bank competitiveness [4].

Payment cards are the first alternative in distributing banking products, beyond the frame of traditional banking. Benefits of use have evolved over time, from user experience to significant financial savings [7]. Electronic banking means access to banking service from any computers that connect to Internet, from home, from work or from travel. Through electronic banking, clients can open and use checks, loans, deposits and check accounts, they can pay bills, perform currency exchange business, check their account balance and use credit card systems. The mobile phone is also a significant distribution channel that has gained great popularity in all age groups, even in less developed countries. Mobile banking is used for checking account balances, account transactions, payments, loan applications and other banking transactions, through mobile devices, which distinguishes it from electronic banking [6].

POS terminals make it possible to pay for goods and services at a trading venue in a quick and easy way. Today, POS terminals support contactless payment. The contactless payment limit varies from country to country and is set by card organizations. In the Republic of Serbia, at the period when this service was just introduced, the limit was 1500 dinars for MasterCard. POS terminals are in practice viewed as electronic money transfer to the point of sale, while the role of ATMs allow customers to deposit and disburse cash, use day and-night vaults, change their PIN, and query balances in bank accounts.
At the beginning of this paper, a review of the literature is given; the distribution part is analyzed in the main part of the paper, with a special reference to the development of card banking and the benefits that banks gained with their introduction. Subsequently, the statistical data collected by the National Bank of Serbia for the receiving network in the Republic of Serbia are presented and briefly analyzed. In conclusion, the results of the analyses are summarized.

The goal of the research in this paper is aimed at pointing out the benefits of digital transformation in bank operations, their market position, and more precisely, the benefits that new technologies bring to the retail sector.

**LITERATURE REVIEW**

As banks around the World are exposed to enormous pressure to improve their delivery and quality of service, the development of distribution channels in modern banking is one of the most popular topics of today. The appearance of the Internet has created new opportunities for providing the highest quality banking services, with lower operating costs [4]. In banking, distribution channels imply mechanisms for reaching out to customers in order to provide service [7]. In order to face the challenge, banks need to develop different strategies [7].

Highlight the most important trends that can be expected in retail banking in the coming period:

- increasing the online market presence through the use of advanced technology platforms,
- investment in solutions related to mobile financial services of enterprises with the aim of stimulating innovation and cost reduction,
- empowering online and mobile banking channels to achieve the same importance as office branches,
- greater emphasis on multi-channel integration with the aim of providing higher quality services,
- increasing investment in analytical tools with the aim of improving customers relations,
- a new organizational approach, refinement of mobile banking applications and a focus on security and authentication.

The popularity of the mobile payment system, such as through close wireless communication, is on the rise [8]. Cite Google Wallet and Apple as examples of companies using their own fingerprint recognition system. Shaikh and Karjaluoto (2015) conducted an empirical study in Pakistan on the use of e-banking in which, after a series of analyses, they found that clients were not trusted for lack of cyber security. And when it comes to the use of payment cards, there have not yet been significant abuses on the market of the Republic of Serbia by international groups that download card data and retrieve PIN numbers [7]. As a significant source of information on the development of distribution channels in modern banking, in
particular explanations of new trends that banks are required to implement in accordance with the provisions of card organizations, are the websites of leading card organizations – Visa and MasterCard.

THE ROLE AND IMPORTANCE OF DISTRIBUTION CHANNELS IN MODERN BANKING

Traditional banks or, as they are called these days – conservative banks, are focused on providing basic banking products and services, such as granting loans, conducting payment transactions and receiving deposits. Such banks are characterized by a large number of office branches, as well as adjusting their clients to the bank, both in terms of working hours and in interest rates and fees. With the development of new technologies, the strengthening of the financial market and competition, such banks are increasingly losing importance, especially in development countries where banking is fully adapted to the requirements of modern times. The advancement in the field of IT enabled the adaptation of banking operations to the needs of clients, better and easier management of banks and the emergence of new services and banking products [4]. Modern banks strive today to minimize a personal contact with clients, more precisely, to make the branch office s place where more complex banking problems will be solved. With the implementation of distribution channels, modern banks do not need a large business networks, as traditional banks do. This way of work leads to lower costs; banks have lower expenses for renting office space, as well as reduced expenses for salaries to bank employees. In order to maintain their position in the market, banks need to adapt to modern trends and constantly work on developing distribution channels. Modern banking distribution system includes the Internet, banking terminals, and mobile telephony, which is increasingly talked about today [7].

