DIGITALIZATION AS A DRIVING FACTOR IN THE TRANSFORMATION OF BUSINESS PROCESSES IN THE BANKING SYSTEM

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Abstract:

In recent years, the banking business has undergone significant transformation under the influence of the digitalization of the environment and business. Banking products and services, driven by new economic phenomena and information technologies, are changing and modernizing. The issue of an effective path for the development of the banking system has become particularly relevant in the context of the rapid digitalization of economic activity. The application of modern technologies by banks fundamentally contributes to reducing costs and increasing revenues. The purpose of the research on the topic is to analyze the transformations of the banking business under the influence of digitalization and to identify the most effective ways to ensure the sustainable development of the banking system. This research aims to highlight how modern technologies contribute to the modernization of banking products and services, the reduction of operational costs, and the increase of revenues, especially in the context of the rapid digitalization of economic activity.

Keywords: *digitalization, banking system, banking business*

JEL classification: *G21, L21*

Introduction

Against the background of contemporary trends in the development of the financial sector, the role of digital technologies in transforming key aspects of commercial banks' activities is increasingly emphasized, and in these conditions, the need to increase the competitiveness of commercial banks by enriching the customer experience and optimizing internal business processes is becoming increasingly relevant.

The digitalization of the economy assumes that business processes change in two directions:

– First - all communications are transferred to digital channels for transmitting information;

– Second - total or partial automation of business operations takes place.

In recent years, banking activity has significantly transformed under the influence of the digitalization of the environment and business. The main directions of the transformation of

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banking business are:

a) digitalization (purpose: increasing sales through digital channels);
b) technologies (purpose: restructuring traditional banking functions for the creation and implementation of products and services in the ecosystem);
c) ecosystem (purpose: the commercial bank will act as a new element of the client's lifestyle).

Modern financial technologies have allowed the state, business environment and the population to move to new ways of interacting with each other. Banking information technologies have changed the behavior of the population and the business environment, influencing the development of competitive advantages of commercial banks.

To obtain financial services, customers access financial services through multiple channels and use online platforms to interact with commercial banks, which highlights the central role of digitalization in the evolution of the banking sector.

Until 2019, banks prioritized working on the front-end of banking products and optimizing customer operations. Currently, priorities have shifted toward innovations in the back office, particularly in the development of services, default management, and the digitalization of internal business processes. In addition, for example, corporate lending divisions now have new opportunities to learn from the use of artificial intelligence by fintech companies and from alternative data to make faster underwriting decisions regarding client lending [2, p. 17].

In the context of the intensive implementation of artificial intelligence, blockchain, cloud computing and biometric authentication technologies, the traditional business models of commercial banks are undergoing a significant revision.

Business models describe what value the company is providing to customers and partners and how it is translated into revenue [8]. Business models represent selected pieces of how the company transforms resources and creates relationships among other market participants [1]. Business models are often considered one-page canvas-like sketches describing (new) value propositions, and accompanying and supportive items leading to the provision of crafted value.

Business model innovation means changing one or more of the components of a business model or their interactions [3]. It can be driven by the need to react to a new customer need (customer-led), by innovation or implementation of new emerging technology or mainstream technology in evolutionary state (technology-led), or necessity or need to improve normal workflows and structures that facilitate the workflows (organisational development-driven) [4].

Banks are compelled to adapt to the new realities of the digital economy, where the key factors of competitiveness are service speed, offer personalization, and the ability to integrate into ecosystems.

The scientific problem lies in the insufficient study of the mechanisms underlying the transformation of banking business models and the identification of optimal strategies for adapting to current digital challenges.

The fundamental driver of the transformation of banking business models is the large-scale implementation of artificial intelligence and machine learning technologies. According to expert estimates, global bank spending on generative artificial intelligence systems amounted to approximately 6 billion USD in 2024 and is expected to increase to 85 billion USD by 2030. [10].

Literature Review

Digital transformation represents a complex process of business activity transformation based on the use of digital technologies and involves a fundamental reconsideration of how a commercial bank operates and how it interacts with its environment. The digital transformation process incorporates everything related to the application of innovative technologies in operations, as well as what we call the change of business processes and the methods of implementing products.

The main objectives of digital transformation are:

1. Increasing the quality of customer service;
2. Reducing service delivery times;
3. Reducing costs through automation.

The definition of the essence of digital transformation in the banking system should be considered together with the concepts of:

– digitalization of financial and banking activities (improving banking structures, products, and methods of customer interaction through the use of digital technologies, leading to increased profitability);

– financial technologies (FinTech) (the application of the latest technologies and organizational innovations that allow the provision of financial services at a higher level of utility or, in simple terms, faster, cheaper, and of better quality);

– digital banking (the delivery of financial services via mobile and online platforms, which improves the quality of the bank–customer relationship, saves time and costs, enhances the security of personal data, and improves the speed and quality of services).

