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DIGITALIZATION OF BANKING MANAGEMENT

The modern banking sector of Ukraine is experiencing an intensive digitalization period, which has become a significant factor in its further development and competitiveness. The article explores the priorities of digitalization, modern digital technologies and their impact on the banking system of the country. A thorough study of the processes of digitalization of the banking sector of Ukraine at the present stage of its development has been carried out. Particular attention is paid to the analysis of key prerequisites for active digitalization of the national banking system, among which technological progress, changes in the behavior of consumers of financial services, regulatory initiatives and the need to increase the competitiveness of banking institutions play a decisive role. The leading digital technologies that contribute to the transformation of the world banking space, including artificial intelligence, machine learning, blockchain technology and Internet things, are considered separately. Their impact on the optimization of operating activities of banks, increasing the level of security of financial transactions and improving client experiences were investigated. The work summarizes the main advantages of digitalization for banking institutions, including improving the efficiency of business processes, reducing operating expenses and improving the availability of banking services. At the same time, potential challenges related to the introduction of digital technologies, including cybersecurity threats, the need for large-scale investments in technological infrastructure and changes in traditional business models, are analyzed.The article also presents a study of the dynamics of the number of banking departments in Ukraine during 2020-2024, which revealed the basic patterns and tendencies of reduction of physical points of service against the background of active development of remote banking. A separate section is devoted to the analysis of modern business models in the conditions of digital transformation, as well as the prospects of their further development in the context of automation of financial processes and the use of innovative technological solutions. The final part of the article outlines key trends that will determine the future of digitalization of the banking sector of Ukraine. In particular, both existing, but not enough innovations and potential directions of technological development, which can significantly change the structure of financial services in the near future are considered as already available.

Keywords: *bank, technology, banking, digitalization, bank management, software.*

Tabl. 1. Fig. 1. Lit. 7.

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ЦИФРОВІЗАЦІЯ БАНКІВСЬКІВСЬКОГО МЕНЕДЖМЕНТУ

Сучасний банківський сектор України переживає період інтенсивної цифровізації, що стало вагомим чинником в його подальшому розвитку та конкурентоспроможності. У статті досліджуються прередумови діджиталізації, сучасні цифрові технології та їх вплив на банківську систему країни. Здійснено ґрунтовне дослідження процесів цифровізації банківського сектору України на сучасному етапі його розвитку. Особливу увагу приділено аналізу ключових передумов активної діджиталізації національної банківської системи, серед яких визначальну роль відіграють технологічний прогрес, зміни у поведінці споживачів фінансових послуг, регуляторні ініціативи та необхідність підвищення конкурентоспроможності банківських установ. Окремо розглянуто провідні цифрові технології, що сприяють трансформації світового банківського простору,

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зокрема штучний інтелект, машинне навчання, блокчейн-технології та інтернет речей. Досліджено їхній вплив на оптимізацію операційної діяльності банків, підвищення рівня безпеки фінансових транзакцій та покращення клієнтського досвіду. У роботі узагальнено основні переваги цифровізації для банківських установ, серед яких підвищення ефективності бізнес-процесів, зниження операційних витрат та покращення доступності банківських послуг. Водночас проаналізовано потенційні виклики, пов'язані із впровадженням цифрових технологій, зокрема загрози кібербезпеці, необхідність масштабних інвестицій у технологічну інфраструктуру та зміни у традиційних бізнес-моделях банків. У статті також представлено дослідження динаміки кількості банківських відділень в Україні упродовж 2020—2024 років, що дозволило виявити основні закономірності та тенденції скорочення фізичних точок обслуговування на тлі активного розвитку дистанційного банкінгу. Окремий розділ присвячено аналізу сучасних бізнес-моделей банків в умовах цифрової трансформації, а також перспективам їх подальшого розвитку в контексті автоматизації фінансових процесів та застосування інноваційних технологічних рішень. Фінальна частина статті окреслює ключові тенденції, що визначатимуть майбутнє цифровізації банківського сектору України. Зокрема, розглянуто як уже наявні, але поки недостатньо поширені інновації, так і потенційні напрями технологічного розвитку, які можуть суттєво змінити структуру фінансових послуг у найближчому майбутньому.

Ключові слова: *банк, технології, банківська сфера, цифровізація, банківський менеджмент, програмне забезпечення.*

Problem statement. Management can be considered as one of the most important factors in improving the efficiency of any activity. In the conditions of rigid competition, which accompanies the development of a market economy, it is necessary to constantly improve systems and forms of management, to quickly master the knowledge accumulated in theory and practice, to find new extraordinary solutions in a dynamic situation. Only such an approach to management will ensure normal conditions of development of the organization [3]. The Banking Administration is, a kind, self -government, which is not being carried out from the outside of the environment, but by the subject, based on its own measures, estates and interests of the bank. At the same time, managing from the outside environment and self -government should be considered as processes that are in a very interconnection [1]. Thus, bank management is the management of all the processes that characterize the activity of the bank, all its relations (financial, economic, labor, technical and technological, organizational, legal, social, etc.) [1].