Banking terminals are now called ATMs and are the simplest and fastest way to withdraw cash. The first ATM, which came into use in 1972, was intended only to withdraw cash from it, while today the function of ATMs has progressed significantly. In addition to the so-called Out-Of ATMs, there are also In-In ATMs, which besides making payment, also allow you to deposit money into your account this type of banking service is most appropriate for merchants to pay their daily income. Today banks are increasingly investing in multifunctional ATMs, which, in addition to services such as cash withdrawal and payments, also allow for currency exchange, checking the account balance to which card is tied, and changing the PIN for payment cards. ATMs are usually set up in accessible locations and are available for use every day – 24 hours, throughout the week. Clients can withdraw money without a commission if they use the parent bank’s ATM. The two largest manufacturers are NCR and Diebold Nixdorf.

In addition to a number of benefits, both for customers and for the bank, multifunctional ATMs have very little ability to run out of cash. The money that is paid is stored in certain “cassettes”, from which payments are then made, so that such
ATMs make it easier for banks employees to work, as they reduce the time required to recharge and greatly facilitate work at location outside the office branches.

Banks in the Republic of Serbia are increasingly investing in the purchase of ATMs as shown by data from the National Bank of Serbia. Chart No 1 illustrates the number of installed ATMs in the Republic of Serbia in 2018 and 2019, by quarters. In the first quarter of 2019, a total of 2,859 ATMs were installed in the Republic of Serbia, and a total of 2,953 ATMs were installed in the last quarter. It is concluded that in 2019 growth was recorded in all quarters. As illustrated in the chart No 1, the upward trend in all quarters was recorded in 2018 as well.

Reception Network ATMs Reporting period – quarter.

*Chart 1 – Total number of installed ATMs in the Republic of Serbia*

<table>
<thead>
<tr>
<th>Reporting period (quarter)</th>
<th>Number - ATMs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.600</td>
</tr>
<tr>
<td>2</td>
<td>2.850</td>
</tr>
<tr>
<td>3</td>
<td>3.000</td>
</tr>
<tr>
<td>4</td>
<td>3.000</td>
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</tbody>
</table>

*Source: [3]*

**Point-of-sale POSs** allow merchandise to pay for goods by credit card. These terminals have a server for processing payment transactions by reading data from a card that serves as a means of activating the system. The steps in the transaction authorization are as follows:

1. The customer first communicates the card number to the merchant
2. The merchant bank sends a request to the card organization to determine the issuing bank
3. In this step, the card organization through its authorization system checks the transaction to the issuing bank for approval.
4. The issuing bank approves the transaction
5. The card organization sends the approval to the merchant’s bank
6. The merchant’s bank sends him a clearance and after that the customer receives a slip and makes a purchase.

In addition to the benefits of the bank and POS terminal user, the merchant himself also has an advantage, such as increase in sale and competitiveness. Banks generate income on a commission they charge to the merchant who contracts this type of deal with them. Nowadays merchants have POS terminals with NFC technology, which allows reading cards with a contactless chip, without typing PIN, up to a certain amount, which greatly speeds up payment at retail shops.

Chart No 2 clearly shows that the number of installed POS terminals in the Republic of Serbia in 2018 when the number of installed POS terminals was 88,009 and in the first quarter of 2019 that number was 87,190, so we notice that a reduction has occurred and that a number of installed devices were pulled out, withdrawn from use.

If we compare the data from 2018 in the chart numbers, it is concluded that there was a significant increase in the last quarter when the number of installed POS terminals increased by 4,045 compared to the third quarter. Reception network – POS terminals

**Chart 2 – Total number of installed POS terminals in the Republic of Serbia**

<table>
<thead>
<tr>
<th>Reporting period (quarter)</th>
<th>Number of POS terminals</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>85,000</td>
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<tr>
<td>2</td>
<td>90,000</td>
</tr>
<tr>
<td>3</td>
<td>85,000</td>
</tr>
<tr>
<td>4</td>
<td>95,000</td>
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</table>

**Source:** [3]
ELECTRONIC BANKING (E – banking)

E-banking is the computerized provision of banking services to clients through electronic communication channels [7]. With the appearance of widespread use of the Internet, the emergence of e-banking has emerged, with the largest expansion ever since the year 2000. In order for e-banking to function properly, banks need to have a good information system, in addition to protecting data and respecting privacy. Initially, customers could perform basic banking services, such as transferring funds from one account to another, but over time, banks began to increasingly improve this type of service in order to cope with competition and to keep up with emerging market trends. Today, banks allow customers to apply for products through electronic banking. Customers can easily access this banking service, all they need to do is submit an application for using e-banking, and after processing the request, they will receive an instruction manual. All banks nowadays offer electronic banking services not only to the population but also to the economic sector. The access to electronic banking itself varies from bank to bank, with some banks requiring the installation of certain software on a computer, and while some banks have access through the bank’s website.

The risk of using this service is hacking and this kind of risk is dangerous for both the client and the bank. However, significant investment of banks in the information system, accelerated development of technology and increased number of e-banking users significantly contribute to counteracting such attacks.

