

# The Role of the Artificial Intelligence in Transformation of the Modern Banking Marketing System

## Mykhailo Bilyi

Department of Finance,  
Vasyl Stefanyk Precarpathian  
National University, Ivano-Frankivsk, Ukraine,  
mykhailo.bilyi@pnu.edu.ua

## Maksym Dubyna

Department of Finance,  
Banking and Insurance,  
Chernihiv Polytechnic National University,  
Chernihiv, Ukraine,  
maksim-32@ukr.net

## Iryna Sadchykova

Department of Finance,  
Banking and Insurance,  
Chernihiv Polytechnic National University,  
Chernihiv, Ukraine,  
aspirant\_chstu@ukr.net

## Nadiia Viadrova

Department of Banking and  
Financial Technology,  
Educational and Scientific Institute  
"Karazin Banking Institute"  
V.N. Karazin Kharkiv National  
University, Kharkiv, Ukraine,  
3000918@gmail.com

## Yurii Belinskyi

Department of Finance,  
Banking and Insurance,  
Chernihiv Polytechnic National University,  
Chernihiv, Ukraine,  
belinskijurij85@ukr.net

## Abstract

The article examines the features of the transformation of the banking marketing system through the active use of digital technologies (DT) and, first of all, artificial intelligence technology (AIT). To this end, an analysis of the essence and specific features of the functioning of the banking marketing system was carried out, which was implemented through the specification of the features of the economic activity of a banking institution as an economic entity, the use of a systems approach to the description of such a system. Accordingly, the main elements of the specified system were determined, those systems and entities whose interaction forms the external and internal environment for its functioning were identified. As a result, a model of the banking marketing system was built, the tasks of such a system and the features of its functioning were substantiated. The article pays significant attention to the issues of digitalization of banking institutions, and the directions of their digital transformation in modern conditions were identified. Accordingly, the main attention is devoted to the study of the essence of AIT, the potential for its use in the work of commercial banks. At the same time, the features of the use of this technology for the transformation of the banking marketing system were analyzed, and the advantages and disadvantages of its application for the development of such a system were identified.

**Keywords:** Bank, Marketing, Bank Marketing, Digitalization, Artificial Intelligence, Digital Marketing, Banking Service.

## Introduction

Financial institutions and especially commercial banks use DT in various areas of their own activities, starting from provision of financial services, interaction with potential and existing clients, and ending with optimized circulation of information resources within the banking institution, increasing the cyber protection level. DT are also beginning to play an important role in the marketing activities of banking institutions, as they allow for more efficient use of financial resources allocated for these activities, to introduce new approaches to the sale of banking products, satisfying needs of different categories of clients. At

the same time, there is the increase in requirements of consumers of financial services themselves for their quality, and customers' expectations from financial institutions are growing in terms of more efficient use of their resources, acceleration of financial transactions, and increased accessibility to their own financial resources. Possibilities of making payments necessary for consumers around the clock are now perceived by all clients as mandatory for banking services. Accordingly, this requires commercial banks to quickly implement DT in their own activities, since their effective use affects the competitiveness level of banking institutions, which ultimately contributes to increasing their income, improving their reputation, increasing customer loyalty, and attracting new consumers.

One of the most promising DT, which are actively being implemented by banking institutions throughout the world is the AIT. This technology today gradually adapt banking institutions to implement different directions of operating room activities, to increase efficiency of functioning systems of management and support in growth of qualities interactions between structural divisions. The significant advantage of using artificial intelligence (AI) in the banking activity is the opportunity to reduce roles of employees in commercial banks in routine implementation that are integral component functioning of any bank. Commercial banks must perform complex requirements of state institutions that carry out regulation of their activities that is also accompanied by complex processes accumulation, processing information about their financial condition, and various aspects of economic activities. To prepare and provide necessary data of state institutions, the above gradually AI used to simplify the outlined processes.

Today, banking institutions actively apply AI and in marketing activities use experience of other economic entities that are already actively apply potential of these technologies, adapting its opportunities for specific functioning of commercial banks. Using AI in banks is an important aspect of increasing efficiency of their operation and, at the same time, commercial banks, owning significant volumes of information about their own customers, their consumer preferences, quality

requirements of banking services, can best among others economic subjects use these technology in its own activities for, primarily, analysis of the consumer's behavior, behavior of their own customers, defining models of this behavior that ultimately gives opportunity to offer them those banking products which can most satisfy consumer's demands in best way. The outlined gradually leads to transformational processes in the functioning as a whole of the commercial bank, as well as relevant individual directions of bank's activities. Transformational processes in the banking marketing system are characterized by gradual implementation of AI technologies to ensure further development.

## Literature review

Modern development of the financial services sector is accompanied by a significant level of digitalization of the activities of banking and non-banking financial institutions. Digital technology today are actively involved in their own activities to accelerate operating processes, to increase qualities maintenance, to reduce expenses. Assoc. Prof. using DT already confirmed significant potential of their use in financial services that only further evidence of dynamic application of information and communication technologies in business financial institutions.

Alqasa, K. M. A.; Sardjono, W., & Perdana, W. G.; Ivanova N. et al. Alqasa K. M. A. (2023); Sardjono W. et al. (2023); Bharti S. S. et al. (2024) investigate the impact of marketing using AI on customer satisfaction with banking services, analyze competitive advantages of using AI in digital marketing in the banking industry.

Bharti, S. S. et al. (2024); Viknianska A. et al. (2021); Marhasova V. et al. (2023); Grigoras-Ichim C. et al. (2018) analyzed features of introduction of digital banking based on AI, proposed the methodological approach to the economic analysis and management of business entities in transformational conditions.

Dwivedi D. N. et al. (2024); Wahyudi H. et al. (2025); Abramova A. et al. (2021) analyzed development of innovative marketing in the banking sector, investigated the use of AI and data engineering in the modern banking marketing system.

Zhao Y. et al. (2025); Wu F. et al. (2025); Grigoraş-Ichim C.E. (2018) conducted analytical assessment of the impact of ChatGPT on systemic financial risk in Chinese banks, analyzed the mechanism and role of AI-based supply chain creditworthiness assessment in formation of the credit policy of commercial banks, and investigated features of interim financial reporting within digitalization.

Phuc V. M. et al. (2025); Vi P. T. et al. (2025); Nithya M. et al. (2025); Dubyna M. et al. (2025) proved significant role of AI in predicting profitability and credit risks of commercial banks, analyzed current AI products in the commercial bank that contribute to its development under the influence of digitalization challenges.

Ali H. et al. (2025); Nwaomah A. E. (2025); Boyrie M. E. (2025) revealed features of decoding digital signals, investigated the use of AI in Islamic banks, considered prospects of bank employees in the context of possible losing of their jobs due to introduction of AI and the irrelevance of some positions in the banking industry, and also analyzed the impact of use of AI and Fintech on bank performance.

Benatia I. et al. (2025); Malhotra S. et al. (2025); Alzaghoul A. et al. (2025); Jakubek P. et al. (2023) analyzed integration of AI by participatory banks to improve customer service and consulting relationships, conducted an analysis of AI-based creditworthiness in banks and non-bank financial companies, investigated economy security and the impact of AI disclosure on financial reporting and performance as evidence from US banks.

Yang Cunyi et al. (2025); Chakraborty A. et al. (2025) demonstrate features of using smart banking using the AI-STF model to increase the level of environmental awareness, to analyze transformation of sustainable customer targeting in leading private banks in India, which proved effectiveness of using DT.

The above highlights the issue of conducting scientific research in description of transformations that are currently taking place in the banking marketing system due to active use of the AIT.

## Methodology

To analyze current trends in transformation of the banking marketing system due to the use of the AIT, a range of scientific approaches and methods was used, among which the following should be highlighted: content analysis - to substantiate specific features of the economic activity of banking institutions; system approach, modeling - to determine the essence of the banking marketing system, its tasks, main subsystems and entities that form the internal and external environment of its functioning; methods of systematization, analysis and synthesis - to determine features of the functioning of the banking marketing system, directions of using the AIT in the work of banking institutions; methods of abstraction, logical generalization - to specify directions of digitalization of the banking marketing system; methods of induction, deduction - to determine advantages and disadvantages of using AIT in the functioning of the banking marketing system. The work also uses graphic research methods for visual presentation of information.

To substantiate the role of marketing expenses of banking institutions in the formation of their net profit, the article uses regression analysis and constructs a quadratic univariate regression model. This is implemented based on the use of the following formula:

$$y = a_0 + a_1x^2 + a_2x + u, \quad (1)$$

where  $y$  – dependent variable;

$x$  – independent variable;

$a$  – model parameters;

$\varepsilon$  – error.

