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FOREIGN EXPERIENCE IN THE USE OF AI TECHNOLOGY IN THE ACTIVITIES OF CREDIT INSTITUTIONS

Popelo O. V., Dubyna M. V.

INTRODUCTION

Financial sector is undergoing a profound digital transformation, centered on artificial intelligence (AI) technology. The impact of AI is especially significant in the activities of credit institutions, where traditional approaches to credit risk assessment, loan decision-making, portfolio monitoring and risk management are gradually being replaced by intelligent systems based on machine learning, generative AI and agent-based technologies. The global market for artificial intelligence in the financial sector is showing rapid growth. The use of generative AI in lending activities is especially actively developing – from the automation of the insurance process and credit scoring to the creation of early default warning systems and personalized loan offers. However, along with significant potential, serious challenges arise: model risks, algorithm bias, problems of explainability of decisions, and increased regulatory requirements.

A significant contribution to the study of this problem was made by both foreign and Ukrainian scientists. Among foreign studies, it is worth noting the study of C.Tudor[1], which analyzes the impact of AI on the transformation of credit risk management and business models of banks; D. Emin, A. Emin[2] on the role of AI in credit risk assessment in OECD and BRICS countries using System GMM and Random Forest models; as well as research by K. Goyal et al.[3], dedicated to the implementation of AI for credit scoring and fraud detection in banking services. The McKinsey study[4] highlights the rapid growth in the use of GenAI in the lending divisions of large banks.

[1] Tudor C. The Impact Of Artificial Intelligence On Credit Risk Assessment And Business Model Transformation In The Financial Sector. *Annals – Economy Series*. 2024. Vol. 6. P. 199-203.

[2] Emin D., Emin A. A. The role of AI in credit risk assessment: Evidence from OECD and BRICS. *Finance Research Letters.* 2025. Vol. 81. https://doi.org/10.1016/j.frl.2025.107499

[3] Goyal K., Garg M., Malik S. Adoption of artificial intelligence-based credit risk assessment and fraud detection in the banking services: a hybrid approach (SEM-ANN). Future Business Journal. 2025. Vol. 11. https://doi.org/10.1186/s43093-025-00464-3

[4] Embracing generative AI in credit risk. McKinsey. URL: https://www.mckinsey.com/capabilities/risk-and-resilience/our-insights/embracing-generative-ai-in-credit-risk

Ukrainian scientists are also actively researching the adaptation of these technologies in the national context. In particular, P. Puzyryova, D. Irnazarov[5] consider the peculiarities of integrating artificial intelligence into banking in the context of globalization and digital transformation; V. Zianko, T. Nechyporenko[6] analyze AI as a driver of development and modernization of the financial sector of Ukraine; M. Dubina et al.[7] focus on the role and prospects of using AI in the banking sector. In addition, a survey by the National Bank of Ukraine[8] showed that 64% of financial institutions are already using AI/ML solutions, of which 23% are active.

1. Strategic Guidelines for the Implementation of AI in the Activities of Credit Institutions

In the current conditions of digital transformation of the financial sector, the introduction of artificial intelligence in the activities of credit institutions is of strategic importance as a tool for improving the efficiency, competitiveness and quality of customer service. Realizing the AI potential requires a comprehensive approach that encompasses three interrelated dimensions: horizontal (transformation of functions and operations), vertical (optimization of business segments), and fundamental (technological base). This multidimensional strategy allows not only to integrate intelligent solutions into key business processes, but also to ensure their coordinated functioning at the level of the entire organization.

Figure 1 presents a conceptual scheme of the strategy for the AI introduction in the activities of a credit institution, which reflects the logic of interaction of these dimensions and the expected results of their implementation.