The digital transformation of the banking system, taking into account global trends, is developing along the following priority directions:

1. Open banking APIs (in the IT world, an Open API represents the “sharing” of a product’s interface and functionalities with third-party developers, partners, or other actors in the ecosystem. They integrate the API into their services/applications, making them more convenient and functional. Thanks to APIs, it is possible to log in to third-party websites via Facebook, order a taxi based on your geolocation, or make payments in a few steps in online stores. Services integrate with each other, making our lives easier);
2. HR processes in banks and IT staffing;
3. Development of cashless payments;
4. Key aspects regarding the regulation of outsourcing and banking ecosystems;
5. Personal data protection: key aspects and stages for ensuring compliance with regulatory acts.

Digital transformation allows banks to move to a new level of competition: between digital and traditional banks; between fintech companies and traditional banks; and in specific services or processes.

The reason for digital transformation lies in new areas of competition for clients. The emergence of digital banking is a response to changing customer needs: the new client demands a personalized approach and wants to receive attractive offers from the bank not only when visiting its branch but also in their everyday life. Personalized interaction with clients provides banks with unlimited opportunities to attract them, regardless of demographic factors or the level of use of information and communication technologies in the country.

Banks must learn to meet the expectations of clients from different generations, which means they need to align with the current digital expectations of their customers and develop banking and financial services based on their preferences. The implementation of digital innovations leads not only to digital transformation but also to a change in the bank's business model.

In the context of digital transformation, banks face the question: ecosystem or traditional bank?

The business model represents a conceptual description of banking activity. When creating a business model under digital transformation, banks adopt two approaches: the ecosystem approach and the traditional approach.

In the case of the traditional model, banks can also participate in the digital transformation process and implement digital technologies; however, their source of income remains traditional, meaning it generally comes only from banking activities, including both interest income and income from additional financial services. In this case, the way the activity is conducted remains strictly banking.

The ecosystem approach changes the business model, where banking becomes just one of multiple businesses within a broader ecosystem that functions as a platform for various entities. By adopting an ecosystem business model, the bank ceases to be, in the classical sense, a bank and becomes a platform solution that brings together different lines of activity. In this approach, the business strategy changes, and revenue comes not only from banking activities but also from other companies within the ecosystem. Sometimes, banking may no longer be the main source of income for the ecosystem. Thus, in the ecosystem business model, the bank is no longer understood in the traditional sense as a bank but as a platform solution that integrates various areas of activity.

It seems that the bank of the future will offer clients not only financial services. First and foremost, the bank of the future is perceived as a digital ecosystem that will provide both financial and non-financial products. While financial services have so far been the primary focus, in the development stage of banking ecosystems, they will accompany and support the provision of non-financial services. In other words, the bank as a digital ecosystem will be oriented toward meeting all the needs of its clients. There is an approach that considers the bank of the future as a "semantic bank."

One of the leading figures in the fintech directions of banking, in the context of digital transformation, is Chris Skinner, an independent financial markets observer and author of ten books—*The Digital Man*, *Banking in a Globalised World*, *The Digital Bank*, *How to Create a Digital Bank or Become One*. The researcher has been working for over 30 years on the digital transformation of traditional banks and proposes an original project for the future: the "semantic bank."

Skinner believes that, based on fintech products in the field of cryptocurrencies, the semantic bank will be created, which will be the opposite of the traditional bank. The semantic bank will operate effectively within the infrastructure of the three most advanced generations of internet technologies that will emerge in the future:

- Third generation – Web 3.0, Value Web;
- Fourth generation – Web 4.0, Internet of Things;
- Fifth generation – Web 5.0, Internet of Life [9].

Thus, the development of banks' digital ecosystems at the current stage can be considered a strong competitive advantage, allowing the provision of a personalized approach to the client by offering all types of services in a single place.