To search for an econometric model, a calculation model was used, which has the form:

$$\hat{y} = \hat{a}_0 + \hat{a}_1x^2 + \hat{a}_2x, \quad (2)$$

In accordance,

$$u = y - \hat{y} \quad (3)$$

Understanding that  $u$  must be minimal so that the resulting model is optimal in accordance with the existing real dependence, the formula will look like:

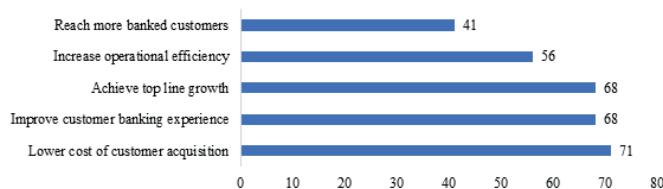
$$\sum_{i=1}^n (y - (\hat{a}_0 + \hat{a}_2 x^2 + \hat{a}_3 x)) \rightarrow \min \quad (4)$$

Thus, by solving this equation, we can find the model parameters and, accordingly, the calculated dependence model.

## Results

Indeed, in the context of digitalization, virtually all areas of the banking activity are undergoing changes due to the use of DT in individual operational processes. These technologies are different and in modern conditions, as a rule, various possibilities of these innovations are combined to obtain the most beneficial effect of digitalization for the banking institution. Fig. 1 presents the key prerequisites for digital transformation of commercial banks, which were identified based on the survey of experts working in the banking sector.

**Fig. 1. Key prerequisites for digital transformation of commercial banks**

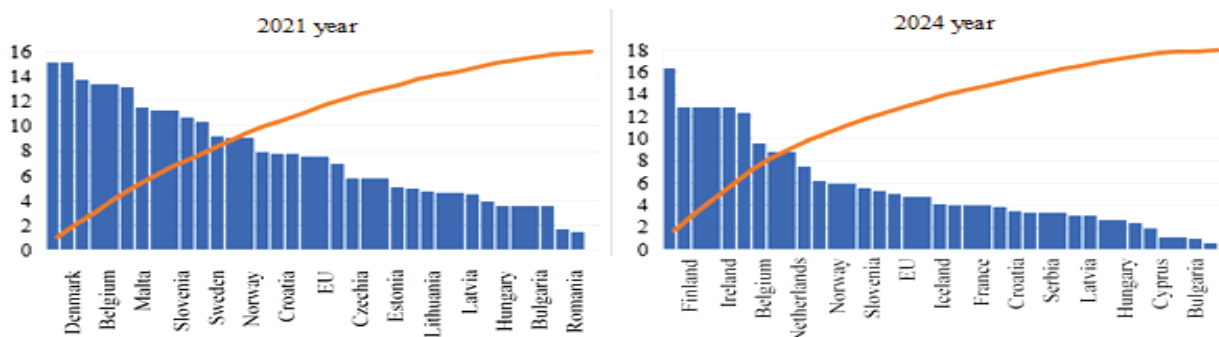


Source: Steven Burnett et al. (2025)

According to the data in Fig. 1, it can be stated that among the main prerequisites for digitalization of banking institutions, experts first of all noted the decrease in the cost of attracting customers (71%). We also note that according to Coinlaw, 54% of customers banks in the world switched to digital banks in 2025, which indicates continued shift to digital banking platforms Steven Burnett et al. (2025). In addition, this only confirms irreversibility of digital transformations of banks and their significant demand for new digital solutions to implement their tasks.

Digitalization of the banking institution is a complex process and in the vast majority of cases requires the bank to take the systemic approach and systematic gradual digital transformation, which affects virtually all areas of the bank's activity, all internal divisions, processes carried out to ensure stability of its work, and provision of quality services to customers. Digitalization of the banking marketing system, first, is a component of the general comprehensive approach to implement the digital development model for any bank that is interested in its own digital transformation and in using modern information and communication technologies. At the same time, banking institutions increase budgets for digitalization of the banking marketing system every year, which indicates a significant interest in using relevant new marketing tools for selling their own banking products. Fig. 2 presents information on digital advertising spending by financial institutions in the United States, stating both the costs already incurred by these institutions and the forecast of their growth/decrease in the future.

**Fig. 2. US Financial Services Digital Ad Spending Growth, by Subcategory, 2022–2026**



Source: Van Dyke T. (August 2024).

Thus, from the data in Fig. 2, we can conclude that in 2025 there will be a significant increase in spending on digital advertising carried out by financial institutions. At the same time, this year, according to forecasts, it is banking institutions that will increase their spending on this advertising by 20.1%, which is the largest indicator in all four years. Of course, companies operating in the Payments sector spend the most money on advertising their digital products and money movement. This is quite logical, given the rather tough level of competition between them in this niche of the financial services market.

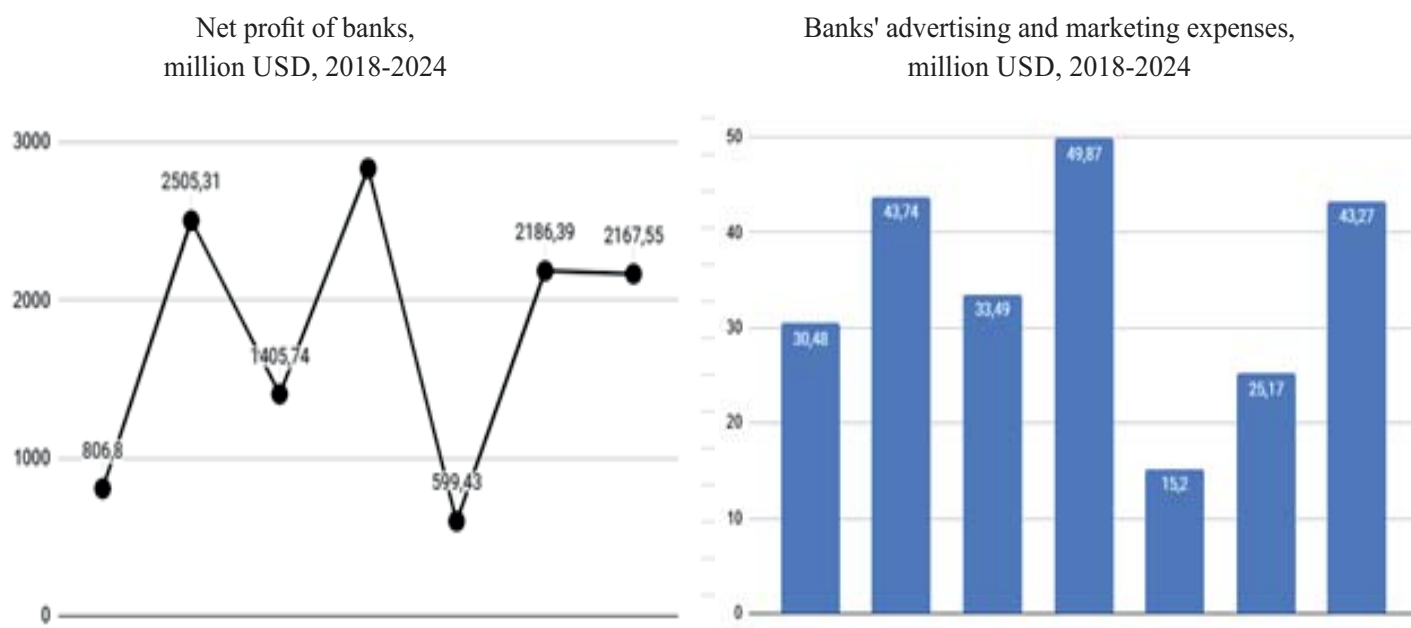
According to Fig. 2, in the USA in 2026 there will be the decrease in the budgets allocated by financial companies for digital advertising. However, in our opinion, emergence of new digital solutions that will contribute to further improvement of the functioning of the financial services sector will increase the competition level between financial institutions, including commercial banks, and this will stimulate active development of their own marketing companies to remain competitive in the financial services market.

At the same time, it is quite logical to assume that marketing in the context of digitalization and competition is an

important component of the development of banking institutions and its effective functioning. For example, let's consider the role of marketing and, accordingly, advertising in the results of the activities of commercial banks in Ukraine. Fig. 3 presents the relevant information.

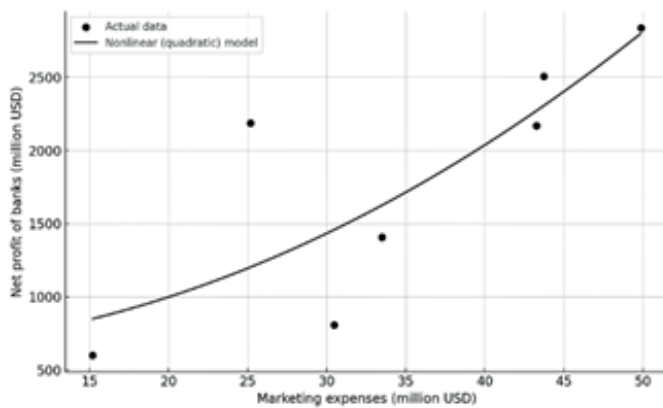
So, we can conclude that banks' marketing and advertising expenses remain important from the standpoint of forming the prerequisites for making a profit. Despite the digitalization of operational activities, marketing expenses also remain important for the sale of banking products. Only in modern conditions is the approach to promoting such products and their development changing. Digitalization changes the conceptually established model of marketing banking services, forming new channels of interaction with clients, consulting them and familiarizing them with the capabilities of financial institutions. Accordingly, marketing expenses remain important for banks in Ukraine, to ensure their income. Despite the war in the country, banks' marketing and advertising expenses in 2024 have already reached 2021 (before the war). In the national currency of Ukraine, this is an even more significant increase in four years.

