THE TRENDS IN THE EVOLUTION OF DIGITAL BUSINESS MODELS IN THE BANKING SECTOR IN THE CONTEXT OF INDUSTRY 4.0.

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Abstract:

The transition to the digital economy and its impact on the banking sector is perceived ambiguously by both academic and business circles. The very possibility of digital transformation of the banking business model, in order to maintain its market position (let alone increase or strengthen it), requires reshaping the boundaries of accessible information for external agents, which carries numerous hidden threats and security risks to the entire architecture of the bank's business model.

The purpose of the research on the topic is to analyze and evaluate how the technological transformations brought by Industry 4.0 influence digital business models in the banking sector. This research aims to identify the main trends in the adoption of digital technologies, examine their impact on the operations and competitiveness of banks, and explore the opportunities and challenges faced by financial institutions in the process of digitalization.

Keywords: *digital economy, banking sector, digital business models, digital transformation*

JEL classification: *G21, L21*

Introduction

Today, the banking sector, like other branches of the economy, is actively advancing digitalization: artificial intelligence technologies are being deployed, robotic chatbots are being created and remote identification methods are widely used. In addition, in the banking services market, despite the tightening of central banks' policies in different countries regarding capital adequacy and liquidity of commercial banks, competition is becoming fiercer every year.

The banking system is one of the most receptive sectors of the national economy to the implementation of innovations and application of new digital solutions. This is determined by several internal and external factors. Internal factors include:

- The steady growth of cashless payments globally and in the Republic of Moldova, the use of cashless payments has seen a significant increase in recent years. According to a report in 2024, in 2023, each citizen made, on average, 54 cashless payments, compared to just 8 payments in 2017. However, over 30% of Moldovans do not use bank cards due to distrust of banks and preference for cash [22];

- Developing competition on the payment services market from non-bank organizations.

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External factors include:

- Steady growth of the global digital banking market (globally, the market for digital banking platforms is growing. Its size is projected to reach USD 11.5 billion by the end of 2024 and continue to grow to USD 31.3 billion by 2033, at a compound annual growth rate (CAGR) of 11.7% from 2024 to 2033 [23];

- A steady increase in the number of users (in terms of the number of digital banking users, it is expected to exceed 3.6 billion globally by 2024, up from 2.4 billion in 2020, representing a 54% increase [24]).

- The COVID-19 pandemic has also accelerated demand for remote financial services. According to data from Fidelity National Information Services (FIS), since April 2020, the number of new unique users of mobile banking apps has increased by 200% and traffic has increased by 85%.

These trends indicate a growing adoption of digital banking services both globally and in the Republic of Moldova, although challenges still exist related to consumer trust and cash preference.

The expansion of digitization of banking services is also being driven by the trend towards personalized banking. On the one hand, personalization is today a key competitive advantage for modern banks, which focus on meeting the unique needs of their customers. On the other hand, the personalized approach in the banking segment is an appropriate response to the economic and psychological expectations of banking consumers. These expectations are linked, firstly, to the increasing wealth of the population (according to IMF and UN data, by 2025 income is expected to increase by 3.0-10.0%, depending on the region), secondly, to the growing number of the middle class - the main driver of innovations for individuals (according to WorldDataLab, by 2030, the global number of the middle class will reach 5.3 billion people), and thirdly, to the changing personal motives for organizing financial services according to individual lifestyle and needs (life-style banking) [12, p. 14].

All this creates favorable conditions for the development of personalized digital services in the banking sector, taking into account the national characteristics of the transition to Industry 4.0.

In this context, the assessment of the banking business according to the transition to Industry 4.0 will ensure not only an increase in the number of customers served, but also in the range of digital services provided through high-performance digital models. Commercial banks are ready to implement new techniques and technologies to optimize their business, with a priority on ensuring customer satisfaction and recording increasing performance indicators.

Description of the problem

The research problem is to identify and analyze the main directions for the evolution of digital business models in the banking sector, given the challenges and opportunities generated by the technological transformations of the Industry 4.0 era. In a context characterized by accelerated digitalization, artificial intelligence, big data, block chain and other disruptive technologies, banks are under constant pressure to adapt and innovate.

Researchers in the field have analyzed both theoretically and practically how to shift to digital business models not only in banking, but also in other important areas of the economy. At the same time, the issues related to the formation and development of digital business models for banking have been little studied in the national and international literature, which was an additional motivation for the authors to investigate this scientific field in more detail.

