

PERPECTIVES FOR THE DIGITAL BANKING DEVELOPMENT IN THE REPUBLIC OF MOLDOVA

PERSPECTIVE PENTRU DEZVOLTAREA DIGITAL BANCARĂ ÎN REPUBLICA MOLDOVA

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Abstract

The digital transformation of banking constitutes one of the greatest advances in recent years. At an international level, the digitalization of all processes is unstoppable, including the application of state-of-the-art technologies and the implementation of software to optimize their operations. The digital transformation of banking is, first and foremost, an obligatory step in the financial system. The banking system in the Republic of Moldova is at an early stage, in the process of digitization of banking activities, a situation that can be an advantage, giving commercial banks in our country the opportunity to find and implement solutions that have proven viable in the case of other credit institutions, respectively to research and identify much more deeply the needs of the customers from the Republic of Moldova, in close correlation with its specific economic, cultural and social realities. The aim of the research is to analyse the opportunities and challenges in development of the digital banking in the Republic of Moldova. This presumes a vast investigation of banking innovations that have been implemented in the service activity and their influence in the daily bank management. Furthermore, one of the main purposes of the research is to underline the importance of the digitalization in the banking sector, especially in the current COVID-19 era.

Keywords: banking sector, bank transactions, Covid-19, digitalization, digital banking, financial literacy.

JEL Classification: G21, I22, I25

1. Introduction.

The digital transformation of banking constitutes one of the greatest advances in recent years. At an international level, the digitalization of all processes is unstoppable, including the application of state-of-the-art technologies and the implementation of software to optimize their operations. The digital transformation of banking is, first and foremost, an obligatory step in the financial system. Other institutions such as entertainment, communications, and even sport have been able to adapt to the technological era. Banking should not be the exception.

Digital banking goes beyond just online or mobile banking platforms. It involves the complete digitalization of all activities, programmes and functions. And it does not just require the digitalization of services and products, the front-end that customers see, but also the automated back-end processes and the middleware that connects them. The transition from traditional banking towards digital banking is marked by different rates of progress. This is a journey where new technologies like blockchain, big data, artificial intelligence, cognitive systems and the Internet of Things have driven the complete digital transformation of the finance world to improve the customer experience, create high-value digital services, guarantee sustainability and maximize efficiency and profitability. At the same time, mobile

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banking is starting to stand out and reveal itself as an opportunity for banks to generate more revenue through transactions.

The improved user experience that digital banking provides, both for customers and banks, in turn boosts profit. By making services available 24 hours a day, the number of customers increases, and, gradually, it will become the first choice for immediate business transactions where money needs to be in constant movement. It will also lead to increased online credits supported by precise mechanisms that gather and analyze data in order to make market predictions, offer new business models and provide the customer with the best banking services. Banks need data to improve the customer experience but they also need to guarantee data privacy at the same time, therefore confidence is key.

The COVID-19 crisis has highlighted the need for significant support and investments on digital transformation and effective digital governance, particularly to ensure the continuity and delivery of core government functions. In the last months, business continuity was severely hampered, and many government officials and staff had to continue working in their physical offices not only due to infrastructure issues, but most importantly due to the presence and location of data and information in offline data files and paper-based systems. But while there has been much emphasis on digital tools and technologies, we must also support the analogue component of digital transformation – policy, institutional coordination and trainings, and leadership – remains a significant challenge in many countries in the region, and thus may continue to constrain effective digital transformation if left unaddressed. The COVID-19 crisis has triggered increased demand for digitalization of processes and remote digital solutions especially for sales, marketing, on-line offers, digitalization of logistics and real-time interaction with customers. However, the negative effect of the crisis limits the investment capabilities of economic agents to make these changes. Significant support is required to realize these transformations.

The Republic of Moldova is one of the countries strongly affected by the crisis caused by COVID-19 pandemic in 2020. Added to this are the difficulties in the agricultural sector caused by severe drought this year. 2020 is a year of tough challenges, both socially and economically. Respectively, the activity of the banking and non-banking system was also disrupted, leaving its mark on macro prudential indicators.

The aim of the research is to analyse the opportunities and challenges in development of the digital banking in the Republic of Moldova. This presumes an investigation of banking innovations that have been implemented in the service activity and their influence in the daily bank management. Furthermore, one of the main purposes of the research is to underline the importance of the digitalization in the banking sector, especially in the Covid-19 era.