The efficient management system is one of the important components of the success of the open socio-economic system, including banks. The current state of the banking system, on the one hand, is a reflection of the overall state of the economy, but is also the result of poor management, due to the lack of funnial nobility from managers [2]. Therefore, there is a need for scientific researches of digitalization of systematic management of banks' activity and the theoretical understanding of basic concepts. The digitalization of the banking sector is a transformation that occurs under the influence of modern information and communication technologies that change the methods and approaches of providing financial services [1].

Analysis of recent research and publications. In recent years, a significant number of scientific works and analytical studies have been devoted to the digitalization of the banking sector of Ukraine, which reflect both theoretical aspects of digital transformation and its practical consequences. Modern scientific literature addresses key issues of digital technologies in banking, their impact on the economic efficiency of financial institutions, competitiveness of banks and the quality of customer service. Thus, in their work, a number of scientists explored the main factors of the Digitalization of the Banking Sector of Ukraine, proposing a model of the cycle of introduction of digital technologies in banking. O. Kopylova, Yu. Pichuhina and K. Honchar The key stages of this process were distinguished, including trigger changes, digital development development, technology analysis, their adaptation, implementation and further improvement. The study of the authors also focuses on the potential risks of digitalization that can affect the stability of the financial sector, as well as the promising directions of further development of digital banking services. L. Bondarenko та A. Podaryn in their research, they analyze the specifics of the digital transformation of the banking system of Ukraine in the context of global trends and world ratings. They emphasize that Ukraine demonstrates stable progress in the field of digital financial services, in particular in terms of digital competitiveness and contactless payments. Over the last four years, there has been a positive dynamics of growing popularity of digital banking decisions, which indicates an active integration of innovative financial instruments. O. Stashchuk та R. Martyniuk in their research, they focused on the specifics of the functioning of a new banking system based on the introduction of digital technologies. They point out that digitalization helps to optimize banking processes, allow financial institutions to reduce the cost of maintaining physical departments and minimize the need for a large number of staff. This, in turn, changes the traditional business models of banks, focusing on online formations with clients. Despite the considerable number of scientific publications on the digitalization of the banking sector of Ukraine, this topic remains relevant. Given the rapid evolution of technologies that defines new standards of functioning of the banking sphere, further research is necessary for a deeper understanding of the current state of digital transformation of banks and evaluating the prospects of their development in the near future.

Formulation of the article's objectives. The purpose of this article is a comprehensive assessment of the impact of digitalization on the banking sector of Ukraine, the analysis of its advantages and potential risks, as well as to determine the strategic directions of further development of the digitalization of the banking system. The study deals with the key aspects of the introduction of digital technologies in the activities of banking institutions, their impact on the efficiency of financial transactions, the level of accessibility of banking services and the competitiveness of banks at national and international levels. Particular attention is paid to the assessment of the benefits of digitalization, including process automation, reducing operating costs, increasing the speed of customer service and expanding the spectrum of financial services through innovative technologies, such as artificial intelligence, blockchain and Internet things. At the same time, possible risks, including cybersecurity threats, regulatory challenges and the need for significant investments in technological infrastructure, are analyzed. On the basis of the study, the article offers potential ways of further digital transformation of the banking sector, including the development of contactless and remote banking services, integration of advanced technological decisions and adaptation of banks' business models to new conditions of functioning in the digital environment.

Presentation of the main research material. Basic elements of bank management [1]:

- management entity (management system) - a bank subdivision and responsible officials who have the right to make management decisions and have a responsibility for the efficiency of the process;
- management object (controlled system) is a bank of economic entities, as well as relations.

In the areas of activity, the Banking Management is presented to financial and organizational (figure 1) [1]. The essence of that or other category is reflected in its functions, which are considered in terms of the work of the bank manager [1-7]:

1. financial management functions: information analysis; planning; regulation; control;
2. functions of organization management: organization; planning; motivation; control.

The main purpose of bank management is to ensure the profitability of the bank through the rational organization of the production process, including management of the bank and the development of technical and technological base, as well as the effective use [1].