**Fig. 3. Results of modeling the impact of marketing and advertising expenses of banking institutions in Ukraine on their net profit**





### Results of constructing a quadratic univariate regression model of the impact of marketing and advertising expenses of banking institutions in Ukraine on their net profit



$$\text{NetPr} = 635,47 + 1,23 * \text{ME}x + 0,84 * \text{ME}x^2$$

NetPr – net profit of banks;  
ME – banks' marketing expenses.

$$R^2 = 0,634$$

$$p\text{-value} = 0,032$$

Source: calculated by the authors based on data <https://bank.gov.ua/>

For understanding transformations systems of the banking marketing using AI technologies, in the paper, we will pay attention concretization in general entities systems of the banking marketing and define features of its functioning within any commercial bank.

From a theoretical point of view, the essence of the banking marketing is to logically justify from the position of the content concretization of the marketing as a direction that is carried out by management subjects in one's own activity and is an integral component of all processes that are implemented by these entities to ensure own stable functioning. Marketing is applied by every subject, sometimes only during development of individual products that are implemented for clients, sometimes for promotion of effective system products, their advertising, supporting relevant image, reputation of economic subject. Features of the marketing use is primarily determined by specific functioning of management subjects, main directions of their strategic development, market positions and competition level between this entity and other similar management subjects.

Concretization of the essence of marketing as a tool to ensure further development of any business entity has already received considerable attention in the scientific literature, and we will not analyze this issue within the framework of this article. We will only note that marketing is an integral part of building an effective system of

strategic development of an enterprise, and its use must be consciously carried out to form promising directions for further development of a particular business entity.

Implementation of marketing by banking institutions is determined, as already noted, by specific features of their economic activities, which affect the specifics of implementation of marketing activities (Fig. 4).

Thus, taking into account the above-mentioned features of the economic activity of banking institutions, and taking into account the essence of marketing as an activity that is an integral part of strategic development of business entities, we can determine that bank marketing is an activity of a commercial bank aimed at identifying customer needs in financial services, forming a positive reputation of a banking institution, increasing customer trust to create conditions for the bank's competitiveness, customer loyalty and increasing income in the long term. The presented interpretation of the essence of “bank marketing” is also debatable, taking into account multifunctionality and multifacetedness of marketing as an economic activity and an integral part of development of any entity.

Marketing as an activity can be considered from the position of the systems approach as a system that generalizes all components, processes, relationships that are formed within the economic entity, and are related to implementation of the main functions of marketing, fulfillment of those tasks in development of this entity that

are defined by its owners and managers. Accordingly, banking marketing can also be considered as a complex system in which there are its components, connections between them and the only goal of the functioning of this system. Let us consider its essence and structure in more detail.

Using of the systems approach is an important aspect in the study of a significant number of different economic processes and entities. When applying this approach we can concretize the essence of the certain concept through consideration first its structures i.e. component composition and connections between main elements.

**Fig. 4. Specific features of the economic activity of banking institutions**

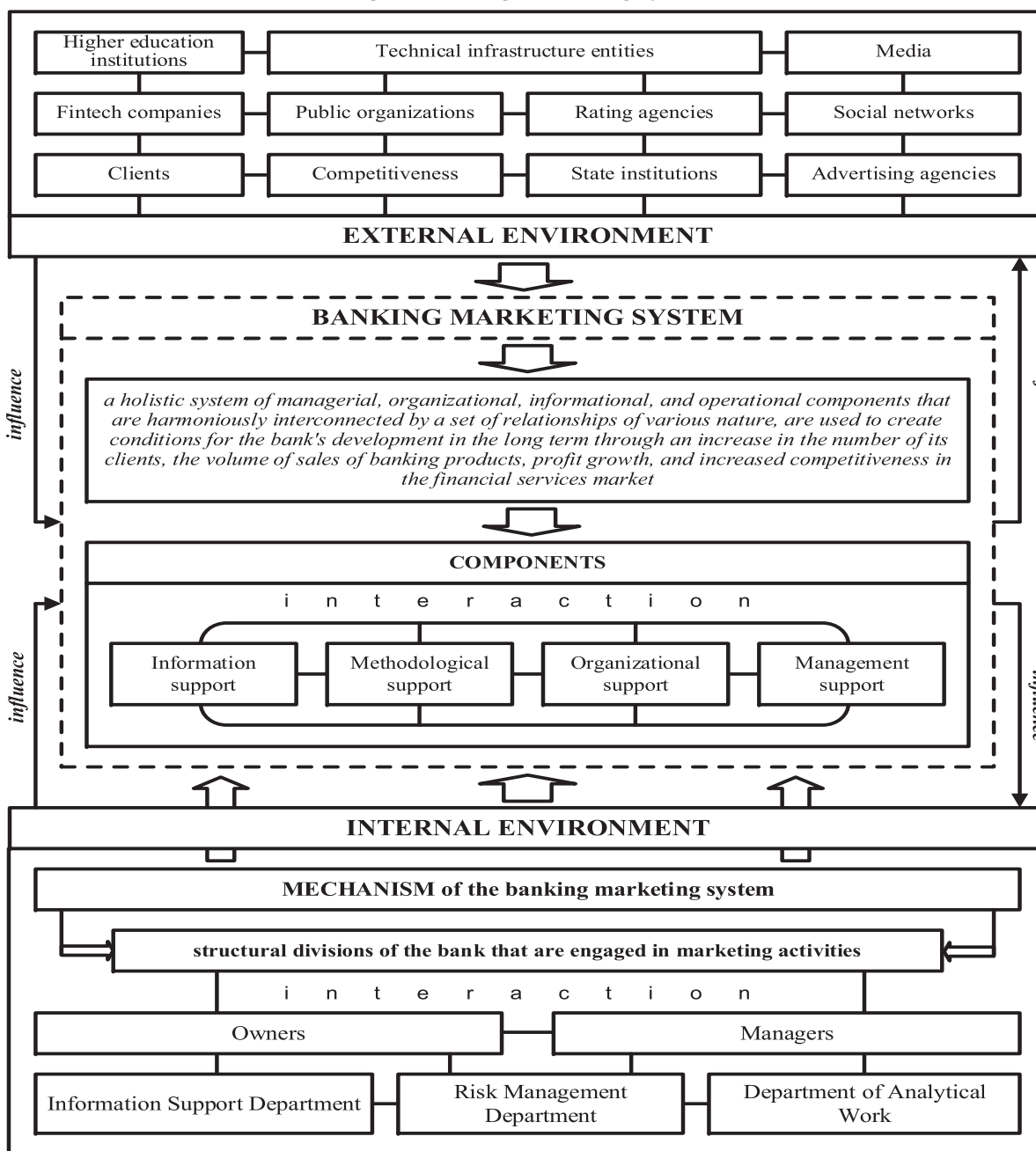


*Source: compiled by the authors*

The banking marketing system from the perspective of the systems approach can be considered as a holistic system of managerial, organizational, informational, operational components that harmoniously related together as a whole connections of various nature, are used to form conditions

for development of the bank in the long term in the future due to the increase of quantities of its customers, volume growth of banking products, profit growth profit and competitiveness increase in the financial services market. Let's consider the banking marketing system in more details. Its structure is presented in Fig. 5.

**Fig. 5. Banking marketing system**



Source: compiled by the authors



Banking marketing is related practically with everyone operational processes that are carried out by any banking institution, since development of new banking products, and their realization require changes in the operating room activities in created relevant processes to improve new services for different categories of customers. This in turn also requires significant effort, time, financial resources from banks to the products they sell were of good quality, providing their was operational and customers received qualitative banking product.

Effective current system of banking marketing in modern conditions is an essential component of the software of high equal efficiency functioning banks, which is an important element of their activity, competitiveness and value as separate economic subjects.

Banking institutions in general provide non- unique services, not selling unique goods or products, and provide generally accepted, as a rule, services to which customers in a significant measure accustomed and which are provided by different types of financial institutions, and not just banks. Accordingly, this situation affects the ability banking institutions constantly create and sell new banking products or carry out new directions of banking activities. Accordingly WARNING focuses primarily on providing traditional services of commercial banks, that is, selling to their to customers credit, deposit, etc. products. This is also reflected in marketing activities of these institutions.