2. Methodology of research.

The methodological basis is specialized literature, laws and regulations as well as the internet. Among the methods used in economic science, the following research was used: statistical surveys, induction and deduction, which is the basic behaviour related to national economy, the method of comparison, analogy and synthesis that allowed the study of the existence of the subject matter and the drawing of conclusions. The informational base of research is the reports and publications of the Central Bank, as well as other publications related to the research subject.

3. Results and discussions.

The banking system in the Republic of Moldova is at an early stage, in the process of digitization of banking activities, a situation that can be an advantage, giving commercial banks in our country the opportunity to find and implement solutions that have proven viable in the case of other credit institutions, respectively to research and identify much more deeply the needs of the customers from the Republic of Moldova, in close correlation with its specific economic, cultural and social realities. On the other hand, this delay in adoption and the promotion of innovative products and services, respectively in the optimization of production processes, can affect the competitive capacity of domestic banks, making them vulnerable in relation to financial institutions that carry out financial intermediation activities, directly in the Republic of Moldova.

One of the first innovative elements of the banking sector was the introduction of the bank card. Cashless payment tools are essential components of the payment system and the National Bank conducts their supervision in order to ensure efficiency and security of their utilization. Out of payment tools available, the most used by population (individuals) are payment cards. It is worth mentioning that the NBM is undertaking relevant measures together with other national authorities and institutions in order to promote utilization of cashless payment tools and fight tax evasion.

According to the statistical data presented in figure 1, in 2020 the number of cards reached the level of over 2 million, showing an increasing tendency compared to the previous years.

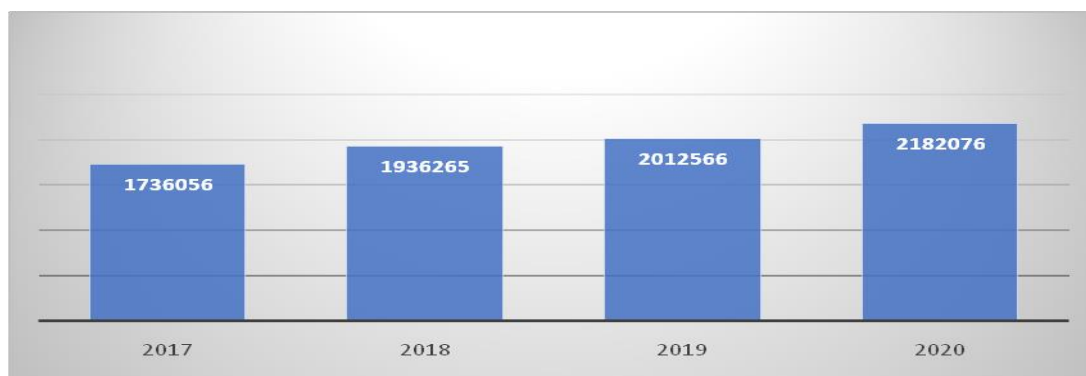


Figure 1. The number of payment cards in circulation for 2017-2020.

Source: Elaborated by authors based on National Bank of Moldova statistical database with the information on the card payment systems of the Republic of Moldova. [online]. [accessed on May 25, 2021]. Available: <https://www.bnm.md/bdi/pages/reports/dsp/DSP1.xhtml>.

At the same time, the number of card transactions also registered an increase during 4 years, in 2020 reaching the amount of 96 million 28 thousands, constituting the value of over 75 billion MDL (figure 2).

At the same time, in 2020 from the total volume of transactions performed with cards issued in the country, 73.2% represented cashless payments, and 26.8% - withdrawals (Figure.3).