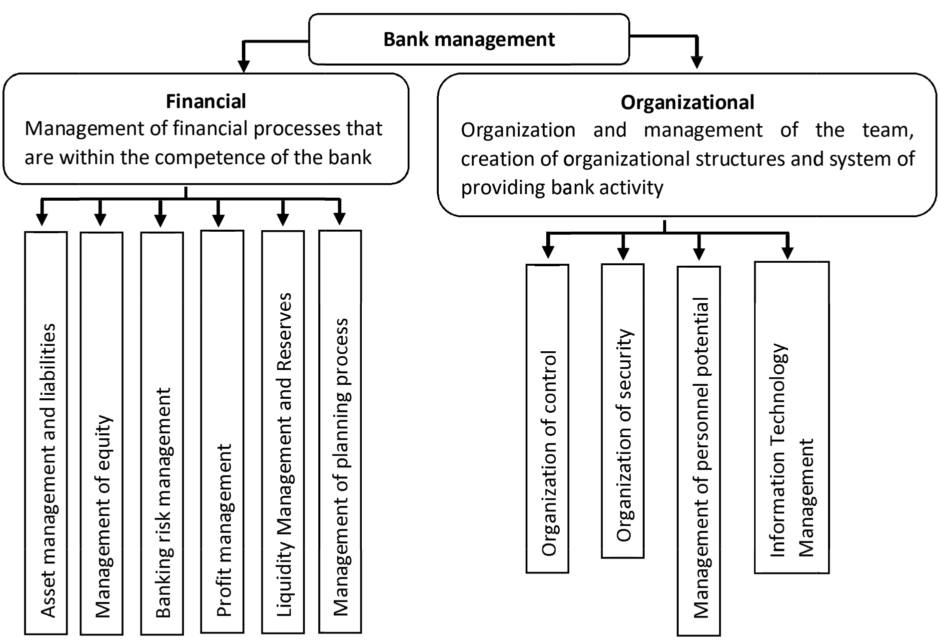

Figure 1. **Types of Bank Management,** *created by the author on the autovae [1]*

In the process of achieving the main goal, bank management is aimed at achieving such tasks [1]:

1. Task for defining a banking activity strategy.
2. Task for determining the organization of the bank.
3. Tasks to determine the policy of bank activity.
4. Tasks to develop adequate control systems for bank risks level.

5. Task for motivation of activity.
6. Tasks to monitor the bank's activity.

Determining the purpose of the bank's activity in the closest and subsequent perspective is the main thing in management. Management by setting the goals is carried out taking into account the estimation of the potential of the bank and providing them with relevant resources [1].

Therefore, the effectiveness of the implementation of the mechanism of banking management depends on the comprehensive implementation of management functions through compliance of the strategy and operational activity; coordination of compliance of strategic problems with the functional directions of development of the bank activity; Formation of feedback and internal and external control over banking activities [2].

Consider the main prerequisites for digitalization, modern digital technologies and their impact on the banking system of the country.

1. Prerequisites for digitalization of the banking sector of Ukraine.

The main factors contributing to the active development of digital technologies in the banking sector are:

- increasing demand for distance financial services;
- state digitalization programs (in particular, «DIIA»);
- introduction of foreign technological and fintech companies.

1.1. Macroeconomic factors

Banking digitalization is due to changes in the economic environment, including an increase in the share of non -cash payments, the introduction of new regulations and increasing investments in financial technology.

1.2. Social and behavioral aspects

The growing level of use of smartphones and access to the Internet contribute to the rapid development of digital banking services. Customers prefer mobile applications and remote service.

2. Modern digital technologies.

2.1. Artificial intelligence and machine learning.

Artificial intelligence (AI) allows you to automate data processing, analysis of financial risks and personalization of banking services. The use of machine learning contributes to more effective detection of fraudulent schemes and predicting customer behavior.

2.2. Blockchain.

Blockchain technologies change the principles of transaction processing, providing greater transparency, safety and reliability of financial transactions. Smart Contracts introduction increases the automation of banking processes.

2.3. Internet of things.

The development of the Internet of Things (IOT) enables banks to integrate financial services with devices that contributes to the development of contactless payments and increasing the level of security of financial transactions.

3. Challenges and prospects.

3.1. Changes in Banks Business Model.

Digitalization makes banks adapt to new realities by introducing online banking, mobile applications and cloud technologies.

3.2. Security risks.

Cybergrosis growth and the need to protect personal data require banks to develop effective cybersecurity mechanisms and implement information security standards.

4. Dynamics of development of banking departments in 2020-2024.

Analyzing the data on the closure and transformation of bank branches in Ukraine, one can highlight the tendency to reduce physical service points in favor of digital channels.

Below we consider the dynamics of changes in banking units in Ukraine for 2020-2024. During 2020-2024, the banking network in Ukraine has undergone significant changes. The general trend indicates a gradual reduction in the number of branches, which is associated with optimization of banking networks, the development of digital technologies and the influence of external political factors. As of 01.01.2024, 5011 banking branches were operating in Ukraine, which is 127 less than the previous year. Below is a table that reflects the dynamics of changes in the number of banking branches in Ukraine for the period 2020-2024 (Table. 1) [4].