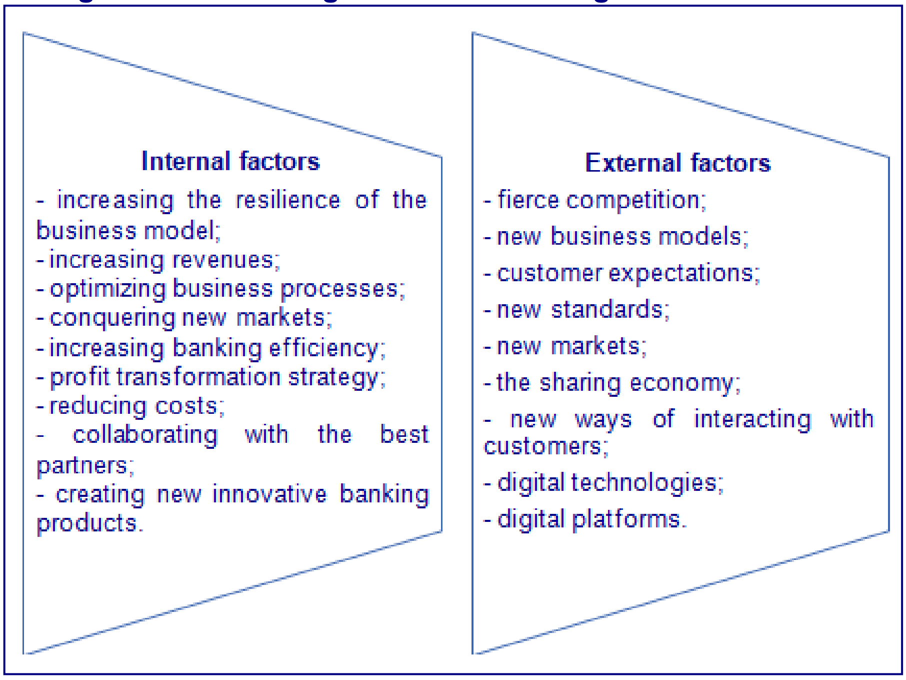
Methodology and Data

It should be acknowledged that the digital transformation of the financial-banking sector does not consist solely in the application of innovative digital technologies by banks, but also in changing the bank's business model from a traditional one to an ecosystem-based model. The development of digital banking ecosystems at the present stage can be considered a strong competitive advantage, allowing banks to offer a personalized approach to their clients by providing, in a centralized manner, all types of banking services needed by consumers.

World Bank experts assume that by 2025, digital banks could completely replace traditional banking institutions in the market, leading to radical transformations in the financial and banking system. It is estimated that the bank of the future will offer clients not only financial services, but also personalized digital solutions, lifestyle support, and integrated platforms that connect financial, technological, and social experiences.. The development of digital ecosystems, and in some cases their integration, leads to a shift in the essence of competition in the markets, which is important for other players who do not possess such digital ecosystems to consider and to respond promptly to their emergence and development.

Any transformation of an organization's business processes affects its business model. Digital processes and their development within a commercial bank must be focused on significantly increasing product value, reducing risks from competitors, and creating or improving the value proposition.

Figure 1: Influencing factors on banking business models



Source: elaborated by the authors

The most important aspect for the modern banking sector, in terms of maintaining customer loyalty and attracting new clients, is the continuous monitoring of customers' attitudes toward existing financial (banking) services and maintaining their interest by implementing new convenient services that differentiate the bank from others. Under current conditions, the efficiency of banking activity is no longer determined primarily by the traditional calculation of profit obtained from the sale of certain financial products, but by customer loyalty and the focus on their opinions and needs, which must be satisfied by modern banks.

Below, in table 1, the five stages of digital transformation in the banking sector are presented.

Table 1: The stages of digital transformation in the banking sector

The stage	Name	Content
The stage 1	Canal digital	Internet banking, mobile banking, chatbots. The user who wants to interact with the bank through any available channel at a convenient time is at the center of the ecosystem.
The stage 2	Produs digital	Big data, contactless payments, virtual cards, artificial intelligence, technology. With the help of modern software, E2E (end to end) products are created, designed to satisfy the financial needs of customers within 24 hours.
The stage 3	The Complete Digital Cycle	Banks are not only adding digital services to traditional products, but also creating new digital businesses, completely changing business models and expanding the boundaries of business.
The stage 4	"The Digital Brain"	The "digital brain" continuously and automatically studies data from all business segments, departments, product lines and services, providing the organization with a deeper understanding of its own capabilities.
The stage 5	"The Digital DNA"	A new coordinate system for making strategic decisions throughout the entire life cycle of the bank.

Source: elaborated by the authors based on the data [8]