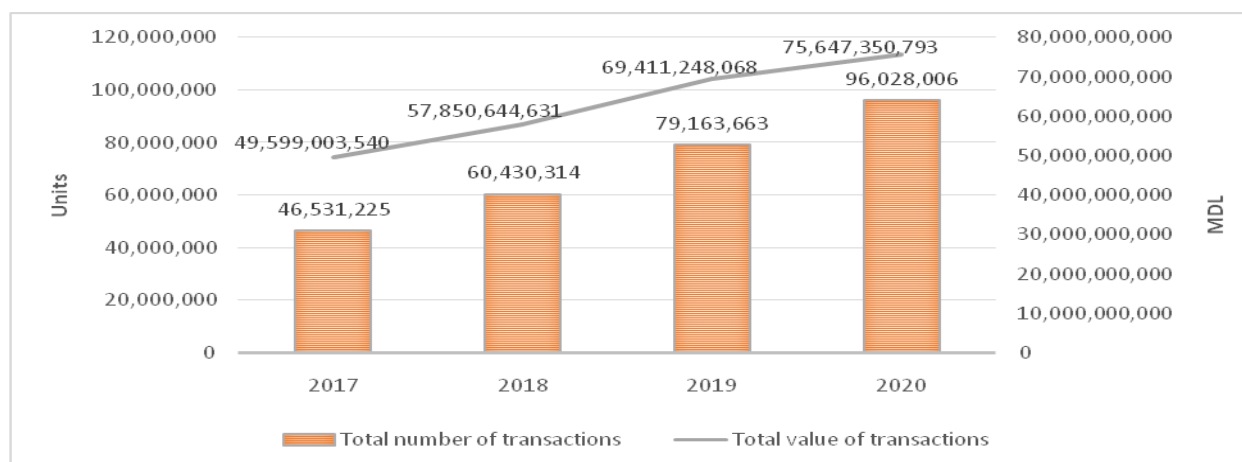


Figure 2. The total number of transactions performed with cards for 2017-2020.

Source: Elaborated by author based on National Bank of Moldova statistical database with the information on the card payment systems of the Republic of Moldova. [online]. [accessed on April 23rd 2021]. Available: <https://www.bnm.md/bdi/pages/reports/dsp/DSP1.xhtml>.

The highest growth rate was recorded in the number of non-cash payments, 38% more than in the previous year, while the number of cash withdrawals decreased by 8.8% compared to 2019. We can deduct that such significant increase of non-cash payments is due to the Covid-19 pandemic situation, because in this period the majority of the population work remotely and in order to protect their health the cash withdrawals decreased. Daily, on average, with payment cards issued in the Republic of Moldova, 77.4 thousand cash withdrawals and approximately of 139.5 thousand cashless payments are made. The average amount of cash withdrawals in 2019 reached MDL 1,848, up by 8.3% compared to 2018. At the same time, a cashless payment on average had a value of MDL 338, decreasing by 7.1% versus 2018.

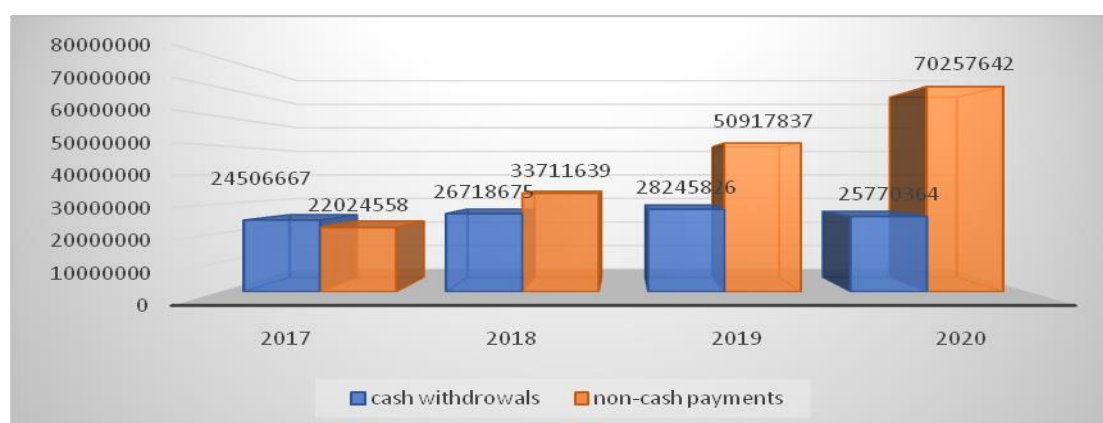


Figure 3. The number of cash withdrawals and non-cash payments for 2017-2020.

Source: Elaborated by author based on National Bank of Moldova statistical database with the information on the card payment systems of the Republic of Moldova. [online]. [accessed on April 21th 2021]. Available: <https://www.bnm.md/bdi/pages/reports/dsp/DSP1.xhtml>.

The payment card acceptance network of the Republic of Moldova developed during 2019, as the number of POS terminals registered a value of 20 517 units (Figure 4). This indicator shows an increasing tendency in dynamics compared with the previous year by 2.3

thousand units. Could be deducted that the main cause of such increase is the growth in number of the issued cards and of the transactions performed by cards.