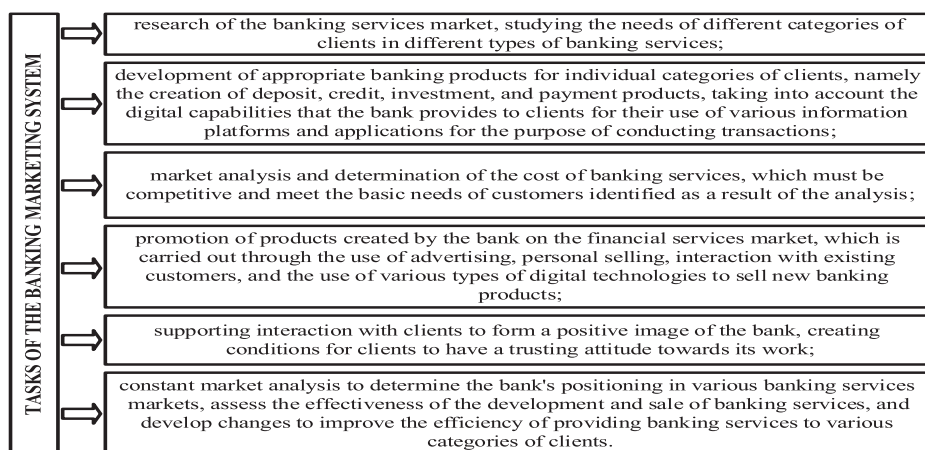
Considering the banking marketing system in more detail,

you can to single out main tasks that this system must perform that marketing activities within the bank were effective and the outlined system played its role in its strategic development. Main task systems of banking marketing are given in Fig. 6.

Within the banking marketing system, we can single out next features its functioning within the scope of any activity of the commercial bank. Among these features are worth to single out the following:

- the system is intangible and banking marketing is primarily related to promotion of intangible financial services that require appropriate implementation approach of banking products;
- the system itself unites informational and methodological provision for providing banking services in various ways, starting from the sale of banking products in physical departments and completing their sale through online platforms, official websites and mobile applications;
- immateriality system and its ambulance transformation strengthens the role of trust in the sale of banking products between clients and commercial banks;
- the system in its functioning must correspond to current regulatory and legal requirements for operation of commercial bank as a separate economic subject, and this requires consideration current advertising rules for banking products, provided competition in various banking aservices markets;

Fig. 6. Task systems banking marketing



Source: compiled by the authors

- standardization of banking services between different commercial banks determines increase roles of these systems in the image formation of the commercial bank, its reputation as an innovative institution, increasing importance of granting digital services to attract new customers and the bank's competitiveness;
- the system should be focused on selling the maximum number of different banking services to a specific client in accordance with its model of consumption of financial products, and this requires building long-term relationships with the client;
- the system must take into account importance of personalization customer relations, the need to consider its personal characteristics, differences for selling different species of banking services; namely this approach allows significantly increase product sales volumes and thereby to create conditions for the bank income growth;
- the system must actively interact with other functioning systems of the banking institution, primarily with a risk management system, since the sale of banking products in a significant measure is accompanied with assessment risks of customers, their financial condition;
- sale of various banking services requires using different approaches to marketing these services, creating conditions for the sale of relevant banking products;
- the system depends significantly from efficient use of informational technologies, because today, sales take place through various interaction channels with customers, while advertising these products is also carried out by banks both offline and through on digital channels;
- the system is related to processes software of the informational bank security and sale of banking products, interaction from customers, which is happening in this process, must also take into account possible risks, exactly informational for further functioning of the banking institution;
- the system must provide construction of effective mechanisms of informational support to customers who requires development of these mechanisms, spending financial, personnel resources for their implementation;
- functioning of systems in a significant measure is

determined by strategic landmarks of the banking institution, model its development by selling of various types banking products;

- the system must take into account current situation on the banking market services, established trends in change demand customers for different types of such services;
- the system must take into account necessary permanent assessments of efficiency of its functioning, which is to carry out through evaluation of marketing activities, primarily advertising is carried out to sell banking products and accordingly assessments of qualities by granting banking services;
- the system plays one of the important roles in forming the bank's brand, which is strategic task, affects the cost of banking institution, its competitiveness in the financial services market;
- the system in its functioning should represent to customers the main mission of the bank, its goals, role in ensuring sustainable development of society, which is important for formation of the image of the bank, which should be taken into account in modern trends of choice of banking products by customers who wish to have high-quality maintenance and attachment of banking institutions to be resolved by contemporary problems in society, etc.

As already noted in modern conditions, banking institutions actively attract digital technology to their own development. Digitalization today penetrates the subsystems of functioning of these financial institutions, changing them, improving them. In turn it changes interaction as well between subsystems of the banking institution, because each of them adapts to DT and increases quality functioning and, accordingly, forms new relationships with similar subsystems, which are also significantly affected by DT.

The important trend in digitalization of commercial banks is the key to emergence and development of digital banks, institutions that provide their activities exclusively online. With the Statista data, digital banking sector constantly will grow for the following five years. According to forecasts, in 2025 digital banks everywhere in the world will generate clean interest rate revenue of 1.61 trillion dollars. It is

expected that this indicator will grow from at an average annual growth rate of 6.80% from 2025 to 2029, reaching 2.09 trillion dollars by 2029. China is projected to lead in absolute terms, generating 528.8 billion dollars of net interest income in 2025 (Statista, 2025a). This, in turn, shapes new changes in the banking marketing system by changing approaches to use its tools, process development and implementation of marketing companies.

Analyzing the banking marketing system, we can state that in modern conditions, certain signs and features of digitalization of this system have already been formed, that is, specific directions for introduction of DT into marketing activities of the commercial bank. Their list is presented in Fig. 7.

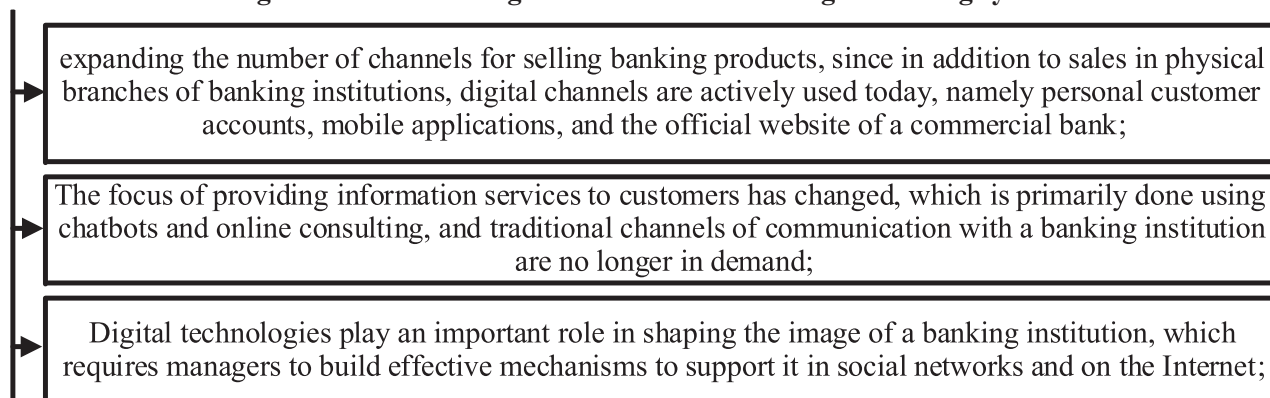
In modern conditions, a system model has been formed in the world banking marketing, which is moving to a new system for which DT become the main driver of improvement, marketing development of bank activities. DT increase the role of marketing in development of the commercial bank, form its image, provide its perception as an innovative financial institution, which has a positive impact on the competitiveness level of the banking institution. Advantages of objective application of DT today are highlighted, and significant interest of banking institutions in using these technologies both in marketing and in operations field, in informational security and in other directions of banking activities is actualized.