In this context, banking services should be understood as the existing electronic customer service and support technologies available to customers, such as internet banking, mobile banking, virtual account in electronic payment systems, online banking and others.
The clarification of the categorical apparatus will focus on the analysis of the business model approach, and then the various approaches to the content of the concept of "digital banking business models" presented in the literature will be systematized (table 1).
Among the definitions of the business model concept, two groups can be distinguished:
- In the first group, the main focus is on the value created for customers, i.e. what and for whom we create and whether it is possible to realize this value for the consumer with profit for the company;
- In the second group, the focus is on internal processes: how we create value for customers (operational processes, process executors, their hierarchy and areas of responsibility).
In the first group, the definition of the business model is closely linked to the value creation chain, and the key characteristic of the model is monetization. Is the business model capable of generating significant value in the eyes of customers, does this value exceed the cost of its formation in the business and delivery to the customer?
In the second group, the definition of the business model is closely related to business processes, and the key characteristic of the model is operational efficiency. Is the company able to reduce costs through the management models and technologies developed?
Both approaches are also linked to the company's strategy: how the company's work is carried out and by what means its objectives are achieved.
The concept of business models is intended to describe the business in detail, so that the key moments of the business are clear, but without details and specifics that are specific to a concrete implementation and lack the necessary degree of generality: detailed enough to be a tool for business modeling, but not so customized that the template is difficult to use for adaptation to a concrete business idea.

Table 1.

Conceptual approach to the notion of "digital banking business model"

The author	The concept
1. Amit R., Zott C. [1, p. 43]	Maximizing the full potential of digital technologies for the implementation of banking products and services exclusively in a remote format
2. Burmeister C., Lüttgens D., Piller F. [3, p. 67]	Large-scale transformation of the architecture and infrastructure of banking business processes of product (service) provision to the client, when his communications with the bank take place in a virtual environment
3. Parker J., Van Alstine M., Choudary S. [15, p. 145]	A new organization of banking service, which allows to increase the productivity of all bank systems and personalize the product (service) taking into account the client's wishes.
4. PWC Analytical Reports [7]	Format of bank work based on the use of social, mobile and other digital technologies in order to reduce operational costs and personalize banking services to increase its own competitiveness.
5. Uddin M.H. [20]	strategy for integrating the potential of digital technologies into the bank's financial products and services to generate economic value added.
6. Ghauri F.A [9]	Fundamental reorganization of the bank's business model to ensure its competitiveness in the new conditions of market structure and business behavior paradigm.
7. Tripathi S. [19]	The process of forming a new organizational, legal and economic structure in which private and public commercial interests are realized in a seamless information space.
8. Jibril A.B. [11]	Some ‘agreement’ of market space subjects on the transfer of business processes into a virtual environment, where products and services are designed to meet the needs of a particular customer, taking into account the principles of smart manufacturing.

Source: elaborated by the authors based on the information mentioned in the table

Summarizing the material presented in table 1, we propose our own interpretation of the concept of "digital banking business model" - it represents a way of digital interaction of the bank with its customers, oriented towards the creation of new values through the use of the

latest digital technologies in a virtual mechanism of creation and promotion of personalized banking products and services.

In our opinion, this interpretation synthesizes all the modern laws and trends of digital banking development, both in the Republic of Moldova and internationally.

As Matt, Hess and Benlian note, digital transformation is best accomplished in a cross-functional way within individual structures. It's about ensuring alignment and standardization of practices within the business to streamline communication, collaboration, and support brand image and corporate cohesion. The authors identify four dimensions common to most - if not all - digital transformation strategies:

1. Technology use: The company's attitude toward new technologies and its ability to use them.

2. Changes in value creation: The impact of these digital tools on the value creation chain of the business and its core activities.

3. Structural changes: These are the foundation of the actions and processes of the business and therefore need to move towards digital transformation.

4. Financial aspects: These are the driver of digital transformation and also act as a barrier. In any case, they need to be considered as the foundation of digital transformation [13, p. 339- 343].

The authors illustrate the interplay of these dimensions as a successive transformation of the financial aspects, closely linked to value creation and business structure, which need to change to enable the digital transformation and the use of technologies.

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The content of the "Industry 4.0" concept can be represented in the following diagram (fig. 1).