[5] Puzyreva P., Irnazarov D. Features of Integration of Artificial Intelligence into the Banking System of Ukraine. *Scientific notes of the University "KROK"*. 2025. No 1(77). Pp. 66–79. https://doi.org/10.31732/2663-2209-2025-77-66-79

[6] Zianko V., Nechyporenko T. Artificial intelligence in the financial sector of ukraine: A driver of development and a factor of modernization. *Innovation and Sustainability Articles*. 2023. Vol. 3(3). P. 6-21. DOI: https://doi.org/10.31649/ins.2023.3.6.21

[7] Dubyna M., Bazilinska O., Panchenko O., Sadchykova I., Kozlianchenko A., Tarasenko A. The Role and Prospects of the Use of Artificial Intelligence Technology in the Credit Activities OF Banking Institutions. *Review of Economics and Finance.* 2023. № 21. P. 2042-2051. URL: https://ekmair.ukma.edu.ua/server/api/core/bitstreams/44518d07-a2aa-4ca1-b52f-3b7b537f723d/content

[8] The use of artificial intelligence by participants in the financial services market of Ukraine. National Bank of Ukraine. URL: https://bank.gov.ua/ua/supervision/artificial-intelligence

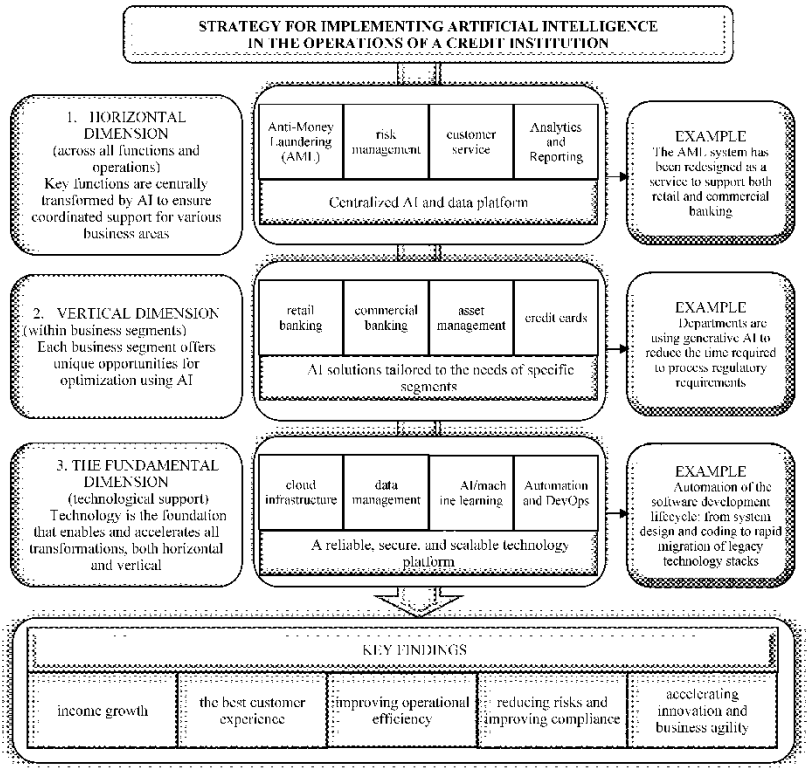

Fig. 1. Conceptual scheme of the strategy for implementing AI in the overall activities of a credit institution

**Source: generated by the authors*

The strategy for the introduction of artificial intelligence into the activities of a credit institution, which is presented in Fig. 1, is based on an integrated approach covering three interrelated dimensions – horizontal, vertical and fundamental. Its logic lies in combining the organizational transformation of business processes with technological modernization, which together provides a systemic effect from the use of AI.

First of all, the horizontal dimension involves the introduction of AI into all key functions and operations of a credit institution, regardless of a specific business area. Its essence lies in the centralization and standardization of intelligent solutions, which allows you to create a single platform for decision support. Within this approach, functions such as risk management, customer

service, compliance, analytics and reporting are transformed through the use of machine learning algorithms and processing large amounts of data. For example, an anti-money laundering (AML) system can be rebuilt as a universal service serving both retail and corporate segments. This ensures process consistency, improves the quality of control and reduces costs due to economies of scale. Thus, the horizontal dimension forms the basis for operational efficiency and integration of business processes.