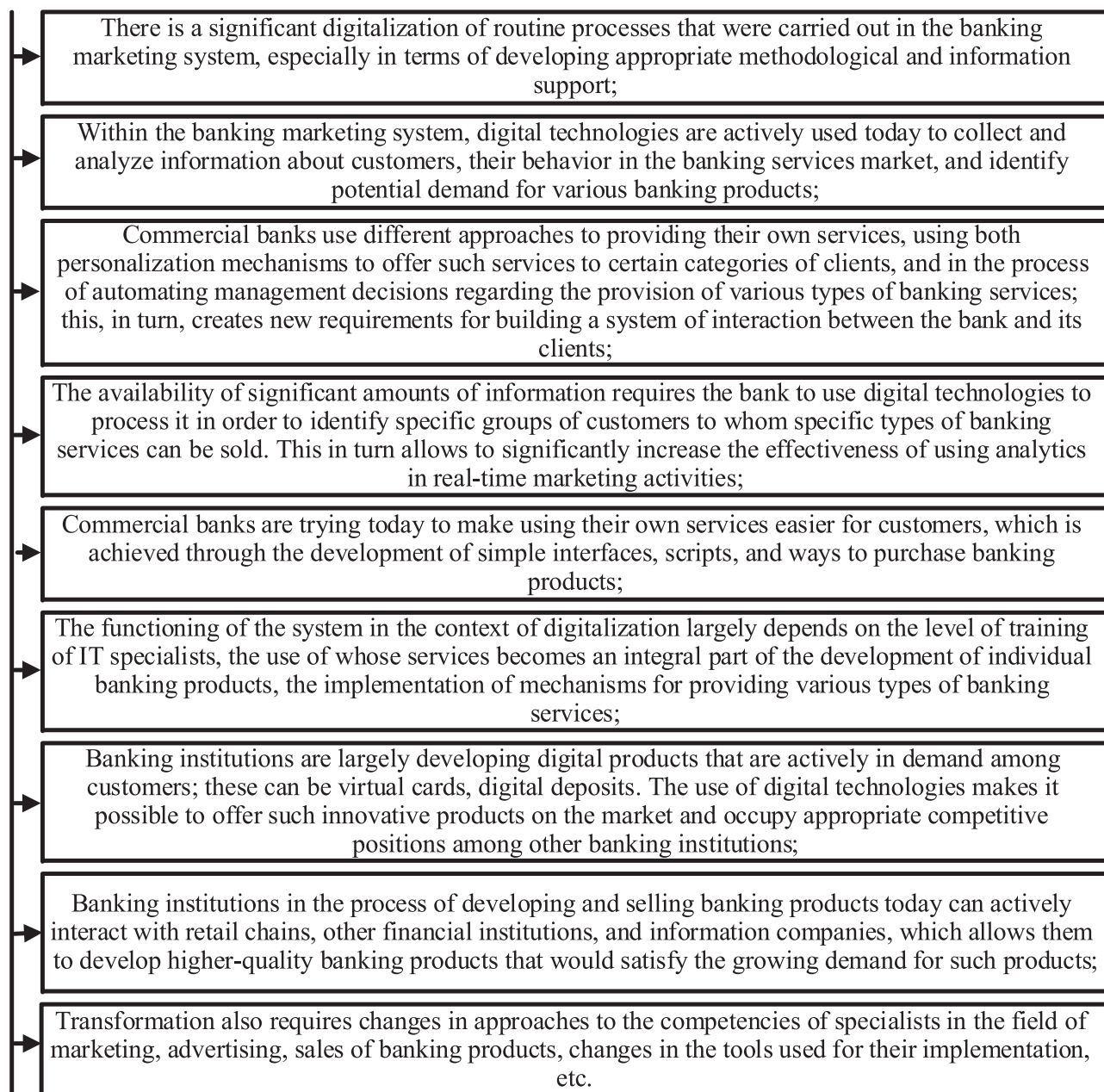
Deep penetration of DT in banking today requires from them not only transformations of the marketing system, but also comprehensive changes of approaches, paradigms to the functioning and development of these systems in new conditions, changes of approaches to the interaction management with customers, taking into account the demand for changes for banking services products and approaches to banking maintenance.

Among all DT an important role today is played by AIT, which is actively involved in banking institutions in marketing, because it allows significantly increase efficiency of functioning systems of marketing. At the same time, the decrease of operating implementation costs of relevant measures can occur while simultaneously increasing efficient implementation of different directions in promotion of banking products.

The AIT today is significantly changing the functioning of all industries and sectors of the national economy, without exception, not just activities of financial companies. According to Financial Times in 2028, revenues of large companies from use of generative AI will exceed \$1 trillion. Similar indicator in 2024 according to calculations of experts was \$45 billion. It is also noted that such world giants in digitalization and development of new informational innovations like Google, Amazon, Microsoft and Meta will spend over \$400 billion for processing centers data in 2026 – in addition to the investments they spend in 2025 – over \$350 billion (Financial Times, 2025).

**Fig. 7. Directions of digitalization of the banking marketing system**

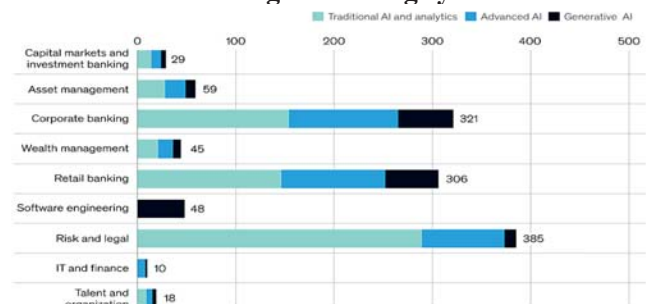




Source: developed by the authors

Fig. 8 presents data on value created by AI at stake by segment and function, the analysis of which only confirms an important role of this technology in development of the modern financial market model. Thus, AI brought the greatest income to banking institutions in corporate and retail banking, that is, in provision of classic services to households and business entities.

**Fig. 8. Directions of digitalization of the banking marketing system**



Source: McKinsey & Company (2023)



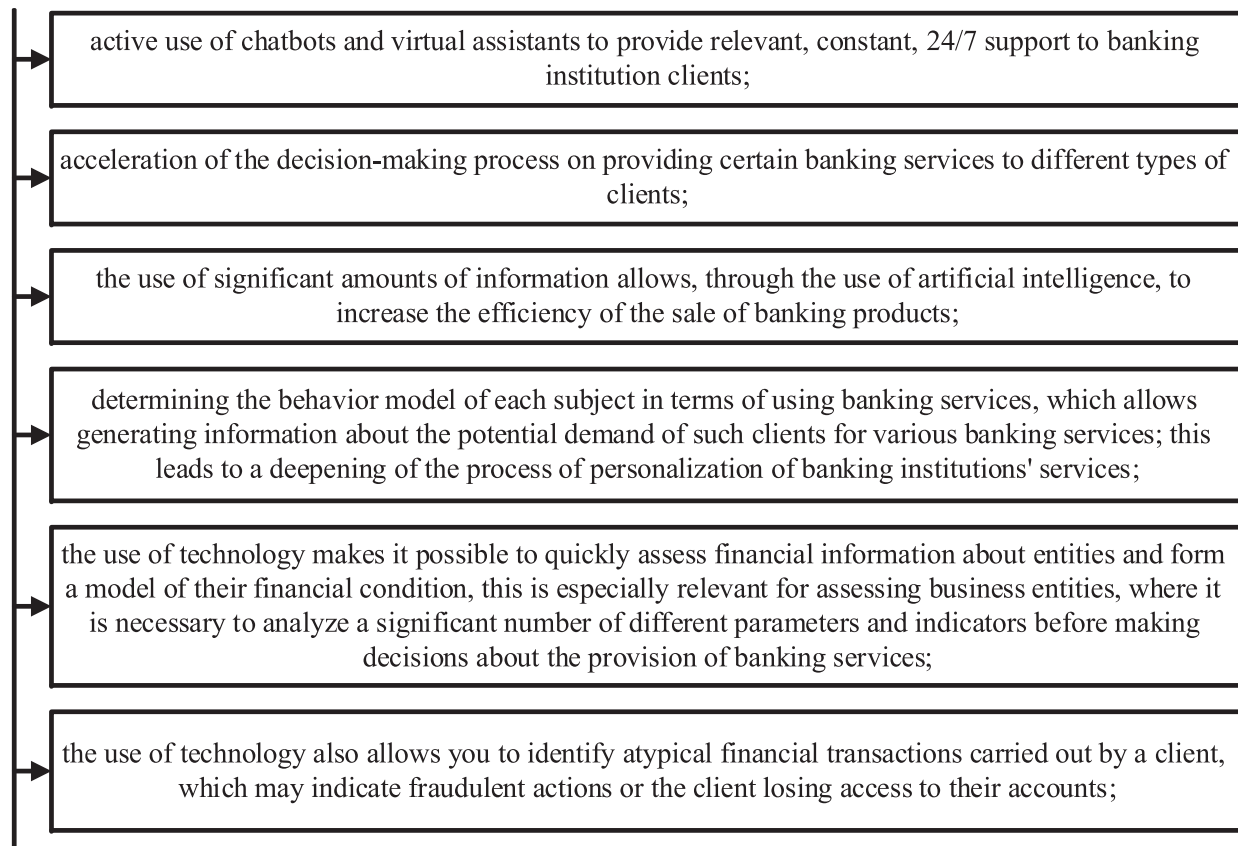
The AIT has evolved significantly and today allows changing established approaches to organization of operational processes of economic entities, organization of their interaction with other entities. At the same time, there is reduction in operating costs. However, new risks and threats to activities of entities are also being formed, which actualizes their demand for tools and products to ensure their information security.

Using AI technologies in the banking activity is not a guarantee of fast receiving of additional income and decrease of operating costs. Implementation of this technology into the work of any banking institution also requires relevant financial costs for organization, re-profiling, improvement operating processes, personnel training. That is why commercial banks, taking into account specificity of their functioning, today gradually use this technology, are being implemented in their own activity.