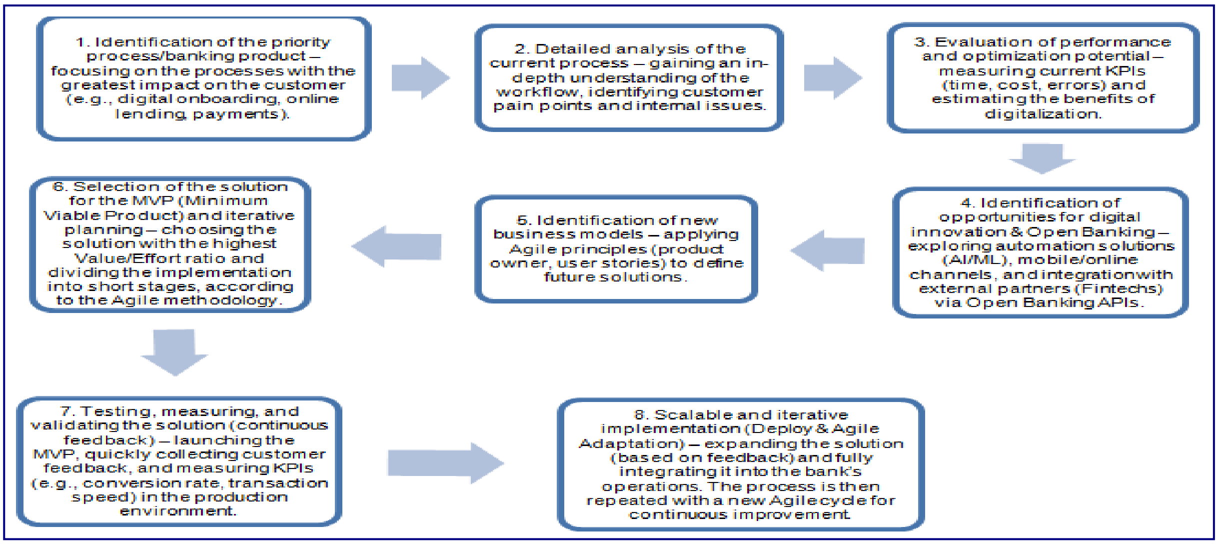
The main trend in the banking sector can be considered the focus on developing operational models, which is reflected in customers' growing desire to access banking services outside of branches – remotely. The implementation of digital technologies in banking activities is becoming a key direction that supports modern trends. These changes contribute not only to improving customer service but also to shaping new approaches to financial management.

As a result of the continuous implementation of digital solutions and financial innovations, there arises a need to create an integrated space that connects the banking sector with the digital environment.

Such an approach allows banks to adapt to rapidly changing market conditions and customer expectations. The digitalization of processes, including the automation of operations and the use of data analytics, opens new opportunities for increasing efficiency and enhancing the customer experience.

In the current context of the financial market, characterized by the continuously growing demands of clients and the competitive pressure from Fintech companies, digital transformation is no longer an option but a strategic necessity (figure 2).

Figure 2: The stages of the digital banking transformation process



Source: compiled by the authors based on the data [4]

The presented diagram illustrates the end-to-end lifecycle of digitalization initiatives within the commercial bank, ensuring a fast, customer-oriented, and flexible approach. This framework integrates three key pillars:

1. Digitalization of banking activities – focusing on automating internal processes and migrating services to digital channels (mobile and web) to increase operational efficiency and enhance the user experience;

2. Agile methodology – adopting an iterative and flexible approach that enables rapid value delivery through the launch of MVPs (Minimum Viable Products). Success is constantly measured through customer feedback, ensuring that the developed solutions meet real market needs;

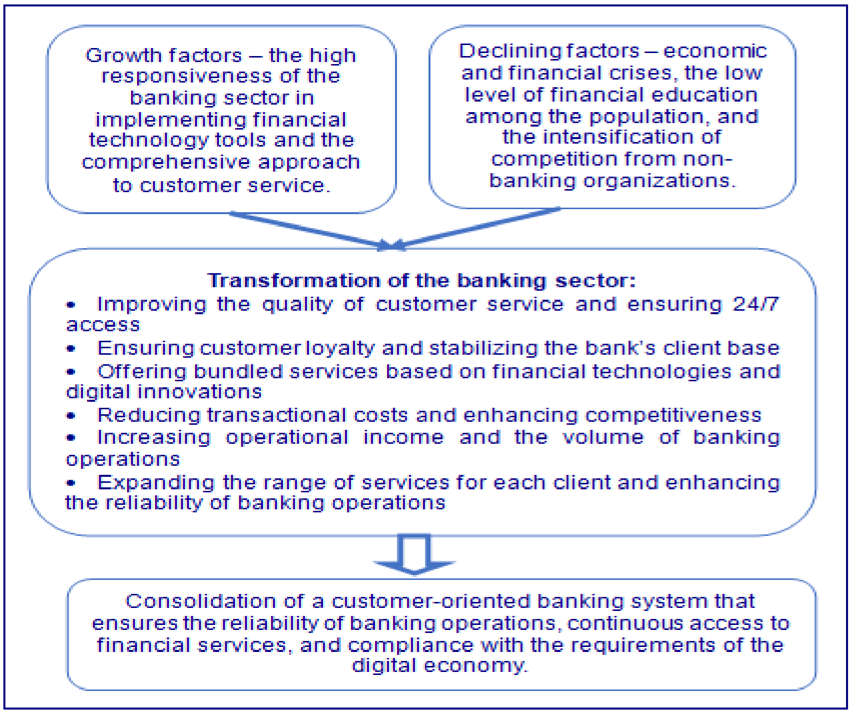
3. Open Banking – proactively exploring PSD2 (or equivalent) standards and APIs to facilitate strategic partnerships. This allows banks to expand their service offerings through integration with external ecosystems, transforming the bank into an open and innovative financial hub.