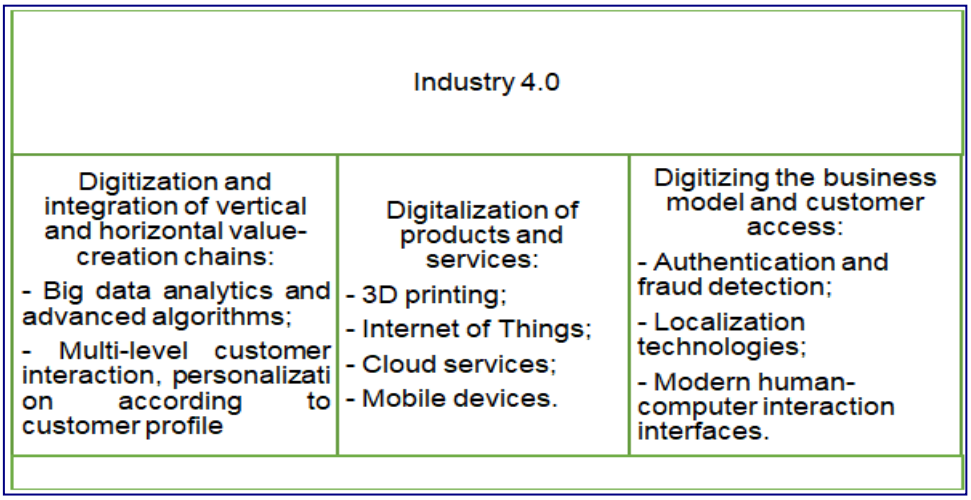

Figure 1. The content of the "Industry 4.0"

Source: elaborated by the author in according with 14

Thus, an important feature of the banking system in terms of delineating its stages of incorporation into the digital economy is the inseparability of digital technologies in banking business processes. Thus, the first mention of "Industry 4.0" as an evolutionary stage of the world economy belongs to the American computer scientist N. Negroponte, but the genesis

of digitalization must be sought much earlier [14].

According to I. A. Sedyh, the first successful example of the digitization of banking services is the creation of a functional ATM of Barclays Bank in London in 1969, which laid the foundation for the development of a new segment of the banking market - card-based banking products. In 1970 in the United States, Bank Americard was issued, which later became the international Visa International system [17].

The second stage is considered to be the period between 1980 and 2000 when the "customer-bank" remote banking methodology was formulated, which is, in fact, the foundation for contemporary digital solutions and services.

The third stage can be identified as the period between 2001 and 2010, when the previously created "client-bank" platform was actively supplemented with various services and products.

From 2011 to the present, we are witnessing the era of open banking, which gradually forms extended digital spaces, involving more and more representatives of the non-financial sector in thematic partnerships: businesses in the FMCG, HoReCa, airline, taxi (the most common examples), which come under the interest of leading banks most often.

The COVID-19 crisis of 2019-2020 has become one of the most active catalysts in the entire history of remote banking development and has rapidly spurred the development of banking services, prompting a review of traditional strategies and models of communication with customers. It is important to note that even today, the effect of a brief launch persists, and in the next 2-3 years it will be one of the main factors of smart development of digital banking in the world and in the Republic of Moldova.

The critical analysis of scientific and applied researches of the definitions presented in Table 1 allowed establishing that the attempts to methodologically order the processes of development and implementation of innovations in the business models of the banking sector originated in the 70s of the XX century. Overall, the evolution of the stages of transformation of business models in banking is presented in figure 2.

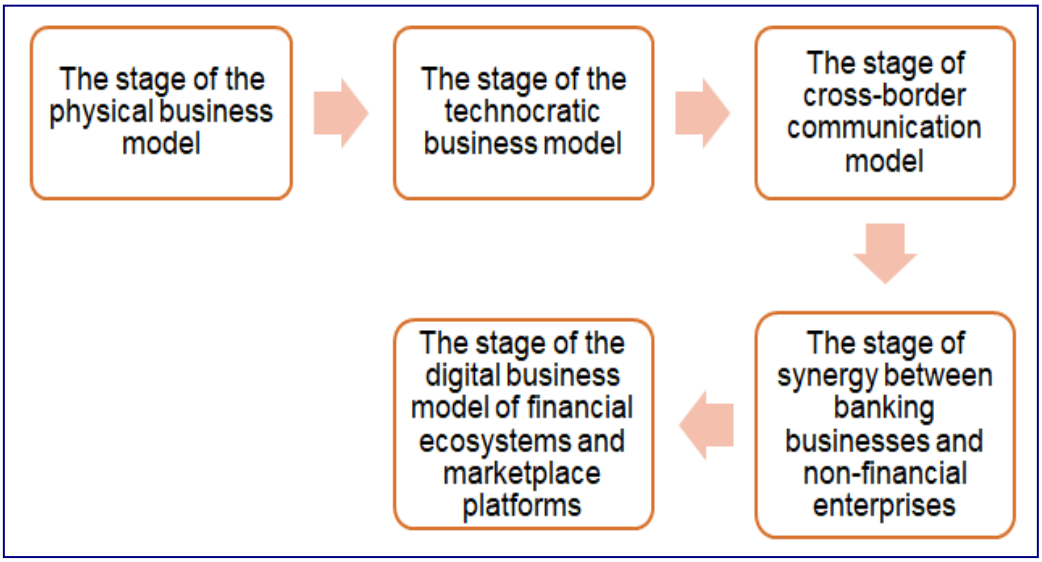

Figura 2. The evolution of the stages of transformation of business models in banking
Source: elaborated by the author in according with 10, p. 73

As can be seen from Figure 2, the shift from the physical to the digital business model has been achieved in a fairly short period of time, and the last few years demonstrate an almost phenomenal development of the banking business towards digital optimization and personalization of the virtual bank-customer interaction.