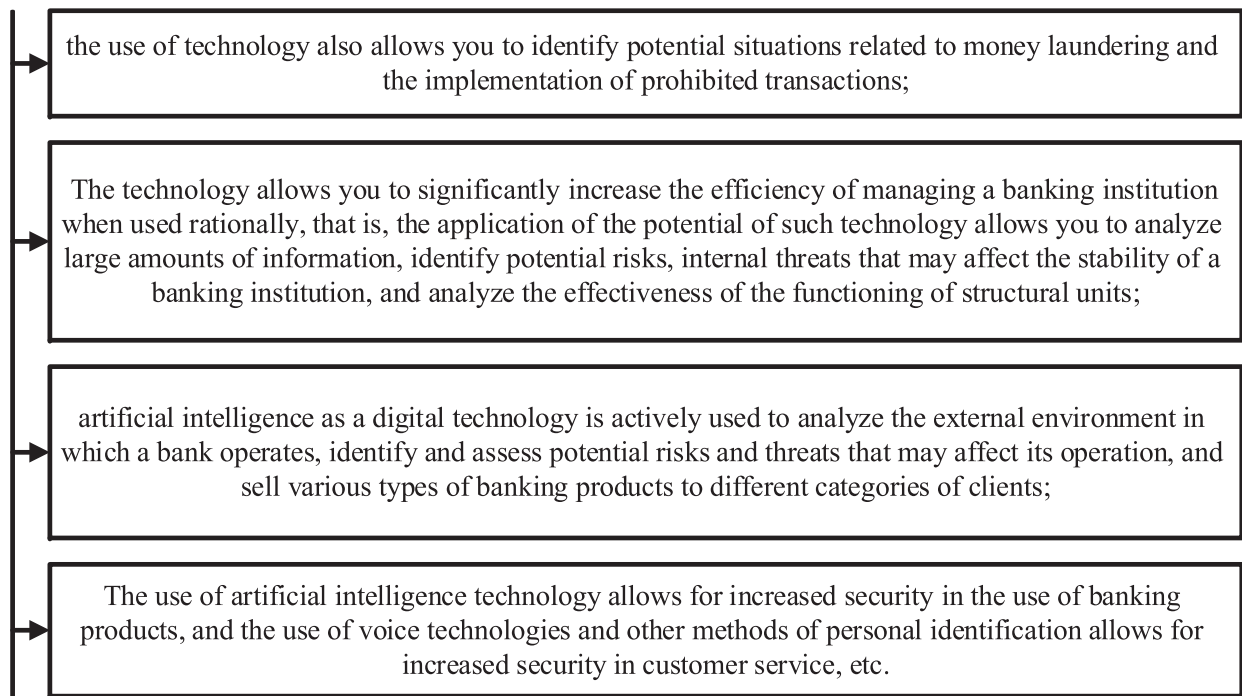
Basic directions of using AI technologies of banking institutions are shown in Fig. 9.

If we talk in more detail about transformation of the banking marketing system itself as a result of active use of the AIT, it is worth noting that banks today are really trying to adapt this technology to developing, promoting, selling banking products, and more carefully studying the consumer needs of their customers. Considering that a bank provides services to a large number of customers who may differ significantly from each other, the use of the AIT allows us to simplify analytical work on assessing the needs of these customers, separating their groups and thereby offering each of them those banking services that will be attractive to them. Accordingly, this, in turn, on the one hand, can increase complexity of ensuring the bank's operational processes, and, on the other, contribute to increasing the income of the banking institution and positive attitude of customers to its work.

**Fig. 9. Directions of using artificial intelligence technologies of banking institutions in modern conditions**







*Source: compiled by the authors*

AI transformed from a niche of the technological tool on the corner stone of marketing strategies. Given this, it is expected that world income from using AI in marketing will reach approximately 47 billion USD in 2025 and is projected to exceed 107 billion by 2028. As companies everywhere in the world more and more invest in automation and personalization of tools based on data, explosive growth of their implementation not only how companies approach marketing, but also how consumers interact with brands across the entire marketing landscape (Statista, 2025b).

Among main opportunities, consequences using AI for transformation systems of banking marketing can be singled out as follows:

- more deeper banking market analysis of services based on research of large arrays accessible and open information that allows more clearer determine the needs of customers in banking services in one or another another time;
- involved technologies to be developed in banking products taking into account similar proposals from competitors that provides a basis for further work on these products for specialists in banking institution;

- application of relevant algorithms allows the bank to provide more personalized banking products of their own to customers or potential consumers of their services;
- the use of AI makes it possible to improve the quality of interaction with customers in terms of information support, the use of chatbots, personal assistants through digital channels allows the client to feel constant support from banking institutions;
- the use of AI also allows you to analyze interaction with customers, identify their most common questions, investigate effectiveness of the construction of the communication system with different types and groups of customers, and thus change this system in accordance with new digital capabilities;
- AI maybe be used in developments of advertising companies, help to specialists in assessment target groups, analysis of the ways to advertise banking products;
- AI also allows you to analyze future trends of functioning of the banking services market, and this information gives opportunity to commercial banks to develop those products that really will be in demand and thereby strengthen own competitive positions in this market;

– the use of AI also makes it possible to analyze effectiveness of the functioning of the banking marketing system, identify the main obstacles to ensure its further effective functioning, formulate new directions for its transformation, taking into account both requirements of the banking services market and capabilities of DT, other marketing tools, etc.

In general, an important advantage of AI in the functioning of the banking marketing system is that this technology allows processing significant amounts of information. At the same time this information can with the help of this technology gather, systematize, group with subsequent detailed study. It is simplification process of analytical works that allows significantly save the time of bank specialists and focus on more creative elements of selling banking products.

It should be noted that using AI technologies in operation systems of banking marketing today corresponds to general trends of banking institutions that apply them in their activities. That is why it is very important to ensure integration between general process of digitalization activities of the commercial bank, using AI in various directions of its activities and applications of this technology precisely in functioning systems of banking marketing.

We'd like to note that in our opinion, in the future AI will deeper and deeper penetrate into functioning systems of banking marketing, the market analysis will be constantly improved, behavior of consumers in the banking market services will be studied. In great extent, AI will shape consumer demand for various banking products that will be created with consideration of digital bank's capabilities regarding granting own financial services. Let's analyze

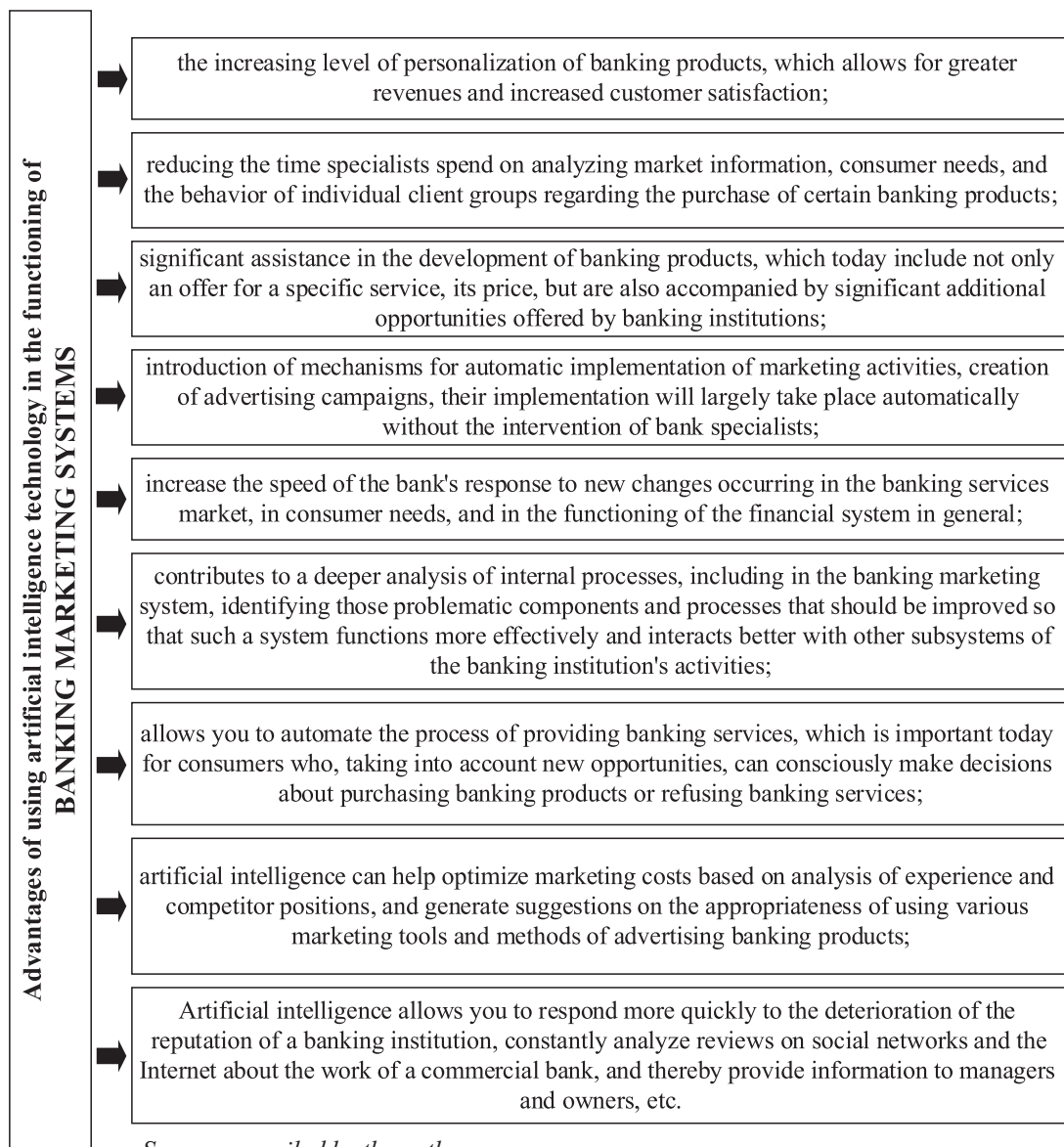
advantages and disadvantages of using AI in operation systems of banking marketing. Relevant advantages are presented in Fig. 10.