In order to attract its customers to use electronic banking, bankers are increasingly deciding to allow financial transactions to be performed at much lower fees, while some banks are allowed to carry out certain financial transactions free of charge. In addition to this opportunity, in order to retain customers, attract new ones and cope with ever – increasing competition, banks are constantly innovating.

MOBILE BANKING

Mobile banking is the latest way to conduct financial transactions through a mobile phone. Given that banks are now heavily influenced by digitalization, they are increasingly focusing on developing this service that enables customers to pay their bills quickly and easily, regardless of the time, and place they are located. Mobile banking has become an important distribution channel, and considerable research has been dedicated to its adaption [9]. Mobile banking services have become available to a wide range of institutions in recent years. With the development of new technologies and the expansion if options that mobile banking offers to users, the number of users is growing. Research also shows that the growth in the use of smartphones also significantly increases the use of mobile banking [10].

The opportunities offered by mobile banking largely overlap with Internet banking service, so it is more about substitutes than complementary services. The larger number of banks in the Republic of Serbia has developed applications for the two
largest mobile operating systems – Android and IOS [7]. The capabilities of the m-banking application vary from bank to bank. Nowadays, most banks have developed a “Shot and pay” option that allows customers to pay their bills without typing, it is enough to just take a photo of the account number and all other elements necessary for a transaction to be successful. In the market of the Republic of Serbia, the most prominent is the m-banking application if Addiko Bank, which is also the highest ranked. Addiko Bank has developed an innovative service, which has significantly contributed to the positive opinion of users and public opinion on the m-banking application, which is the application for m-credit. As with the e-banking, mobile banking fees are significantly more favorable for the client. This type of transaction also benefits the banks when it comes to costs, since the costs per transaction are lower than when transaction is performed from a bank office branch.

PAYMENT CARDS

Payment cards represent the most significant alternative distribution channel that enables customers to withdraw cash of ATMs and POS terminals, and are also used as a means of payment for goods and services at points of sale in the country and abroad with the corresponding payment and label. The first payment cards appeared in the United States in the first half of the 20th century (the late 1920s). At first, the cards were more a means if identification and a guarantee than payments, the rest were issued by companies and could only be used in the shops or service facilities of those companies. Later, by agreement of different companies, they could be used in the facilities of other companies as a result of the agreement between the two companies [7].

Basic characteristics of payment cards

A payment card is a specific product that has clearly defined characteristics and elements. Each element of the payment card is clearly prescribed by a separate standard. Standardization is particularly important in this area because of the widespread adoption of payment cards globally. The most important features if payment cards are:

1. The physical characteristics of payment cards and their production are precisely defined by ISO/IEC 7810
2. In addition to the physical characteristics, each payment card must be in general standards governing the format and structure of the data on the payment cards but they also further define some of the dimensions. Technological development has contributed to the fact that today there are different technologies and designs as well as types of payment cards on the market, so each of them needed to define and edit in more details the areas of designing and defining data formats and structures.
3. The design of payment cards is specific, because in addition to the aesthetic importance, a very important aspect of the security that the design itself provides. The main objective of card design is certainly the recognition of bank brands and card organizations. The second objective is to protect card users, but also banks and card organization – both financially and reputationally [7]. For example, if a bank is launching a project to produce a new type of card that it has not yet offered, it needs to send to the card organization sector, called “Card Design”, the so-called “Card Proof”, which shows the color before the start of production, tabs, position and sizes of all the essentials that appear on the card. Once the card organization approves the design, then the bank can produce the card.

**Types of payment cards**  
**Payment cards can be debit or credit**

While a payment card is a means of payment (or simpler, it is a small plastic card that can pay for goods and services), a debit and credit cards are its subtypes [1]. The debit card can be used by the client up to the amount if available funds in the account, within the daily limit. Daily limits are variable and with the consent of the bank, they may be changed at the client’s request. From a time perspective, debit cards give the customers the benefit of being able to withdraw money at the nearest ATM, with no time limit. Debit card cancelation is made on the basis if the decision of the user to discontinue further use or based on the bank’s assessment that the user did not use the card correctly. However, in order for the card to be cancelled at the request of the user, it is possible only after all transactions arising from the use of the card have been posted and the accounts to which the card is tied, there are no reserved funds for processing transactions, as well as any other outstanding obligations, creating using basic and additional cards.

A credit card we linked to account approved by the bank, allowing customers to pay in instalments. Depending on the type, credit cards that make purchases in instalments are distinguished, followed by cards that allow deferred payment (at 10 – 20% of debt), while interest us charged on the rest. The credit card approval process itself is not different from the classic credit approval and like the classic credit approval process and, like the classic credit product is a significant source of income for the bank. Credit card is considering an innovation in the distribution of credit banking services. Credit cards were created out of the need for the easier use of bank credit facilities beyond their convenience and availabilities [6]. The most important role in the card business process is played by the card organization. MasterCard is one of the largest card organizations today but besides it, there are Visa, Diner, Dina Card and American Express. Credit card organizations set the standard for card issuing and transacting banks. Other third parties, such as process centers, check accounts and balances [8]. A credit card company may use the personal information of payment card users to protect and prevent fraud, unauthorized transactions and to manage risk exposure. It can also aggregate some of the personal information to create models identify past and potential future fraud, and
offer it to financial institutions, partners and clients. Based on these models, the bank can decide whether or not to approve the transactions [2].