Today, the central issue for commercial banks is how banks can redefine their business models to remain competitive, respond to growing customer demands and meet changing regulations, while effectively integrating new technologies. Of course, it is not easy to deploy powerful digital technologies without a coherent legal framework, the necessary tools and customer feedback to transform habits that have been formed over years. However, both banks and customers recognize the need to change and align the spectrum of banking services and operations to the standards dictated by the ultra-fast advancing technological innovations.

The main signal for the revolutionary transformation of banks' business models in terms of organizing and promoting banking services to retail and corporate customers was the adoption in September 2015 by the UK banking regulator of the initiative to transition to the application of open API standards (developed by the Open Banking Working Group [16, p. 22]). This allowed banks to use customer data from other institutions, subject to privacy policy requirements, to improve banking services and proactively respond to changing customer needs and requirements. We emphasize that as of 13.01.2018, the implementation of the Open API standards in the UK became mandatory for the country's 9 largest banks [21, p. 80].

Separately from the UK, in January 2016, the European Union Payments Directive, PSD2, was adopted, which gave the customer the right to pass on financial transaction management rights to third parties based on the Open API standard [16, p. 23].

These two events marked the bifurcation point in the development of banking services: everything that was in place before the adoption of the Open API standard was called traditional remote banking, and everything that emerged afterwards - digital banking. The substantive and methodological differences between traditional remote banking and digital banking are presented in more detail in table 2.

Table 2.

Comparison of traditional remote banking and digital banking

Criteria	Traditional Remote Banking	Digital Banking
Chronological Stage	? – 2015 (for the EU – 2018)	2015 (2018) – present
Business Model	Rigidity (a vertically structured system created by the bank based on its portfolio of services and products)	Customer-oriented (banking is a flexible system that quickly responds to customer needs and adapts to their behavior)
Main Source of Information	Client's personal data, which constitutes banking secrecy	Open data about the client, Big Data on their transactions, information from social networks and thematic discount cards, accessible to a specific circle of people designated by the client
Service Implementation Tools	Package solutions or strict pricing plans set by the bank and offered to the client (modifying their functional composition is usually difficult)	Marketing and behavioral tools (software products are intelligent and capable of self-adaptation based on customer behavior, lifestyle, and professional preferences)
Bank's Revenue Source	Commission for performing certain transactions using the bank's infrastructure	Commission for managing the client's personal data and ensuring the cybersecurity of their online interactions
Banking Service Format	Physical orientation: Services rely on the bank's own infrastructure and specialists (the same service may vary in quality depending on the bank's specialists' expertise)	Virtual orientation: Open infrastructure solutions where the client receives an almost identical service in terms of quality and security, regardless of the bank
Competition & Customer Acquisition Tools	Price-based: Banks offer flexible tariffs, discount schemes, and loyalty programs to attract customers	Technology-based: Banks attract customers through convenient, accessible solutions and a wide range of personalized financial tools

Source: compiled by the authors based on the data [2, pp. 213–215].

The information summarized in table 2 allows the conclusion to be drawn that digital banking is a new technical and functional construct, which is, in fact, a free-builder for the formation of single financial markets, taking into account the needs of a specific retail customer or corporate business requirements.

Methodology and Data Sources

To assess the extent of digital banking development as a key product of the fintech market, we will present the dynamics of its penetration into the banking systems of the world's major geographical regions (fig. 3).