Disadvantages of using the AIT by implementing marketing activities of the banking institution are primarily related to those disadvantages that are generally inherent in the use of DT in the modern world. First, it is the necessity for involvement of resources for purchase of ready-made digital decisions, or developments of own systems for adaptation of DT into their own activities. In any case it requires investment in own activities in the long term, effects from which will not be fast.

Disadvantages of application of AI technologies in operation systems of banking marketing include the following ones:

- necessity to investing in digitalization systems of banking marketing;
- importance of available highly qualified specialists who have experience to adapt DT to activities of commercial banks and, accordingly, into the banking marketing system;
- application of the AIT requires the use of high-quality and stable Internet connection for both external and internal use that increases risk of unauthorized penetration into the bank's information system;
- application of the AIT also requires permanent support its use in the banking marketing system, improvement in order to obtain yet the best results in the future;
- the AIT is not always in its analytical forecasts take into account emotional component that is inherent consumers, various non- quantitative indicators that can characterize certain trends in the banking services market;

**Fig. 10. Advantages using the artificial intelligence technology in operation systems of banking marketing**



*Source: compiled by the authors*

- AI in functioning systems of banking marketing requires its correct application, because configuration errors of relevant algorithms can lead to financial bank expenses and the occurrence distrust of these technologies;
- application of AI technologies do not always give opportunity to provide high level of qualities service of customers; for example, not all clients wish to interact with the bank using chatbots that until are not functioning effectively. This in turn can influence attitudes of customers

to the banking institution, especially if it is quite difficult to ensure personal interaction with bank employees;

- the AIT maybe use personal information of customers to provide them with more attractive banking products, while always remains risk losses of this information, unauthorized access to it or to the results of the analysis of this information using AI technologies;
- application of AI technologies in advertising companies,

marketing activities may be related to the use of manipulation, unethical approaches to selling banking products of different categories to customers;

– use of AI technologies requires available significant quantities of informational resources, that is arrays customer data, which analysis allows with the help of this technology getting necessary customer data, data of the banking services market, their demand. Accordingly, if it does not exist truthful, correctly assembled information of the AIT maybe mistakenly give unreliable data, not complete verified information that ultimately lead to acceptance of poor quality managerial decisions;

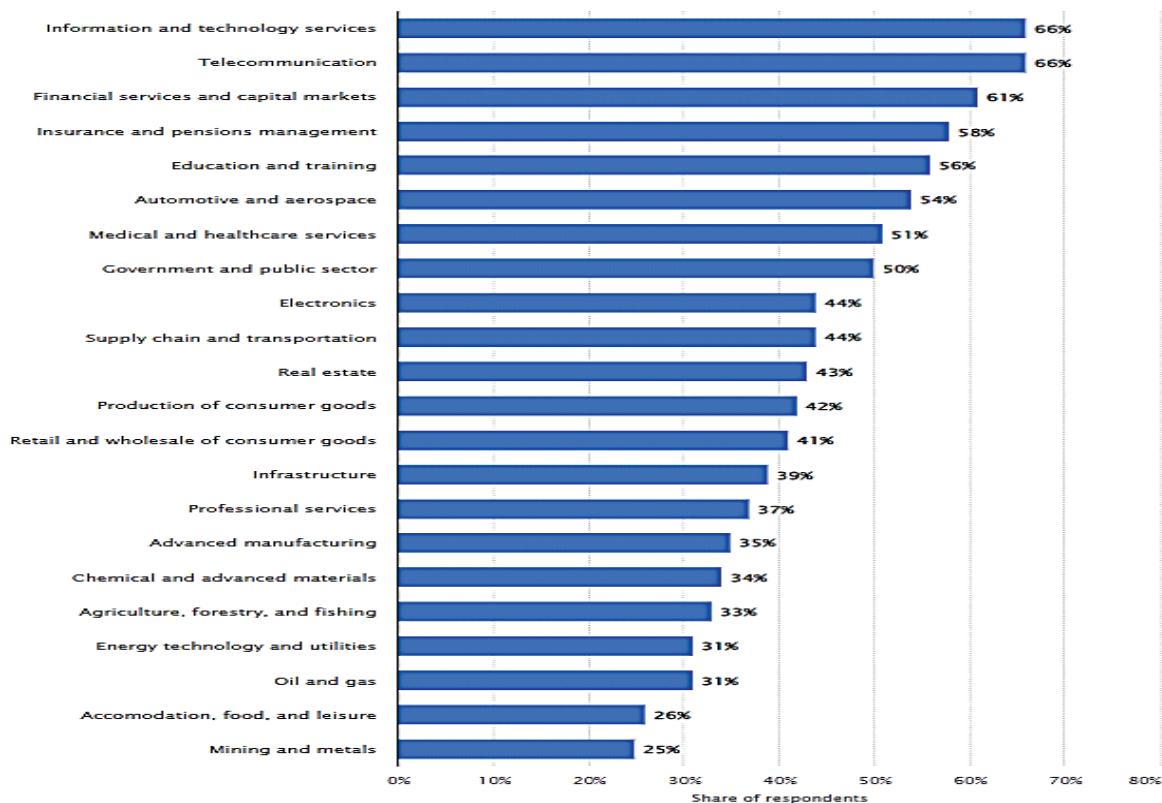
– using AI technologies are not always possible if available certain legislative, regulatory restrictions of advertising individual species of banking services, requirements for provision of these services, process customer interactions during the sale of bank products;

– use of AI technologies requires retraining or increasing

qualifications of marketers who work in a bank, equal promotion of their digital literacy, engagement of necessary specialists, etc.

It should be noted that in modern conditions, the issue of improving the skills of employees and adapting them to new business conditions that have changed due to the use of AI is becoming especially important. The specifics of its use are different in different areas, and new opportunities for its effective application are constantly emerging. Accordingly, improving the digital literacy of employees also requires significant financial resources. Fig. 11 shows data on the survey of employers on the areas of further improving the skills of their employees. In the field of finance and functioning of insurance companies, most of the owners and managers of financial institutions noted the need to increase the level of knowledge of their own employees in using AI.

**Fig. 11. Global employers view of artificial intelligence (AI) and big data as core skills within enterprises from 2025 to 2030, by industry**



Source: Statista (2025c)

## Conclusions

In accordance it is determined that availability of cyber risks in the use of the AIT of banking institutions can restrict and restrain a factor that today maybe reduce pace of using these technologies. It is logical that it is application of the AIT and implementation of mechanisms to countermeasure cyberattacks that today constantly are carried out on banking institutions, and it requires significant investment resources, implementation of stable strategies of digital transformations considering possible positive consequences for banks operation and the threats that accompany digital transformations of these institutions, including risks that are related with application of different technologies, including AI, in individual subsystems of functioning of commercial banks, including subsystem of banking marketing.

Further prospective research in the direction of functioning of banking marketing in the conditions of digitalization of financial services, including active use of DT of banking institutions, can be in the analysis of available digital marketing instruments for selling banking products considering the risks that arise when using these tools.