The second component is the vertical dimension, which focuses on the implementation of AI within individual business segments of a credit institution. Its key difference lies in the adaptation of technologies to the specifics of each segment, which allows you to maximize their applied potential. In particular, in retail banking, AI can be used to personalize loan offers, automate customer scoring, and predict their solvency; in corporate banking – to assess the financial condition of enterprises and manage credit risks. Therefore, the vertical dimension ensures an increase in the efficiency of specific business processes, forming added value in each segment.

The third key element is the fundamental dimension, which acts as the technological basis of the entire strategy. Whether it's horizontal or vertical transformations, it's the technological infrastructure that determines the speed, scale, and effectiveness of AI adoption. Its main components include cloud solutions, data management systems, artificial intelligence and machine learning tools, as well as mechanisms for ensuring cybersecurity and automation of development processes (DevOps). Of particular importance is the ability to automate the full software life cycle – from designing and writing code to modernizing legacy systems, which can significantly reduce the time to implement innovations, reduce the cost of maintaining the IT infrastructure and ensure its flexibility. Thus, the fundamental dimension creates the necessary prerequisites for scaling AI solutions and their effective integration into the activities of a credit institution.

The interaction of these dimensions forms a holistic model of transformation: the technological base (fundamental level) provides possible AI implementing, the horizontal dimension guarantees the consistency and standardization of processes, while the vertical dimension guarantees their adaptation to the specifics of individual business areas. As a result, the credit institution receives a comprehensive effect, which is manifested in the growth of operational efficiency, improvement of the quality of customer experience, reduction of risks and acceleration of innovative development. It is this integrated strategy that allows you to fully realize the potential of artificial intelligence in the field of financial services.

2. Analytical Characteristics of Leading Credit Institutions Based on the Results of the Evident AI Index 2025

Effective implementation of artificial intelligence in the activities of a credit institution is possible only under the condition of synchronous development of horizontal, vertical and fundamental dimensions. Practical verification of this model is demonstrated by the international benchmark Evident AI Index (2025), which assesses the level of AI maturity in the world's 50 leading banks according to four key components: talent, innovation, leadership, and transparency. It is these components that actually reflect the fundamental (technological base), horizontal (scaling functions) and vertical (sectoral applications) dimensions of the strategy. Thus, the results of the index allow us to empirically confirm the effectiveness of the proposed model and identify the leading banks that most successfully implement a comprehensive AI strategy (Table 1).

Table 1

TOP-10 lending institutions according to the Evident AI Index 2025[9]

No.	Bank	Country	Overall score	Talent (place)	Innovation (place)	Leadership (place)	Transparency (place)
1	JPMorgan Chase	USA	79.0	2	1	1	1
2	Capital One	USA	78.1	1	2	20	17
3	Royal Bank of Canada	Canada	58.4	12	3	3	3
4	Common Bank	Australia	53.9	4	13	4	2
5	Morgan Stanley	USA	52.2	13	4	9	21
6	Wells Fargo	USA	50.9	6	5	40	4
7	UBS	Switzerland	50.2	3	25	7	6
8	HSBC	United Kingdom	49.8	14	8	15	23
9	Goldman Sachs	USA	49.0	7	9	18	24
10	Bank of America	USA	48.8	10	7	8	25

The analytical characteristics of leading credit institutions according to the results of the Evident AI Index 2025 indicate that their leadership is due not to individual technology implementations, but to the systematic implementation of a comprehensive AI strategy, which is consistent with the

[9] Evident AI Index. Edition. 2025. URL: https://evidentinsights.com/ai-index/

three-level model (horizontal, vertical and fundamental dimensions) presented in Fig. 1. In particular, JPMorgan Chase holds the top spot due to the deep integration of AI into all business processes, which is manifested in significant investments in data and infrastructure, scaling AI solutions at the entire organization, and their active application in lending, risk management, and investment activities. This approach demonstrates a complete synergy between the technological base, centralization of functions, and industry applications, which actually reflects the reference model of AI implementation.