Each stage of this process, from identifying the priority process to scalable implementation, is designed to maximize customer-added value and strengthen the bank's position in the digital era.

It is important to note that creating a unified space between financial services and digital technologies not only simplifies interactions but also contributes to the development of new products and services that meet the needs of the modern user.

The mechanism reflecting the transformation of the national banking system under the influence of various factors is presented in figure 1.

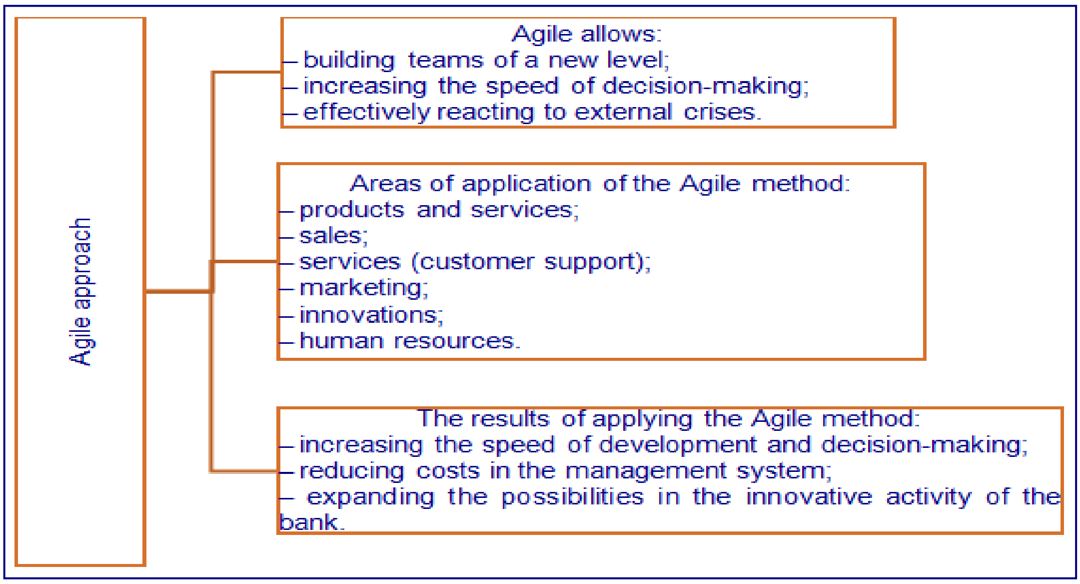
Figure 3: The mechanism for transforming the banking sector with the implementation of financial technologies



Source: elaborated by authors

The Agile model allows the team to perform actions consecutively and ensure rapid implementation. The implementation of the Agile strategy is presented in figure 4.

Figure 4: The steps to follow for the Agile method



Source: elaborated by the authors

One of the pioneers of implementing Agile technology in the Republic of Moldova is BC

"Moldova Agroindbank" SA, which in December 2021 announced its intention to undergo an Agile transformation, a project that is expected to lead to long-term organizational and cultural change and bring tangible operational improvements. An agile model of operations is based on a flatter organizational structure, as opposed to the traditional hierarchical one. The organizational transformation will create a new structure and processes, around which smaller and more agile teams will be able to achieve their goals, supported by the bank's "big picture" strategy. The cultural change will place decision-making authority and responsibility for the final result firmly in the hands of people closer to the customers. The desired outcomes of the transformation will be:

- increasing the speed of change execution through a simplified operating model;
- the ability to better respond and adapt to customer needs;
- increasing productivity;
- increasing employee engagement;
- becoming the preferred employer of talent;
- increasing the ability to deliver higher returns to shareholders [5].