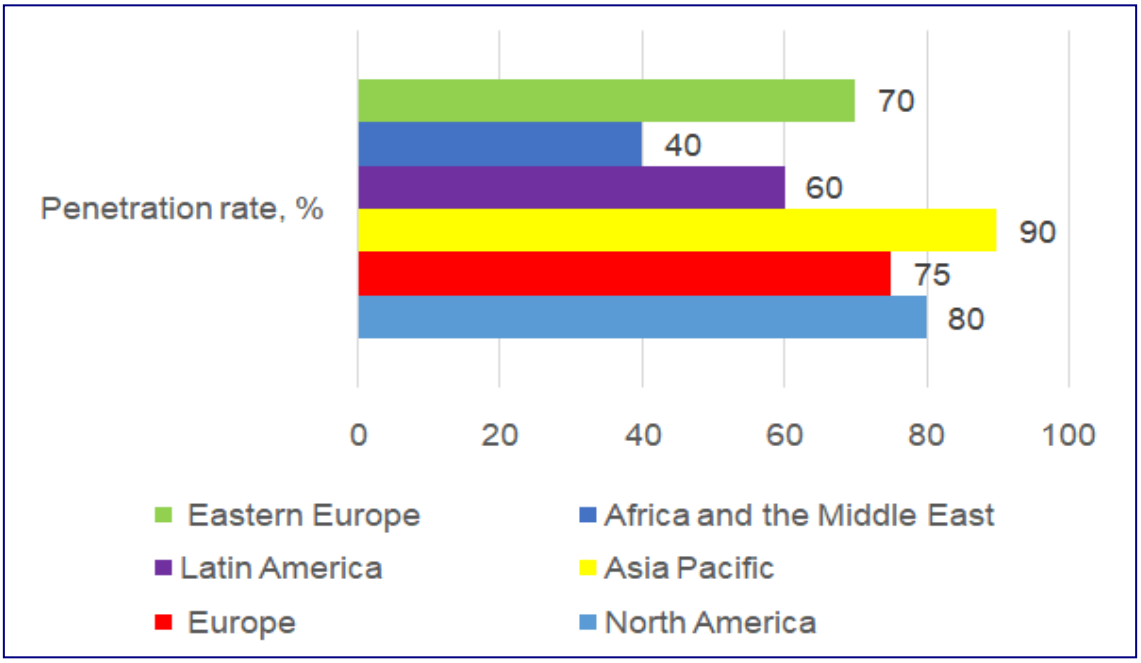

Figure 3. Evolution of the digital banking penetration rate by geographical regions

Source: author's elaboration based on data from 4, 5, 6, 8, 21

The dynamics of digital banking penetration in 2023 reflect the accelerated growth of the FinTech market, driven by the rapid digitalization of financial services and the widespread adoption of advanced technologies worldwide. Regional differences in the adaptation and integration of digital banking as a key product of the FinTech market are determined by economic, cultural, technological, and regulatory factors.

Thus, for North America [4], the penetration rate is one of the highest in the world, with over 80% of consumers using digital banking services, particularly mobile apps and online platforms. The key factors driving this evolution are:

- An advanced technological ecosystem
- Strong FinTech players such as PayPal and Stripe.
- Consumer preference for quick and easy-to-use solutions.

For Europe [21], the penetration rate ranges between 75%-80%, with variations between Western and Eastern European countries. The generating factors include:

- The implementation of PSD2 regulations and the promotion of open banking.
- A focus on instant payments and cross-border solutions, especially in the Eurozone.
- Increased use of digital wallets and mobile banking apps.

In the Asia-Pacific region [18], the penetration rate exceeds 90%. Active users include countries such as China, South Korea, and Singapore, while India is experiencing rapid growth. Key influencing factors are:

- The dominance of FinTech platforms like Alipay, WeChat Pay, and Paytm.
- Massive investments in digital infrastructure and the rapid adoption of 5G.
- Financial inclusion through mobile technologies.

In Latin America [5], the penetration rate is approximately 60%, but with accelerated growth in recent years due to investments in FinTech, driven by:

- Limited access to traditional banking services for a large portion of the population, favoring the use of digital solutions.
- Increased smartphone usage and internet connectivity.

For Africa and the Middle East, the penetration rate varies between 30%-50%, but with enormous growth potential [8], explained by:

- Mobile technologies transforming even rural areas, with solutions like M-Pesa in East Africa.
- Urban youth representing a solid base for the adoption of FinTech solutions.

Eastern Europe is also catching up, with a penetration rate of around 70%, though lower in other countries in the region. Generating factors include:

- Government programs supporting the digitalization of the banking sector.
- Development of local alternatives to international payment platforms [6].

From the above, the following trends in digital banking development under Industry 4.0 can be identified:

- Accelerated digitalization of traditional banking services.
- Integration of block chain and artificial intelligence technologies.
- Complete transformation of the banking ecosystem through super-apps integrating multiple financial services.
- Increased adoption of biometric payments.
- Expansion of mobile payment platforms like Nubank and Mercado Pago.
- Adoption of digital lending solutions.
- Development of solutions for instant payments and online banking.

In 2024, the development of digital banking continued to advance significantly across various regions of the world, influenced by technological innovations and changes in consumer behavior.

In Europe, digital banks recorded notable growth. For example, Openbank, the 100% digital bank of the Santander Group, became the largest of its kind in Europe by deposit volume and expanded its operations to the United States in 2024. This expansion reflects the strategy of European banks to increase their presence in international markets and leverage the advantages offered by digital platforms.

In the United States, traditional banks intensified their digitalization efforts to compete with new financial technology platforms. Additionally, European banks like Openbank expanded their presence in the American market, offering high-yield savings products and intuitive digital experiences for customers.

In Asia, a region known for the rapid adoption of financial technologies, digital banking continued to develop rapidly. FinTech platforms gained popularity, offering integrated and

personalized banking services to a broad consumer base.