Table 1. **Dynamics of changes in the number of banking branches in Ukraine for the period 2020-2024** *[4]*

Year	Number of compartments	Change for the year
2020	6 000	- 868
2021	5 551	-449
2022	4 202	-1 349
2023	5 138	+936
2024	5 011	-127

* Note: Data for 2020-2022 are approximate and based on general trends in banking branches in Ukraine [4].

It should be noted that the largest reduction of branches occurred in 2022, which was related to political circumstances in 2023, a temporary increase in the number of branches, but in 2024 the tendency to reduce continued.

The largest reduction of the branch network in 2024 was recorded in such banks [5]:

- Savings Bank: -32 Branch
- PrivatBank: -25 branches
- Credit Agricole: -14 Branches

At the same time, some banks have expanded their network. For example, Accessbank opened 6 new branches in 2024 [5].

In general, the tendency to reduce the number of banking departments in Ukraine is maintained, which is due to both external factors and development of digital banking services.

5. Future trends

5.1. Further development of mobile banking

Increasing the number of mobile bank applications and their functionality.

5.2. Using Big Data.

Banks will actively apply the analysis of big data to improve service and develop personalized financial decisions.

5.3. Implementation of digital identification.

Biometry and digital identification technologies will help to increase the level of safety and convenience of banking services.

Below we consider the scheme of interaction of digital technologies in the banking sector of Ukraine during 2020-2024, which reflects the main digital technologies and their interaction in the banking sector of Ukraine, as well as links between banks, clients and fintech companies.

The main components of the scheme:

- mobile banking;
- smartphone apps allow customers to make payments, transfers, receive loans and manage online finances;
- integration with government services (in particular, «DIIA»);
- support of digital currencies and NFC payments;
- artificial intelligence (AI) and machine learning (ML);
- chatbots and virtual assistants to automate customer service;
- analysis of financial data to detect fraud;
- personalization of banking services based on customer behavior;
- cybersecurity;
- using biometric data to authenticate (Face ID, відбитки пальців);
- protection of payments by tokenization and multi-level authentication;
- real time transactions monitoring;
- blockchain and cryptocurrencies;
- integration of banking services with cryptocurrency platforms;
- using smart contracts for safe transactions;
- creating digital hryvnias (CBDC) and their testing in the financial system;
- contactless payments and digital wallets;
- Using Apple Pay, Google Pay and other NFC technologies for fast payments;
- connecting bank cards to electronic wallets;
- Introducing QR Codes for Payments in Store;
- API-Integration and Open Banking.

Banks open API to third-party developers and fintech companies. Open Banking's popularity is increasing for convenient interaction between financial institutions.

Automation of financial management through connection.

Thus, the banking sector of Ukraine is actively developing digital technologies by introducing mobile banking, artificial intelligence, blockchain and open banking. The main vector of development is to increase the safety, speed and personalization of financial services.

Conclusions. The digitalization of the banking sector is an integral part of the modern financial system, which radically changes the principles of functioning of banking institutions and interaction with clients. Its impact covers a wide range of aspects, from optimizing internal processes to increasing the level of accessibility of financial services to consumers. The study analyzed the key aspects of the digitalization of the banking industry, which play a crucial role in the transformation of the financial sector. One of the most significant advantages is the extended access of customers to banking services, which provides a high level of flexibility and convenience. The use of mobile applications, online banking and online platforms allows financial transactions regardless of time and location, which significantly increases the level of customer satisfaction and facilitates the attraction of new users. For banks, digitalization opens up prospects for increasing operating efficiency and reducing costs. Automation of banking processes, the introduction of artificial intelligence and the use of blockchain technologies contribute to the optimization of business models, reducing the cost of maintaining physical departments and accelerating decision-making processes. At the same time, digitalization plays an important role in ensuring the security of financial transactions, as the use of advanced data protection technologies minimizes fraud and cyberattack risks. Despite numerous advantages, digitalization is also accompanied by a number of calls.In particular, cybersecurity is one of the key aspects that banks should focus on in order to protect the financial assets and personal data of their customers. Other challenges include regulatory restrictions, the need for significant investment in technological infrastructure and adaptation of staff to new working conditions. However, despite these risks, digitalization creates unique opportunities for banks to modernize business models, expand the spectrum of financial products and services, as well as deepen cooperation with financial companies. Transformation processes occurring in the banking sector give institutions that can quickly adapt to digital changes, and significant competitive advantages. Successful integration of digital technologies into banking is the key to long -term development and sustainability of financial institutions in a global digital economy.

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