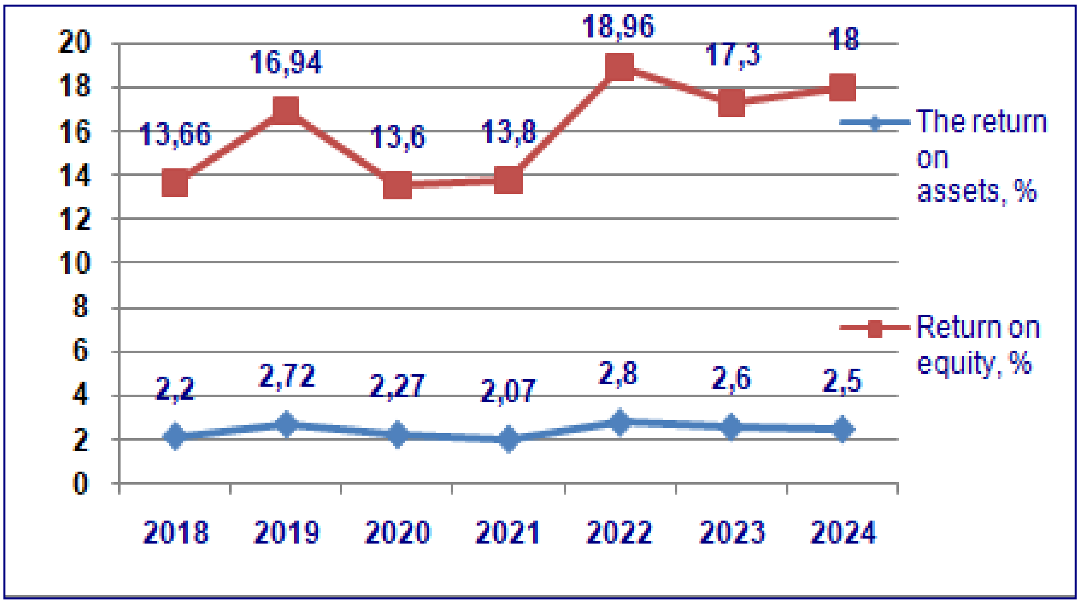
On September 6, 2023, maib announced the launch of the full digital onboarding process, available to Moldovan citizens; a significant achievement in simplifying and facilitating access to banking services. Digital onboarding became possible after a series of legislative changes in the country, as well as thanks to the innovative approach adopted by maib in its mobile banking application. Any Moldovan citizen with a national identity card can now open an account with maib without visiting a branch. This process does not require a digital signature, but is replaced by maib's own Facial Identification and Verification functions. The security measures incorporated into the maibank application compare the user's photo and the government database, allowing for automatic know-your-customer (KYC) verification. This solution received approval after a pilot project that started on July 1, 2023. New customers can benefit from the widest range of services offered by the maibank digital application, as well as some of the most advanced security features. maib's digital onboarding process is by far the most advanced, fastest and most convenient on the Moldovan banking and financial market [6].

For 2024, the bank continued its development by implementing a dedicated widget that allows customers to organize, manage and plan their loan payments more efficiently, offering a clearer and more predictable experience. Maib is the first bank in the Republic of Moldova to integrate 100% digital insurance, such as Green Card, Travel and MTPL. The possibility of exploring and purchasing insurance through maibank is a new step in the development of the service ecosystem around our mobile application, marking the first step towards a digital insurance platform dedicated to maib customers. Policies are always available in the maibank application through the possibility of adding to digital wallets (Apple/ Google Wallet) [7].

The revolutionary factor in the transformation of the banking industry is the implementation of the Open Banking concept, which involves the use of APIs for integration with external services and the creation of personalized solutions for customers. The plans for 2025 propose the development of the open banking service. Customers will be able to link and manage accounts from multiple banks directly in the maibank application, viewing all financial information in one place. They will also be able to initiate payments without resorting to third-party services, ensuring faster transactions with secure authentication and consent protocols.

This is just one example of the active digitalization of the banking sector and the remodeling of business processes to increase banking performance indicators, as can be seen from the information included in figure 5.

Figure 5. Dynamics of efficiency indicators reported by BC „Moldova Agroindbank"SA



Source: elaborated by the authors based on the data [11]

The return on assets (ROA), as observed from the data in Figure 5, shows an increase in the years 2018–2019 and 2021–2022, from 2.2% to 2.72% and from 2.07% to 2.8%, respectively, due to an increase not only in net profit but also in the bank's assets. This growth reflects a positive effect resulting from higher income from services other than placements, which carry a higher degree of risk.

The downward trend of this indicator observed during 2019–2021 indicates that the profit center faced difficulties in generating income due to the Covid-19 pandemic and its negative effects, when a considerable portion of net profit was allocated to reserves. For the years 2022–2024, a slight reduction in the bank's reported ROA from 2.8% to 2.5% is noted, in the context of the bank's intensive development.

Return on equity (ROE) evolves similarly to ROA during 2018–2019, with an increase from 13.66% to 16.94%, reflecting growth in net profit. In 2019–2020, it decreases from 16.94% to 13.6%, due to the differing growth rates of equity compared to net profit during the analysed period. For 2020–2022, a steady increase from 13.6% to 18.94% is observed, reflecting the growth of both elements in the calculation formula. In the following two years, ROE initially decreases to 17.3% and then rises again to 18% by the end of 2024, demonstrating that the bank exercises considerable prudence in its operations.