In Latin America and Africa, digital banking made significant progress, particularly in areas with limited access to traditional banking services. The widespread use of mobile devices facilitated the adoption of digital financial services, enabling financial inclusion for larger segments of the population [25].

Thus, in 2024, digital banking continued to evolve globally, with differences in the pace and methods of adoption, depending on the specificities of each region.

Results and discussion

The comparative characterization of approaches regarding the digital transformation of banking business models allows us to conclude that the higher the level of penetration of digital technologies in a bank's business processes, the more exposed it becomes to a greater number of cyber threats. This enables a better understanding of their strengths and weaknesses in the context of ensuring security in the digital environment, as observed in the content of table 3.

Table 3.

Comparative analysis of digital transformation strategies for banking business models: global perspectives

Approach	Content	SWOT Analysis of the Approach
1. Traditional Bank with Digital Channels	**Prerequisites for Application:** Deterioration of the competitive position of banks with traditional physical business models (BM); increasing customer demand for new personalized products and services; declining profitability and business activity indicators. **Goal:** Integrating individual elements of digital banking into the traditional physical BM to maintain the competitive position and business activity of classical banks. **Mechanism:** The bank's management identifies critical areas requiring urgent modernization and rapidly digitizes the products and services within these areas. The overall BM structure and its physical paradigm remain unchanged.	**Advantages:** Relatively low transformation costs, preservation of conservative management interests, short-term satisfaction of customer expectations. **Disadvantages:** Potential conflicts between traditional and digital business process management paradigms, replication of banking products leading to increased administration and control costs, challenges in timely updating digital infrastructure due to its autonomous nature within the physical BM.
2. Digital Branch of a Traditional Bank	**Prerequisites for Application:** Growing customer demand for full migration of services to a digital environment; management's readiness to experiment with digital transformation; desire to maintain business activity in both physical and digital environments. **Goal:** Creating a subsidiary business unit within the bank's physical BM, operating as a "financial sandbox" for developing, testing, and integrating digital tools for product and service delivery in operational banking, while separating customer flows based on their preferences. **Mechanism:** The bank's management selects one or more infrastructure objects with high innovative potential. The leadership of these structures develops individual digital transformation strategies and implements the described activities. The effectiveness of their work is then evaluated in a control session, and the best practices are subsequently scaled across the parent BM.	**Advantages:** A balanced and diversified approach to transformation, creation of a dedicated infrastructure for digital transition, and the formation of professional experience in the digital paradigm. **Disadvantages:** High costs of maintaining such a branch, potential conflicts of subordination, difficulties in data exchange, and the risk of the subsidiary structure absorbing the parent organization; limited scalability of digital banking practices across the entire parent BM.
3. Digital Banking Brand	**Prerequisites for Application:** Management's declaration of readiness for fundamental digital transformation, adoption of a digital rebranding strategy for the BM, and goals for M&A deals with fully digital banks. **Goal:** Positioning the bank as one striving for change and	**Advantages:** A balanced approach to technological and process innovations, minimizing risks and errors in reform path selection; high alignment of management and customer interests, rational use of financial resources for operational