## References:

- Abramova, A., Shaposhnykov, K., Zhavoronok, A., Liutikov, P., Skvirskyi, I., & Lukashev, O. (2021). Ecosystem of VAT Administration in E-Commerce: Case of the Eastern Europe Countries. *Economics Studies applied*, 39(5). <http://dx.doi.org/10.25115/eea.v39i5.4909>
- 'Absolutely immense': the companies on the hook for the \$3tn AI building boom. (2025). *Financial Times*. <https://www.ft.com/content/efe1e350-62c6-4aa0-a833-f6da01265473>
- Ali, H., & Aysan, A. F. (2025). Decoding digital signals: AI sentiment and financial performance at Islamic banks. *Borsa Istanbul Review*, 25(5), 953-971. <https://doi.org/10.1016/j.bir.2025.05.011>
- Alqasa, K. M. A. (2023). Impact of artificial intelligence-based marketing on banking customer satisfaction: Examining moderating role of ease of use and mediating role of brand image. *Transnational Marketing Journal*. <https://doi.org/10.5S262/tmj.vllil.1012>
- Alzeghoul, A., & Alsharari, N. M. (2025). Impact of AI disclosure on the financial reporting and performance as evidence from US banks. *Journal of Risk and Financial Management*, 18(1), 4. <https://doi.org/10.3390/jrfml80100C4>
- Artificial intelligence (AI) use in marketing - statistics & facts. (2025b). Statista. <https://www.statista.com/topics/5017/ai-use-in-marketing/>
- Benatia, I., Bourkiza, O., Harmouch, M., & Taoune, M. (2025). AI adoption in participatory banks: How do participatory banks integrate AI to enhance customer experience and advisory relationship. *Indian Journal of Information Sources and Services*, 15(1), 366-377. <https://doi.org/10.51933/ijiss-2025.IJISS.15.1.47>
- Bharti, S. S., Prasad, K., Sudha, S., & Kumari, V. (2024). Correction to: Customer acceptability towards AI-enabled digital banking: A PLS-SEM approach. *Journal of Financial Services Marketing*, 29, 1653. <https://doi.org/10.1057/s41264-023-00250-8>
- Boyrie, M. E., & Pavlova, I. (2025). Bank acquisitions of AI and FinTech: Impact on performance. *Managerial Finance*, 51(5), 797–817. <https://doi.org/10.1108/MF-04-2024-0314>
- Burnett, S., & Kinder, K. (2025). Digital Transformation in Banking Statistics 2025: Growth, Challenges, and Opportunities. *Coinlaw*. <https://coinlaw.io/digital-transformation-in-banking-statistics/>
- Capturing the full value of generative AI in banking. (2023). McKinsey & Company. <https://www.mckinsey.com/industries/financial-services/our-insights/capturing-the-full-value-of-generative-ai-in-banking>
- Chakraborty, A., Chakravorty, S., Ramesh, D., & Shettigar, R. (2025). Smart banking using AI-STF model for a greener future: Transforming sustainable customer targeting in India's top private banks. *International Journal of Environmental Sciences*,



- 11(12s). 1729-1733. <https://doi.org/10.64252/7nw4aq82>
- Digital Banks – Worldwide. (2025a). Statista. <https://www.statista.com/outlook/fmo/banking/digital-banks/worldwide>
  - Dubyna, M., Popelo, O., Shvets, M. (2025). The role of artificial intelligence in the development of the insurance market. *Baltic Journal of Economic Studies*, 11(1), 329-341. <https://doi.org/10.30525/2256-0742/2025-11-1-329-341>
  - Dwivedi, D. N., Mahanty, G., & Dwivedi, V. N. (2024). Innovative marketing in banking: The role of AI and data engineering. In *AI and data engineering solutions for effective marketing* (pp. 409-411). IGI Global. <https://doi.org/10.4018/979-8-3693-3172-9.ch020>
  - Global employers view of artificial intelligence (AI) and big data as core skills within enterprises from 2025 to 2030, by industry. (2025c). Statista. <https://www.statista.com/statistics/1602860/ai-and-big-data-core-skills-by-industry/>
  - Grigoraş-Ichim C.E., Cosmulese C.G., Savchuk D., Zhavoronok A. Shaping the perception and vision of economic operators from the Romania – Ukraine – Moldova border area on interim financial reporting. *Economic Annals-XXI*. 2018. Vol. 173(9-10). P. 60-67. <https://doi.org/10.21003/ea.V173-10>
  - Grigoraş-Ichim, C.E., Cosmulese, C.G., Savchuk, D., Zhavoronok, A. (2018). Shaping the perception and vision of economic operators from the Romania – Ukraine – Moldova border area on interim financial reporting. *Economic Annals-XXI*, 173(9-10), 60-67. <https://doi.org/10.21003/ea.V173-10>
  - Ivanova, N., Popelo, O., Avhustyn, R., Rusak, O., Proshchalykina, A. (2022). Marketing Strategy of the Small Business Adaptation to Quarantine Limitations in the Sphere of Trade Entrepreneurship. *IJCSNS International Journal of Computer Science and Network Security*, 22(1), 149-160. <https://doi.org/10.22937/IJCSNS.2022.22.1.21>.
  - Jakubek P., Guzonova V., Rudenko O., Zahurska-Antoniuk V., Filipova N. (2023). Management control in the system of ensuring the economic security of private companies and public institutions. *Journal of interdisciplinary research*, 13(02), XXXV, 160-167. <https://doi.org/10.33543/j.130235.160167>.
  - Malhotra, S., Dhanya, K. A., Prathibha, R. M. S., & Mohanty, P. (2025). AI-driven credit assessment in banks and non-banking finance companies (NBFCs) in India: A comprehensive analysis. In *Machine learning and modeling techniques in financial data science* (pp. 275-292). IGI Global. <https://doi.org/10.4018/979-8-3693-8186-1.ch011>
  - Marhasova, V., Kholiavko, N., Popelo, O., Krylov, D., Zhavoronok, A., & Biliaze, O. (2023). The Impact of Digitalization on the Sustainable Development of Ukraine: COVID-19 and War Challenges for Higher Education. *Revista De La Universidad Del Zulia*, 14(40), 422-439. DOI:10.46925/rdluz.40.24
  - Nithya, M., Mehta, P., Vemuri, V. P., Joshi, M., & Tiwari, T. (2025). AI products in e-commerce and commercial bank. In *Advances in AI for cloud, edge, and mobile computing applications* (pp.241-263). Springer. <http://dx.doi.org/10.1201/9781003637707-15>
  - Nwaomah, A. E. (2025). Utilization of artificial intelligence (AI) and fear of job loss in the banking industry: Perspectives of bank employees. *Pan-African Journal of Education and Social Sciences*, 6(1), 88–103. <https://doi.org/10.56893/pajes2025v06i01.07>
  - Phuc, V. M., Vi, P. T., & Binh, L. A. (2025). Enhancing profitability prediction in Vietnamese commercial banks with a transparent and explainable AI approach. In *Navigating computing challenges for a sustainable world* (pp. 179 - 192) . IGI Global . <https://doi.org/10.4018/979-8-3373-0462-5.ch011>
  - Sardjono, W., & Perdana, W. G. (2023). Artificial intelligence as a new competitive advantage in digital marketing in the banking industry. In *Lecture Notes in Electrical Engineering*. [https://doi.org/10.1007/973-3-031-29078-7\\_49](https://doi.org/10.1007/973-3-031-29078-7_49)
  - Van Dyke T. (August 2024). US Payments Digital Ad Spending 2024. Strong Growth Lies Ahead, but Consumer Financial Health Concerns Persist.

- EMARKETER Forecast. <https://www.emarketer.com/content/us-payments-digital-ad-spending-2024>
- Vi, P. T., Phuc, V. M., & Binh, L. A. (2025). Credit risk prediction in Vietnamese commercial banks with an explainable AI framework using XGBoost. In *Navigating computing challenges for a sustainable world* (pp. 193 - 204). IGI Global. <https://doi.org/10.4018/979-8-3373-0462-5.ch012>
  - Viknianska, A., Kharynovych-Yavorska, D., Sahaidak, M., Zhavoronok, A., Filippov, V. (2021). Methodological approach to economic analysis and control of enterprises under conditions of economic systems transformation. *Naukovyi Visnyk National Hirnychoho University*, 4, 150-157. <https://doi.org/10.33271/nvngu/2021-4/150>
  - Wahyudi, H., Wisandani, I., Saputra, C., Lestari, W. R., & Leny, S. M. (2025). Digitalisation of Islamic Finance in the Era of Industrial Revolution 5.0: The Contribution of Crowdfunding and e-Wakaf to Islamic Fintech. *International Journal of Economics and Financial Issues*, 15(2), 46–53. <https://doi.org/10.32479/ijefi.17480>
  - Wu, F., Meekaewkunchom, N., Muanqmee, C., & Sattabut, T. (2025). Research on the impact mechanism of AI-driven supply chain creditworthiness assessment on commercial banks' credit policies for SMEs. *Future Technology*, 04(03), 45-53. <https://doi.org/10.55670/fppl.futech.4.3.5>
  - Yang, Cunyi, Chen, Li, Li, Qi, Wu, Junwei. (2025). Digitalization of banks and inclusive finance: new insights from cultural industry's financing constraints. *Financial Review*, 60(1), 71-93. <https://doi.org/10.1111/fire.12404>
  - Zhao, Y., Dai, R., & Nagayasu, J. (2025). Generative AI: The transformative impact of ChatGPT on systemic financial risk in Chinese banks. *Pacific Basin Finance Journal*, 93, 102829. <https://doi.org/10.1016/j.pacfin.2025.102829>