The development prospects of banking business models are linked to the continuous advancement of automation processes and the implementation of fundamentally new technological solutions. Experts predict that by 2030, the majority of standard banking operations will be carried out automatically, with minimal human involvement. Banks will evolve into technological platforms that provide comprehensive digital solutions for managing finances, business processes, and the everyday needs of their clients.

Results

Banks invest in the digitalization of their processes for the following reasons:

- By transitioning to automated business processes, banks begin to achieve higher profits and become more competitive.

- Banks that undergo digital transformation will be able to expand the range of products and services they offer.

- Bank customers will be able to benefit from services related to telecommunications, education, retail, and healthcare.

- The speed of banking operations will increase.

- To attract new customers and retain existing ones.

Based on the analysis of international experience in the digitalization of banking activities, it is necessary to highlight the most promising directions for the use of digital technologies in the financial sector:

a) the application of assets and smart contracts in the lending process. These processes are based on blockchain technology, which allows consideration of both financial and non-financial assets within transactions.

b) storing credit histories using blockchain technologies. Such a practice would enable the exchange of data regarding borrowers' credit histories without the need for intermediaries to obtain and maintain this information.

c) the use of blockchain technologies for handling bank guarantees and trade finance (such as factoring and letters of credit), as well as for interbank interactions at both national and international levels.

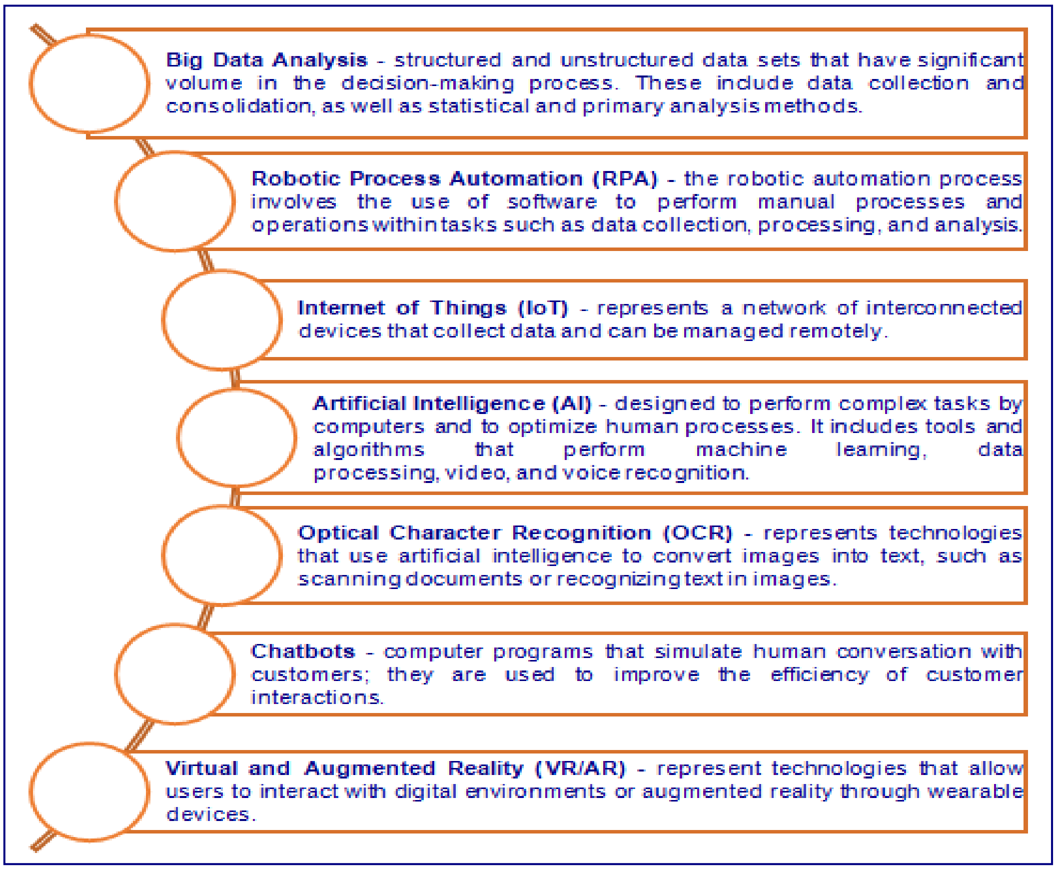
d) the application of digital technologies for operations with bills of exchange. Under current conditions, it is possible to carry out operations with bills of exchange, and electronic documents can be issued in the form of smart contracts. In this system, participants may include the central bank, commercial banks, stock exchanges, and other interested parties.