	innovation through systematic, step-by-step work on digitizing business processes. **Mechanism:** The bank's management creates a digital transition roadmap and a work schedule, defining responsibility centers and points of interest alignment. The digitization of the BM's contours and levels is carried out in stages.	infrastructure reorganization. **Disadvantages:** Lengthy digital transition (risk of losing competitive advantage); difficulty in predicting the duration of the banking brand's lifecycle stages, reactive management response to the latest technological developments, and high cyber vulnerability of the business model.
4. Fully Digital Bank	**Prerequisites for Application:** Productive inter-industry cooperation with IT companies and the fintech market; aggressive investment policy aimed at achieving technological leadership; long-term strategy for acquiring competitors with physical management paradigms. **Goal:** Creating a fully digitized business model for banking products and services, personalized and refined based on individual customer needs in exchange for monetized use of customer personal data. **Mechanism:** The bank's management abandons the physical paradigm or forms a greenfield project for fully digital products and services (in the case of a new bank). The second stage involves creating a digital landscape for product placement—a financial supermarket. The third stage involves scaling the BM by incorporating new products, including adjacent or quasi-banking ones (e.g., smart home systems with a bank customer's ID key, digital signatures, etc.).	**Advantages:** Harmonization of management interests with the digital paradigm and trends in digital economic reform; the bank as an actor is open to innovation and actively develops customer feedback; achieving informational transparency in banking and early detection of product (service) issues; seamless interbank cooperation and development of co-branded products and services. **Disadvantages:** High costs for ensuring cybersecurity of personal data and transaction infrastructure; potential agency conflicts between the bank and IT partners due to differing visions for joint business development.
5. Banking Digital Ecosystem / Financial Metaverse	**Prerequisites for Application:** Leading technological development in the IT sector in the country; accumulation of significant financial funds in non-banking sectors; regulatory liberalism and lobbying of IT business interests for incorporation into the financial sector; an oligopolistic banking market with centrist interests in reshaping the market. **Goal:** Creating a cyber space with zero competition—a financial ecosystem that allows businesses from financial and non-financial sectors to participate based on partnerships and loyalty to the ecosystem owner.	**Advantages:** Complete penetration of banks into customers' lives, essentially observing them to proactively optimize financial products and services; innovative development of all ecosystem partners and infrastructural support from the initiating bank; creation of a new digital world where societal behavior scenarios can be simulated, macroeconomic proportions analyzed, and financial violations and crimes identified.
5. Banking Digital Ecosystem / Financial Metaverse	**Mechanism:** One or a group of super-large banks conducts a large-scale investment intervention and forms a digital network platform. Based on customer requests, the platform is populated by partners offering financial (including banking) and non-financial services under exclusive conditions. Rules of conduct, data exchange standards, and interactions are regulated and controlled by the ecosystem owner. The financial metaverse represents a new level of ecosystem development, based on seamless integration of the bank and IT business into a new entity that mirrors the digital life of a specific customer, including their behavior, interests, and business activity, to create and test behavioral scenarios (the customer can also participate in their development and simulation).	**Disadvantages:** Customers' acceptance of the loss of minimal personal boundaries, negative effects of virtual replication (participants may try to transfer events from the virtual to the real world), emergence of financial and business doublethink coupled with complete informational transparency of transactions; scaling of cyber threats and rapid, explosive growth of the Darknet segment in trading personal information

Source: compiled by the authors based on the data [2, pp. 215–218]

The domestic banking sector has already formed its own strategic directions for future development, which are aligned with global trends of digital financial market expansion. The intense activity of banks in the practice of advanced banking institutions in the Republic of Moldova in the last two decades has demonstrated that banks are the locomotive of digital transformation in the national economy and the initiators of new technological initiatives. We schematically present the structure of the modern banking sector and its advantages in Figure 4.

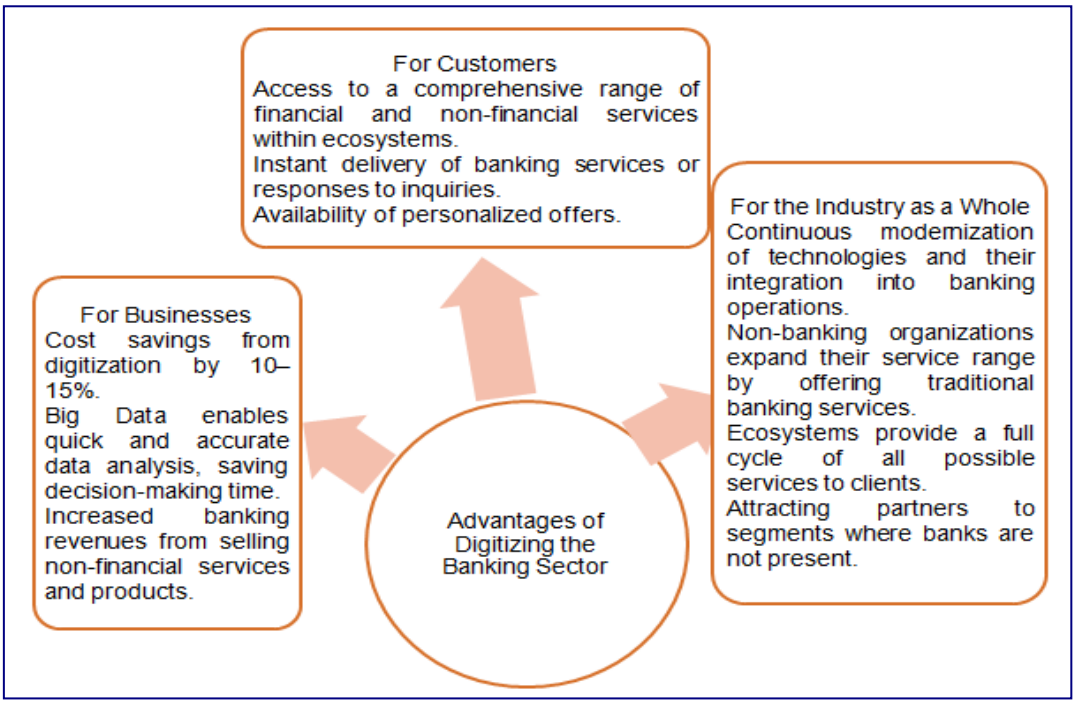

Figure 4. Key advantages of digital transformation in the banking sector

Source: compiled by the authors based on the data [2, p. 218]

Continuous digital transformations and the implementation of new solutions in traditional services and products, service delivery processes, and banking infrastructure enable the achievement of high margins and the accumulation of a vast volume of experience and customer bases. The application of artificial intelligence technologies in processing information flows allows for immediate responses to customer demands and the maximum expansion of coverage across various areas of public life [2, p. 218].