Fig.4. The number of POS terminals in the Republic of Moldova for 2016-2019

Source: Elaborated by author based on National Bank of Moldova statistical database with the information on the card payment systems of the Republic of Moldova. [online]. [accessed on April 21th 2021]. Available: <https://www.bnm.md/bdi/pages/reports/dsp/DSP1.xhtml>.

According to the data presented below, a significant increase in the number of ATMs can be noticed in dynamics with 92 units in 2018 compared to the year 2016 (Figure 5). This growth was stimulated by the growth in the number of issued cards and by the possibility to withdraw the desired sum at any time the client wants. However, in 2019 the number of automated teller machines constituted 1 137 units, showing a decrease with one unit compared to the year 2018. As a cause of this decrease can be regarding the strategies of some banks like B.C „Procredit Bank” S. A., which is focused on increase of cashless transactions, in order to promote the remote service and diminish the coins and banknotes in the circulation.

The increase in the number of non-cash transactions was due to both external factors such as globalization and internationalization, as well as domestic ones, such as the central bank's vision.

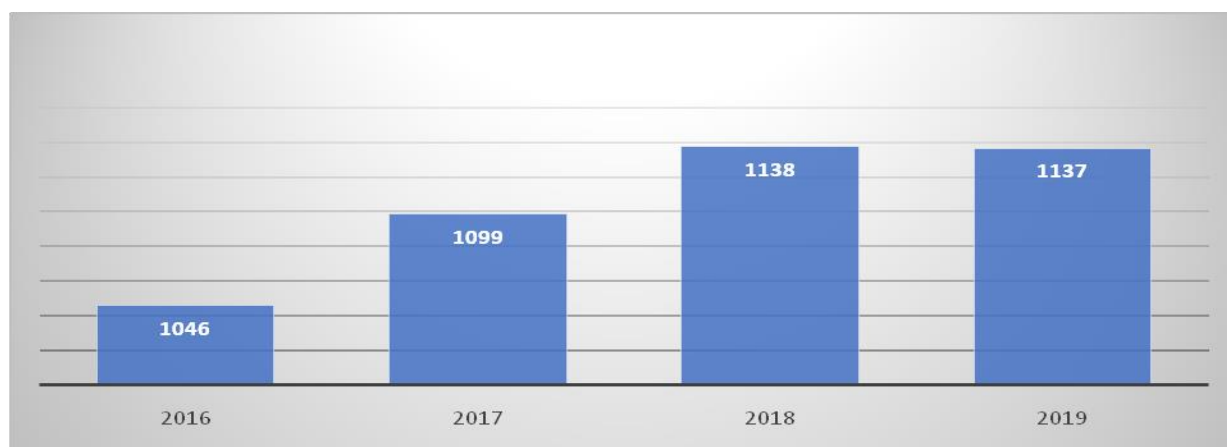


Fig.5. The number of ATMs in the Republic of Moldova for 4 years (2016-2019).

Source: Elaborated by author based on National Bank of Moldova statistical database with the information on the card payment systems of the Republic of Moldova. [online]. [accessed on April 21th 2021]. Available: <https://www.bnm.md/bdi/pages/reports/dsp/DSP1.xhtml>.

The development of cashless operations and the massive use of bank cards led to the implementation and spread of various electronic banking products and services: internetbanking, mobile-banking, sms-banking, ATMs, POS Terminals, etc. The analysis of the offered remote banking services reveal that already all licensed banks in the Republic of Moldova offer to its customers broad spectrum of digital banking services. Thus, the National Payment System is a complete set of instruments, intermediaries and rules, which facilitate the flow of money in a country, consisting of a set of rules and payment instruments, institutions and technical mechanisms for the transfer of funds, which is an integral part of monetary system in an economy.

The total number of ARSS (Automated remote services systems) holders constituted 1,600.2 thousand holders at the end of 2019, increasing by 66.6% as compared to 2018. Number of active holders, also recorded a growth trend of 57.6%, reaching the figure of 384.2 thousand, which shows the interest and the growing trust of payment service providers' customers to use ARSS. Of the total number of ARSS holders, the active ones have a weight of 24.0% (Figure 6).