Capital One ranks second due to its strong human resources and innovation capabilities that enable rapid scaling of machine learning-based solutions. Its strategy is based on the development of its own AI teams and the creation of intelligent products, which reinforces the fundamental dimension of transformation and creates prerequisites for further integration of AI into all areas of activity. Royal Bank of Canada demonstrates a more balanced approach, combining strategic management, measuring the effectiveness of AI and its practical application in various segments, which allows for both horizontal consistency of processes and vertical depth of implementation.

Commonwealth Bank is distinguished by its emphasis on technological infrastructure and the responsible use of AI, which forms a solid foundation for scaling innovation and increases trust in digital solutions. Morgan Stanley, in turn, demonstrates the active use of generative AI in the field of investment consulting, which indicates the deep integration of technologies into specific business areas and the strengthening of the vertical dimension of the strategy. Wells Fargo focuses on optimizing internal processes and automating operational activities, which allows you to increase the efficiency of the bank's functioning at the horizontal level.

European lending institutions, in particular UBS and HSBC, are characterized by a greater focus on transparency, ethics and regulatory compliance in the use of AI, which determines their strong position in risk management and customer trust, although sometimes restraining the pace of innovation. Goldman Sachs focuses on the innovation component, actively implementing AI in financial markets and investment activities, which strengthens its vertical profile, but the relatively lower level of transparency affects the overall position in the ranking. Bank of America demonstrates a focus on customer experience through the development of digital services and AI solutions in the service sector, which provides enhanced customer interaction and expansion of service delivery channels.

Thus, the key characteristic of leading banks is the ability to combine investments in the technological base, scaling AI at the level of the entire organization and its adaptation to the specifics of individual business

segments. It is this integration of fundamental, horizontal and vertical dimensions that ensures the achievement of a synergistic effect, which is manifested in the growth of operational efficiency, improvement of customer experience and improvement of the quality of risk management.

3. Strategic Model for Implementing Artificial Intelligence in Credit Institution Services

In the context of the digital transformation of the financial sector and increased competition in the credit services market, the introduction of artificial intelligence is becoming not only a technological innovation, but a strategic necessity for credit institutions. The use of AI can significantly change the traditional business model of banking, reorienting it to customer-centric management and platform approaches to the provision of services. In this context, the formation of an effective strategy for the implementation of AI in the services of a credit institution involves a coordinated combination of changes in customer experience and investment and technological support, which together ensures the transformation of key business processes. The proposed strategy reflects the logic of transition from investments in digital infrastructure and analytical tools to the formation of a new quality of interaction with customers, which is manifested in the personalization of services, digitalization of service channels and the development of platform solutions, while ensuring an increase in efficiency, revenues and stability of the credit institution (Fig. 2).

The proposed strategic model for the introduction of artificial intelligence in the providing services to a credit institution reflects the holistic logic of transforming the business model under the influence of digital technologies and is based on the interaction of two key vectors – the development of customer experience and investment and technological support. It is based on the understanding that investments in artificial intelligence, data, and digital infrastructure have no value in their own right without their direct integration into customer value creation processes. That is why the model demonstrates a causal relationship between technological decisions and changes in customer behavior, expectations and experience.

On the one hand, the investment and technology vector forms the foundation of transformation, covering the development of hybrid cloud infrastructure, the introduction of machine learning tools, the use of generative artificial intelligence, and the construction of open platforms based on the API economy. These components provide scalability, data processing speed, integration flexibility, and the ability to create new digital products. Thanks to this, the credit institution gains the ability to automate key processes, increase the accuracy of decision-making in the field of lending and risk

management, as well as effectively interact with partners within digital ecosystems.