Currently, various levels of the bank's presence in the online environment can be identified, even beyond its digital platforms (fig. 5).

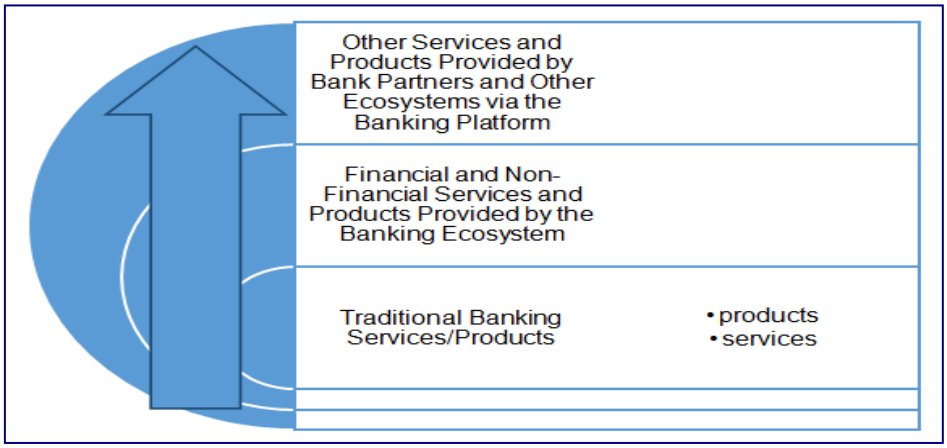

Figure 5. Range of services provided by banks in the digital economy

Source: compiled by the authors based on the data [2, p. 220]

In Figure 5, we observe that the modern bank, within the digital economy, is present across a wide range of sectors and industries in the national economy. Depending on the level of the bank's presence, three stages can be distinguished [16].

– Level 1 – represents the services and products that are traditionally considered banking services, through which banks have always generated revenue (payroll projects, payment operations, loans, deposits, etc.). These services and products are offered to customers both offline and online;

– Level 2 – represents the services and products that have been digitized and are provided through the ecosystem services of banks. These services can be both financial and non-financial in nature;

– Level 3 – represents the services and products that the bank does not offer directly but are provided by partners using banking technologies, for example, for making payments and settlements. These opportunities, created by the bank for its partners, allow them to maintain customer loyalty and expand the potential customer base.
In fact, the bank is moving into the online environment, becoming merely a payment or loan service and promoting its services not under the bank's name but under the name of a recognized brand. The bank's personnel policy is transforming – there is a reduction in the number of managers, who are being replaced by robots and online assistants that guide customers in using online banking services 24/7.

Conclusions

Today, the global banking sector is in the midst of a digital transformation, and traditional banks, wishing to remain competitive in the digital future, are working hard to discover new digital transformation technologies to become more dynamic, agile and efficient in meeting customer needs.

The efficient and secure development and functioning of the digital financial space requires the implementation of coordinated measures across all its participants, as well as timely and proportionate regulation that, on the one hand, supports the stability of the financial system and protects consumer rights, and, on the other hand, fosters the development and deployment of digital innovations.

The main problem with the transition to digital technologies is that most other financial service providers have already understood the need to adopt digital technologies and have started to develop appropriate strategies.

The spread of digital technologies in the financial sector is also associated with certain risks. In particular, technical progress creates fertile ground for the development of projects that promise investors high returns - including online P2P lending platforms. However, experience in the Chinese market shows that loopholes in government regulation can lead to fraudulent schemes and massive bankruptcies of P2P companies. This risk is also relevant for our country, where certain categories of citizens, who are not well acquainted with the particularities of the financial market, may invest in "financial pyramids" and other dubious financial schemes.

In order to improve banking activity in the digital economy, stimulate competition, increase accessibility, reduce the cost of services and reduce the risks of fraud and illegal activities on the digital technology market, it is necessary to review the current legal rules on electronic transactions, electronic signatures, electronic identification and authentication of customers, as well as the exchange of customer data and ensuring confidentiality, so that they are in line with the new conditions for banking activity.

Digital technologies in the banking business have influenced all processes of service delivery and product generation, the format of communication between banks and customers, the bank's infrastructure itself, as well as customer behavior. Virtually all transactions, except cash, can be carried out online by customers. Thanks to the development of digital ecosystems, banks have gone beyond their traditional competencies and are evolving as digital services, accompanying their customers' online activity.

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