The distribution of ARSS holders by system type shows that 55.7% of them are registered in the internet-payments systems (10.6 percentage points less than the end of 2018); 40.6% of their total number are holders of mobile-payments (14.1 percentage points more than the end of 2018); 3.6% (2.5 percentage points less than at the end of 2018) of the total number of users use telephone-payments and only 0.1% use PC-payments (holders of PC-payments are only legal entities), this share decreasing by 1.0 percentage points towards the end of 2018. In 2019, 21.5 million transactions were made through ARSS, by 27.5% more than in 2018.

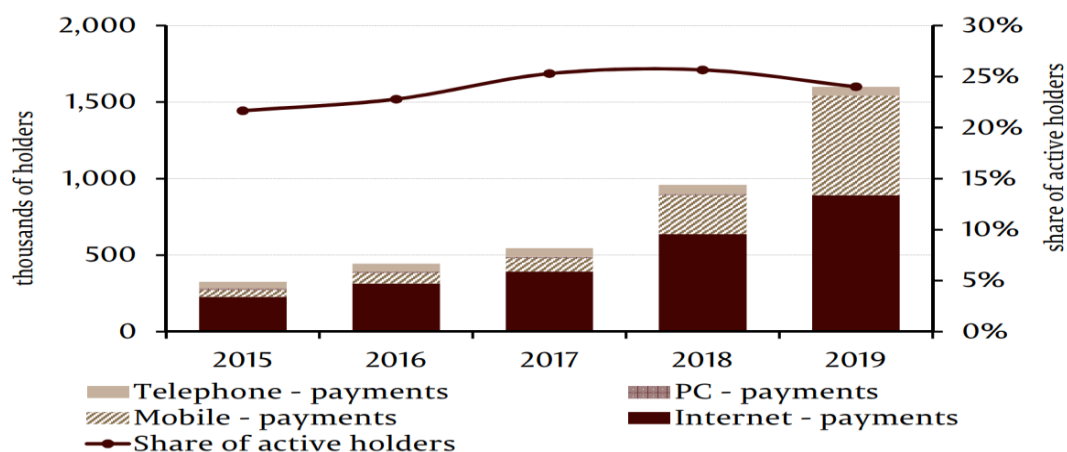


Fig. 6. The number of ARSS users by systems type for 2015-2019.

Source: The Annual Report of the National Bank of Moldova. [online]. [accessed on April 21st 2021].

Available: <https://www.bnm.md/bdi/pages/reports/dsp/DSP1.xhtml>

The increase in the number of transactions through ARSS can be argued by the fact that customers of payment service providers are increasingly oriented to pay for various services/goods through ARSS, due to the convenience they offer, but also by lower spending which payment service providers pay for them from a distance.

The value of all transactions made through ARSS by individuals and legal entities totalled MDL 565.6 billion in 2019, increasing by 17.3% from the previous year, which shows the increase in customer confidence in transactions through ARSS (Figure 7). Approximately 98.1% of the value of the transactions performed by the ARSS was performed by legal entities.

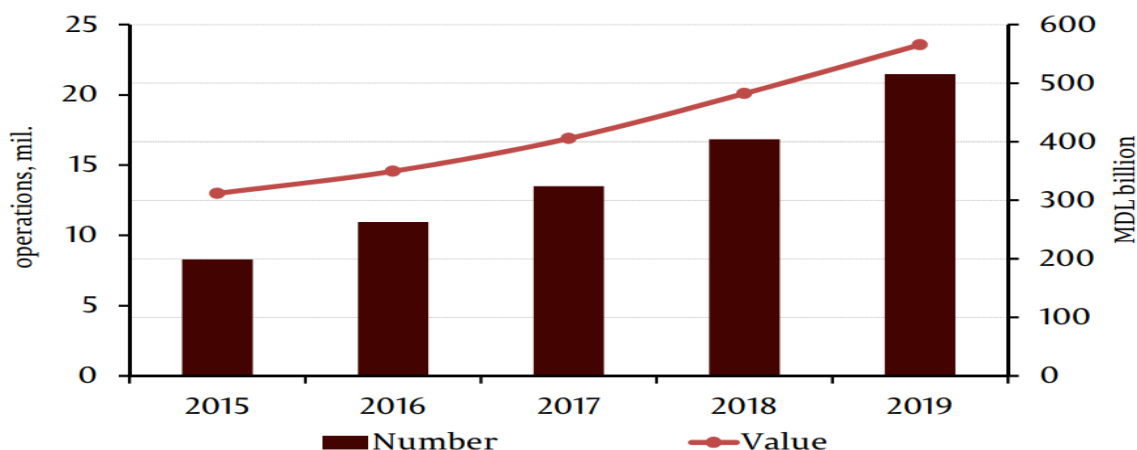


Fig. 7. The number of transactions made through ARSS for 2015-2019

Source: The Annual Report of the National Bank of Moldova. [online]. [accessed on April 21st 2021]. Available: <<https://www.bnm.md/bdi/pages/reports/dsp/DSP1.xhtml>>.