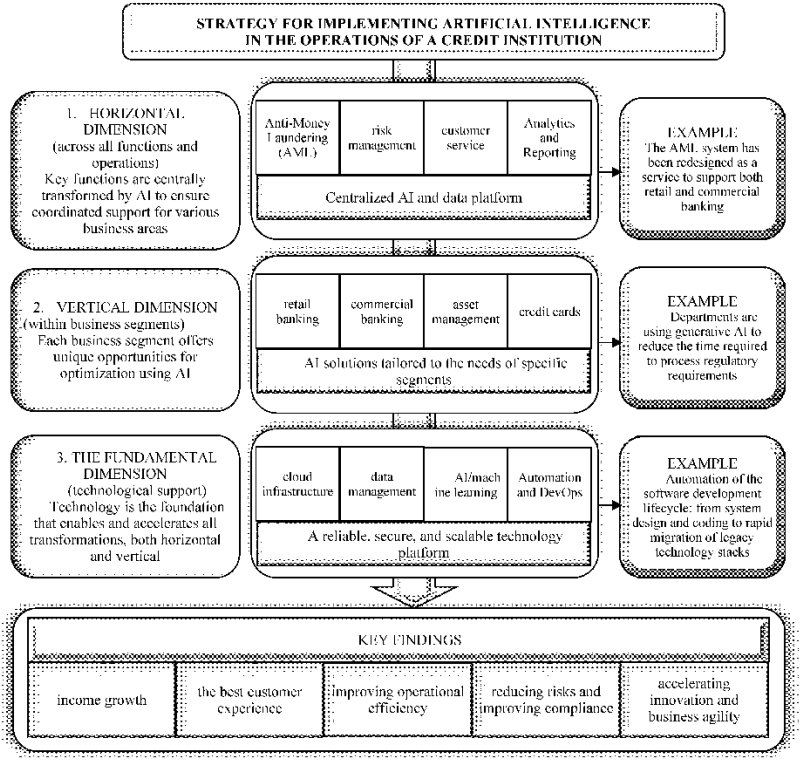

Fig. 2. Strategic model for the introduction of artificial intelligence in the services of a credit institution

**Source: generated by the authors*

On the other hand, the vector of customer experience development reflects the practical implementation of these technological opportunities in interaction with customers. Within the framework of the model, there is a gradual transition to digital service formats, which is accompanied by an increase in the share of remote channels and a reduction in the role of physical branches. The use of data analytics and artificial intelligence algorithms ensures the personalization of services, reducing operational friction and increasing the relevance of offers. At the same time, the nature of communication is changing, which becomes more interactive and continuous thanks to the use of chatbots and generative models, which allows for real-

time service. An important element is also platforming, in which credit products are integrated into other digital services, which expands the channels of access to customers and creates new monetization opportunities.

The interaction of these two vectors forms a closed cycle of value creation, namely: investments in artificial intelligence and digital infrastructure generate new technological opportunities that transform the customer experience through personalization, digitalization and platforming of services. In turn, the improved customer experience drives revenue growth, increased customer loyalty, and lower costs, which creates resources for further technology investments. Thus, the model reflects not the linear, but the cyclical nature of development, in which artificial intelligence acts as a key driver of sustainable growth of a credit institution.

Thus, the implementation of this model ensures the achievement of three interrelated economic effects: increased operational efficiency through process automation, revenue growth through personalization and expansion of sales channels, and risk reduction through more accurate analytics and forecasting. This confirms that the strategic implementation of artificial intelligence is not a separate technological project, but a comprehensive transformation of the entire system of functioning of a credit institution.

In today's financial sector, artificial intelligence is moving from experimental use to the stage of mass implementation in key business processes. If the previous model substantiates the strategic logic of AI integration through a combination of client and technological vectors, then the actual structure of its application demonstrates which areas of transformation have become priorities for credit institutions. The distribution of AI use cases by the share of implementation reflects not only technological capabilities, but also the economic feasibility of their application, since credit institutions primarily invest in those solutions that provide the maximum effect in reducing costs, managing risks and increasing revenues (Fig. 3).

The most common use of AI is fraud detection (55%), which covers more than half of credit institutions. This level of penetration is due to the high cost of fraudulent transactions and the critical need for their prompt detection. The use of machine learning algorithms allows you to analyze transactions in real time, identify atypical patterns of customer behavior, and respond to potential threats much faster than traditional rules. This acceleration, which can reach hundreds of times, forms a significant economic effect due to minimizing financial losses and increasing the level of security.