Digitalization has significant potential to increase the efficiency of all organizations that adopt it; however, this process is also associated with a large number of risks, some of which cannot yet be fully identified or mitigated. It can also be noted that digitalization can substantially contribute to reducing the potential risks of financial activities, due to the use of analytical procedures, information gathering, and the implementation of risk-reduction or prevention measures based on the data obtained.

The big players of the banking sector, in the process of transforming their own business processes, use various modern information technologies (figure 6).

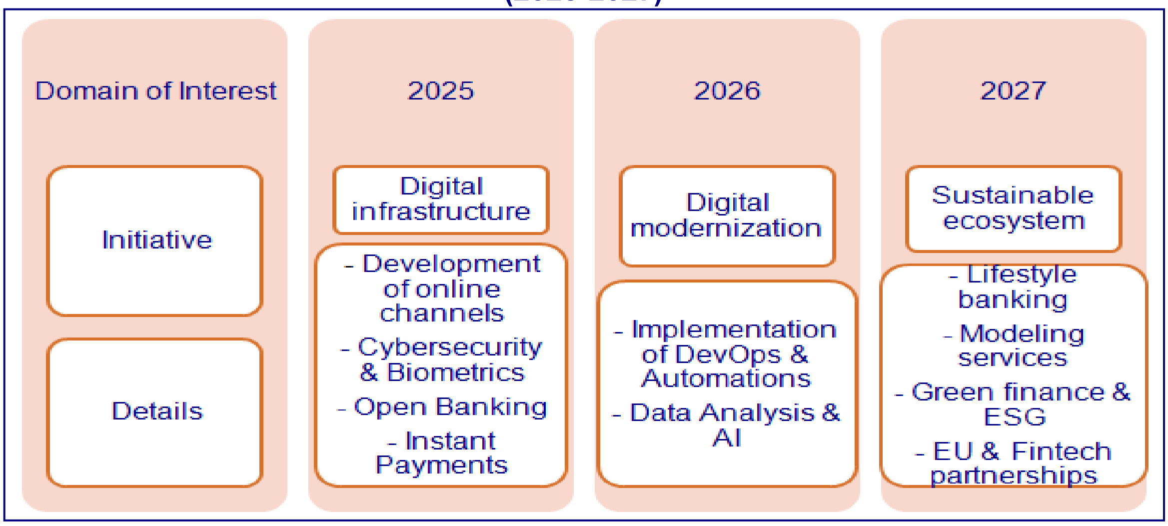
The key direction of business model transformation in the banking industry in recent years has become the formation of its own internal ecosystem, the development of business relationships with other companies, as well as partnerships with IT companies, by creating completely new areas of activity based on the use of cross-cutting technologies, such as blockchain (figure 7).

Figure 6: Technologies implemented by the bank to transform business processes



Source: elaborated by the authors

Figure 7: The evolution of trends in the banking sector of the Republic of Moldova (2025-2027)



Source: elaborated by the authors

The continuous updating and modernization of online applications, as well as the implementation of new technologies, directly influence the competitiveness of the banking system. Through mobile applications, clients can perform remote operations – they can take out loans, manage accounts, open deposits, obtain certificates, statements, transaction histories, and more. Therefore, the convenience of services and applications significantly affects how clients evaluate the quality of banking services.

Thus, the digitalization of the environment and business processes in the banking sector is characterized by the fact that banking products and services are delivered through digital communication channels. The infrastructure of a modern bank is optimized for real-time digital interactions, and the internal culture assumes a high speed of decision-making and implementation of technological changes.

Conclusions

In conclusion, it is necessary to note that the main factors influencing the modern banking sector are the digitalization of almost all areas of social activity and the financialization of the economy, which represent objective processes of contemporary societal development. These trends are becoming dominant for the banking sector, subsequently determining its direction of development in the future.

The main advantages of implementing information technologies in banking activity are primarily related to:

– the possibility of performing banking operations 24/7;

– the reduction of operational expenses;

– the decrease in the time required to carry out financial operations and provide banking products;

– the increase in calculation accuracy and the reduction of risks related to reporting data distortions;

– the more convenient use of banking products and services;

– the reduction of customer service costs in bank branches;

– the ability to quickly launch banking products and services on the market, as well as to access services through a single interface.

The digital transformation of banking business models in the Republic of Moldova is characterized by a systemic nature of change that affects all aspects of financial institutions' activity — from technological architecture to the principles of customer interaction.

Banks are evolving from traditional financial intermediaries into providers of complex technological ecosystems that integrate a wide range of digital services. The regulatory support provided by the National Bank of Moldova for innovation — including the development and implementation of digital technologies, opens banking systems, and biometric payments — creates favorable conditions for deepening digitalization processes.

The success of this transformation is determined by the banks' ability to comprehensively adapt the technological, organizational, and cultural aspects of their activity to the requirements of the digital economy.

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