According to the data indicated in figure 8, from the total number of payment transactions carried out through credit transfer initiated by bank customers (19.3 million transactions), 74.4% were initiated in electronic format through ARSS.

Over the last 5 years, this indicator has improved from 48.0% for 2015 to 74.4% for 2019, which means an increase in the digitization level of payment services in the Republic of Moldova. Also, in relative terms, the number of electronically initiated credit transfers grew by 24.0%, compared to the previous year while the number of paper-based decreased by 2.8% compared to 2018. At the same time, the value of operations carried out by credit transfer initiated by the clients of the banks reached the amount of MDL 502.8 billion, of which 69.8% were made in electronic format, and 30.2% on paper.

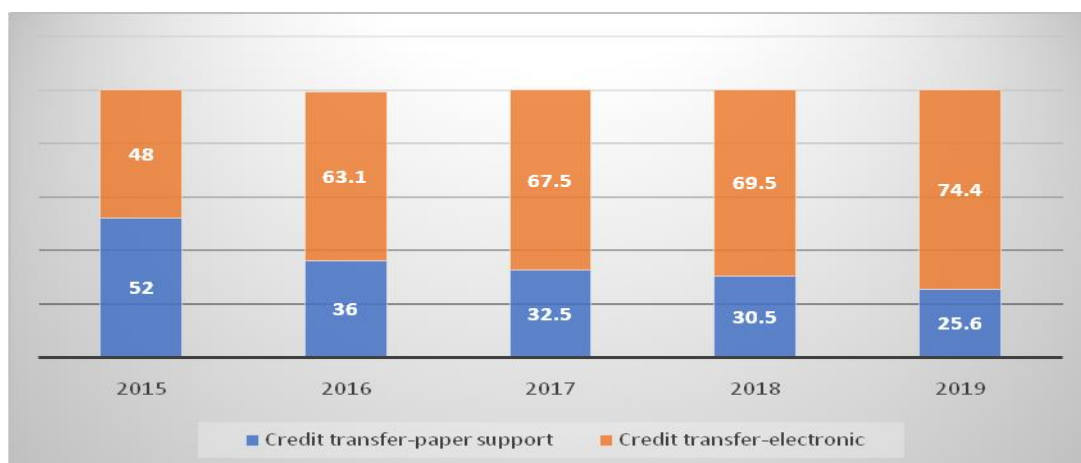


Fig.8. The number of credit transfer transactions for 2015-2019 (in %).

Source: Elaborated by author based on the Annual Report of the National Bank of Moldova. [online]. [accessed on April 21st 2021]. Available: <<https://www.bnm.md/bdi/pages/reports/dsp/DSP1.xhtml>>.

During 2019, 130.7 thou. direct payment transactions were executed in a total amount of MDL 67.1 million, increasing in number by 28.7% and in value by 57.9%. The total number of users of this payment instrument constituted at the end of 2019 about 8.4 thousand, twice more compared to the previous year.

Innovations are unanimously considered the promoter in the development of the banking system, because any implemented technology brings domestic banks as well as its customers closer to the international standards, which must be respected in order to successfully participate in global financial and trade relations. At the same time, several specialists identify challenges, which impact the effort of banks to implement innovative management and marketing technologies or practices and these challenges are:

The instability of the banking system is the most pronounced negative factor of development innovations of the Moldovan banking sector.

The customers 'distrust in the banking sector is the inherited element of the relationship between commercial banks and its customers, and the bankruptcy of the last three banks (B.C. "Banca de Economii" S.A., B.C. "Banca Sociala" S.A. and "Unibank" S.A.) caused by a bank fraud, had a significant negative impact on credibility of domestic banks.

The legal framework restrictions. The first critical confusion is about the Data Protection law 133/2011 and the definition of "user consent." Can be found inconsistencies between how regulators interpret the law versus how businesses interpret them. The result is that consumers in Moldova have to go through an additional and unnecessary step of "signature" even for small essential online purchases when in the rest of the world, a simple click or checkbox is enough to confirm the consent and purchase. The Data Protection agency's interpretation is that user consent is almost "always" required. If given in an electronic form, then it has to be done exclusively using a digital signature.