**Payment card issuing process and bank responsibilities**

In order to receive a payment card, a customer needs to fill in an application form, commonly referred to as a Payment Card Application, and submit this request to the bank’s office branch. The bank receives this request, then processes it in the manner prescribed by the internal procedure, and makes a request for personalization of the payment card. Some banks have their own Centre, where they perform personalization of payment cards, and on the other hand, there are banks for which this type of work is performed by the Processor. After the personalization and acceptance of the card in the bank’s office branches are completed, the clients are handed a payment card. The client may also request an additional card for the authorized person in their account, but in this case, the basic user shall bear all the costs incurred by using the additional card. The procedure for issuing an additional card is the same as the procedure for issuing a basic card. If the client chooses to cancel the basic card then the validity of the additional card is also expires. The clients may advertise wrong or double credit, debit for cash, goods or service received, a transaction that he does not recognize as his own, as well as debit on account for goods or services, which he has settled otherwise. The deadline for filing a complaint differs from bank to bank, usually one month from the currency of debit if the card user’s account. During the complaint procedure, the bank checks whether the payment transaction was authenticated properly recorded and registered and whether its cancelation was affected by some technical failure or other defect. If the justification of the complaint us determined, the complaining amount of the transaction is approved by the client’s card account upon completion of the complaint procedure. The client is obliged to report the card loss immediately to the bank, and the bank is obliged to block the card immediately. All costs incurred by using the card up to the moment of reporting the loss or theft shall be borne by the card user.

**Advantages of using payment cards**

Banks are increasingly migrating to the digital arena. In this way, they reduce costs; increase the speed of distribution and reach of their offers. On the other hand, customers have more and more advantages and benefits from this approach because the market is very competitive, the prices of services are lower and the possibilities of using banking products are greater [7]. A big influence in the card business has interchange fee that is prescribed by the card organizations that the issuing bank and the accepting bank pay one to another for the performed transaction. The amount if the inter-bank fee varies by product type, transaction type and varies from country to country.
An inter-bank fee was introduced to make the payment system fast and secure: - helps cover up operating costs that banks may otherwise pass on to customers, - contributes to investing in creating the security if electronic payments that customers rely on, - contributes to investment in the future development and maintenance of the system [5].

6. CONCLUSION

First of all, the appearance of the Internet and then the introduction of information technologies into the banking system have significantly influenced the development of the banking business. The word “digitalization” is becoming more and more popular in our society, especially when it comes to the banking industry. The development of technology has enabled banks to move beyond traditional frameworks and focus on clients and innovation of banking products and services. Traditional distribution channels are censed dared safer and easier to use, especially in the Republic of Serbia, but they are characterized by high costs for the bank and for the client. Alternative distribution channels bring significantly lower costs to the bank and increase the speed of distribution. Clients also have a number of advantages and more important among them are lower costs, time savings and lower service costs because the market is competitive.

Increasing competition in the market has also forced banks to focus on digital channels. In order to survive in the market, attract new clients and retain existing ones, banks need to keep up with modern trends and adapt. Nowadays, banks that are adapting to modern trends are quicker and more successful in capturing the market, and accordingly, many analyses indicate that alternative distribution channels are the future of the banking business. Payment cards represent the most important alternative distribution channel. Card organizations monitor technological development, monitor client needs, and dictate rules to banks accordingly. To enhance online transactions, global card organizations Visa and MasterCard have introduced the highest level of security, called 3D secure, and therefore the mandate for banks’ implementation. 3D secure is the security standard that provides all users with the highest level of security when shopping online. The so-called Secure Code protects all three parties to the online purchase process – the client, the merchant and the bank. On this basis, it can be concluded that both card organizations and banks are focused on providing the highest possible level of security when conducting transactions.

In order to direct clients to digital channels, banks must primarily educate their employees, especially those who work in branch offices, as they are in fact the first instance with clients. First of all, they need to be educated on how to use and how to sell, that is, to attract the population to use new products. Traditional distribution channels will not be shut down, for more complex jobs, clients will be able to come to the branch office, as such jobs cannot be done nowadays through digital channels.

Current pandemic crisis has likely shifted short-term business objectives to focus on operational efficiency in the long term. In line with this, the top objectives for the market executives will be the digital strategy based on modernizing IT infrastructure.
LITERATURE


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