Customer Identification. Should be highlight another critical inconsistency that should be addressed urgently, especially in the pandemic context. E-merchants and e-services providers may never need to meet their customers physically. A distant relationship is the essence of e-commerce or digital channels, bringing speed, efficiency, and reduced costs. During pandemics, E-government and G2C need to maintain services without the consumer being physically present. Under such circumstances, being able to verify a person by distance is the ultimate necessity without which no service can be rendered online. Nevertheless, according to the OPCML, Distant Customer Identification is not allowed.

Low level of digital literacy. Digital literacy means creating infrastructures that allow access to the Internet in all schools, creating and learning from new generation books - digital books, learning how to make connections between knowledge, between people from different parts of the world and generate new knowledge in the online area. The Republic of Moldova, as well as all countries over Europe, faces with increasing ICT skills gap and with a low level of digital literacy. These drawbacks caused by the insufficient use of Information Society advantages and even the removing of many citizens from ICT-based society and economy. On the other side, although citizens own computers and are Internet users, many of them do not know the ICT (Information and Communication Technologies) terminology, not to mention

the adequate use of the outcomes offered by them. Since a large part of population does not possess the necessary learning traits, knowledge and digital skills throughout their lives, that have become nowadays something ordinary for many countries population, it reduces the opportunities to participate in the global digital economy. Also, a large part of population from rural area does not possess the necessary learning traits, knowledge and digital skills throughout their lives, that have become nowadays something ordinary for many countries population, it reduces the opportunities to participate in the global digital economy. Digital literacy of the population starts from the general education system and mainly due to:

1. Curriculum adjusted to the needs of society;
2. Well trained teaching staff;
3. Integration of information technology in the didactic process.

Even though, during the previous years have been undertaken the efforts by the Government in order to implement ICT in general education (800 computer classes in 1997, the "SALT" program, funding to open at least one computer classroom in every school, the broadband Internet access and procurement of didactic software), they are not completely integrated into the educational process. While equipping level of general educational institutions rose, there is a lack of management, maintenance and budgeting for computer labs and most software are not provided with license, at the same time open software sources are poorly used. ICT curriculum is outdated at some sections and there are no procedures for its regular update. Graduates from educational institutions do not possess sufficient practical skills to work in an information society. There is a shortage of qualified staff: half of all teachers of computer science have appropriate education and only 3 out of 10 of them studied computer science.

Most of the staff that teaches computer science and other disciplines have never attended training courses and have not acquired teaching degrees. Although some universities have implemented electronic management systems for certain processes and issued electronic course, because of the pandemic situation in 2020 has approved regulatory framework for distance learning. Although the Academy of Public Administration uses Methodological Norms for ICT training and online training tools developed with the support of UNDP. These instruments have not been used widely because there is no express provision in regulations that would require digital skills for employment in a public institution.

As the ICT industry develops further every year, educational institutions have been making great efforts in aligning their curricula with the market trends and teaching students the most in demand skills. Top universities have been successfully partnering with private companies, to be able to provide the newest technologies to students, access to employment opportunities, etc. There are now over 100 schools throughout the country that teach children robotics courses, as part of a nationwide effort led by the Government for increasing digital literacy. Other courses cover virtual reality, 3D printing, and others. It is important to note that the ICT sector has started to develop also in other regions than Chisinau (the capital city), such as Balti, Comrat, through small local start-ups. A digital innovation centre has just

opened in Balti, which will become a regional hub for the local IT community and a platform for attracting young people into this industry³.

The protection of consumer's rights remains another issue to be addressed, even if Moldova has made significant progress with the civil code's latest amendments. After amending this law and introducing a wide range of protection tools, the Law no. 105/2003 on consumer's protection was not yet adequately amended. For example, the consumer's right to revoke a contract prescribed in the Civil Code is not updated in Law no. 105/2004. According to the Agency for Consumer Protection and Market Surveillance, as much as 80% of the merchants do not offer any information on the consumer's right to revoke a contract. Nor do these merchants provide information on the time and the process to revoke a contract.

At the international level of compliance, e-commerce services providers rely exclusively on the official national company register to verify information about Moldovan companies and their ultimate beneficiaries. The Moldovan company register has been recently updated and has made significant progress. However, should be highlight two remaining bottlenecks, that if addressed, could facilitate cross-border compliance for Moldovan SMEs:

- The company register website does not have an SSL Certificate and does not provide assurance that it belongs to an official government institution and can be trusted.
- Moldovan company data such as registration number and date and the list of directors and shareholders are not available in an immediate, secure, and trusted format.

However, there are a lot of projects that has been implemented and will be implemented due to the collaboration of NBM with IT companies. Following the detailed action plan approved for this purpose, during 2019 about 15 of the 21 strategic initiatives were requested.

In addition to major projects at the level of the NBM, needs to be underlined some of the initiatives of digital transformation of the institution, such as:

- implementation of electronic interaction flows with the e-invoice service;
- extension of the number and sources of documents that are electronically archived in the NBM;
- initiation of the modernization project of the internal electronic document management system;
- others.

At the same time, a number of projects were initiated in order to strengthen the information security and cyber protection capacity of the NBM. For example, these projects aim to strengthen protection measures at the level of the system for international transfers through the SWIFT network, improve the level of protection through multifactorial authentication at the level of the NBM Information System, maximize the security level in the NBM relations with third parties serving the institution's IT systems. Also, in order to meet the development needs of the institution, several important projects have been carried out to strengthen the ICT infrastructure of the NBM, which have brought important improvements in terms of performance and resilience capabilities, which are imperative to ensure quality,

³Invest Moldova Report 2019: ICT and BPO Sector Overview. [online]. [accessed on April 30th 2021]. Available on: <https://moldovaitpark.md/wpcontent/uploads/2019/09/2019_ICT_and_BPO_overview_Brochure.pdf>.

security and the continuity of the provision of ICT services, critical for the country's financial sector.

4. Conclusions

Compared to banks from EU countries and digital banks, banking sector from the Republic of Moldova lacks strong performance and differentiators in terms of online services. Because the facilities of the digital banks will continue to grow, banks have to adapt their services to remain competitive with these kinds of competitors. There is currently a number of features existing and not implemented by retail banks in the Republic of Moldova. Innovation being at core of fully-digital banks' business, the gap is expected to widen if retail banks do not react with an appropriate digital strategy.

Despite the existing challenges, Moldova has significant potential for becoming an innovation-driven economy. The country is currently ranked 58th among the 129 countries surveyed by the Global innovation index in 2019. Moreover, Moldova is ranked in 81st place for enabling environment and inputs, but Moldova has succeeded in climbing to 45th place for the output results of the innovation sector, being among the countries with best conversion indexes of input into an output. An increase in the resources and implementation of fiscal facilitation and support can bring good results in the research and innovation sector. The leading sectors are nanotechnologies, materials development, pharmaceuticals and biotechnologies.

Government has to find a way to drive economic growth rapidly through e-commerce, as one of the options. Furthermore, a digitized and modern economy will also help the country get closer to the desired European Union integration, boosting trade, and economic development. The following recommendations for the development of digital banking system of the Republic of Moldova can be proposed:

- the obligation to perform penetration tests and the need for periodic submission by payment service providers of the audit report in order to assess the security of ARS systems by the National Bank should be introduced for Automated remote service systems already registered and launched in the production environment;
- adoption of the possibility of client identification remotely, for example, through the tier-based simplified customer due diligence (CDD) model;
- adoption of biometric recognition to identify and reach beneficiaries;
- allowing customers to provide their digital signatures to open low-value transaction accounts and send or receive transfers has the potential to increase both ease-of-use and compliance costs;
- accompany the digitization efforts with adequate financial consumer protection measures: Whether related to payments, transfers, credit or savings, any policy or programmatic effort to foster the digitization of financial services should be accompanied by substantial government-led interventions aimed at strengthening financial consumer protection, which are fundamental to promote trust in, and uptake of, such services among the general population.

Meanwhile, although online banking is increasingly important to a growing number of customers, banks must continue performing well face to face. Simply offering digital solutions does not truly differentiate a bank from its competitors, as every bank is now

providing online services. In particular in the case of more complex services and advice, many customers still want personal in-branch consulting and service. Banks can continue to focus on specific customer segments and offer wholly online banking for those customers who is willing it, but any bank that wants to expand its customer base beyond “digital natives” can offer a hybrid service – a mix of online and in-branch services. The online and in-branch elements of such hybrid solutions must function seamlessly. And particularly for higher-income customers wishing to perform more complex transactions, this could enable banks to deliver a high added value.

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