An important place is occupied by the automation of back-office processes (39%), which is also actively implemented in a significant part of banks. We are talking about document processing, KYC procedures, customer onboarding, and regulatory compliance. In this case, AI performs the function

of optimizing routine operations, reducing the need for manual labor and reducing information processing time. As a result, credit institutions get the opportunity not only to reduce operating costs, but also to increase the speed of customer service, which directly affects their competitiveness.

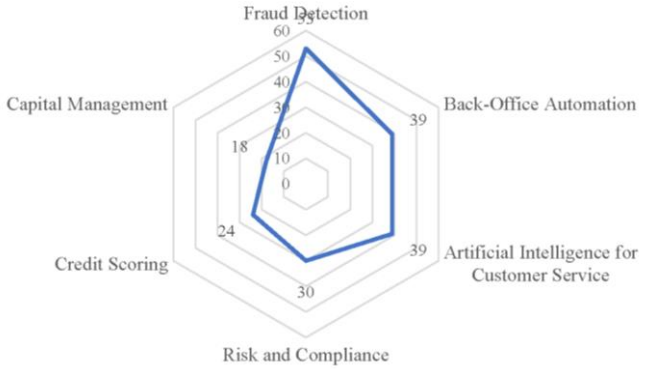

Fig. 3. Options for the AI use by credit institutions by the share of adoption in 2026

**Source: generated by the authors*

At the same time, the use of artificial intelligence in the field of customer service is gaining significant development. Chatbots and virtual assistants provide continuous interaction with customers, allowing you to automate a significant part of requests without involving staff. The economic effect in this case is manifested in a significant reduction in maintenance costs, which can reach tens of percent, as well as in an increase in the availability of services. At the same time, this is in line with the general trend towards a more personalized and interactive customer experience.

The field of risk management and compliance also remains one of the key areas of application of AI. Credit institutions use intelligent systems to monitor financial transactions, assess credit risk and ensure regulatory compliance. In this context, AI allows not only to increase the accuracy of assessments, but also to quickly respond to changes in the external environment, which is especially important in the context of instability in financial markets.

A separate role is played by credit scoring (24%), which is one of the most transformed processes under the influence of artificial intelligence. Thanks to the use of large data sets and complex analysis algorithms, banks can significantly reduce the time for making credit decisions – from several days to a few minutes, which not only increases the efficiency of internal processes,

but also improves customer access to financial resources, while reducing risks due to more accurate forecasting of solvency.

Less common, but promising direction is money management using AI, in particular through the introduction of robo-advisors and automated portfolio management systems. This segment is focused on improving the quality of investment decisions and expanding customer access to financial instruments. Although the adoption rate is still lower compared to other areas, its growth potential is significant, especially in the context of the development of digital ecosystems and personalized financial services.

In general, the structure of the implementation of artificial intelligence in the field of activities of credit institutions confirms that the priority areas are those that directly affect the reduction of risks and costs, while more complex and innovative applications are gradually gaining momentum. This is consistent with the overall strategy of digital transformation, where AI acts as a tool not only for technological development, but also for increasing the economic efficiency of credit institutions.

In the context of the implementation of the strategic model for the AI introduction in the activities of credit institutions (Fig. 1), the dynamics of the development of the AI market in Fintech is a key macroeconomic indicator that determines the scale and speed of transformation processes in the financial sector. Growth of the global AI market in Fintech during 2021–2031 reflects not only the increase in demand for intelligent solutions, but also the transition from targeted innovations to the systematic integration of AI into all levels of lending activities. Figure 4 presents the relevant dynamics, demonstrating sustained exponential growth at a compound annual rate (CAGR) of 22%.

The AI market in finance has experienced explosive growth over the past five years. Starting from about $9.5 billion. In 2021, the market exceeded USD 36.6 billion. in 2026 – almost 4 times more in five years, growing at an average annual growth rate of 22.04% to USD 99.09 billion. until 2031.

The analysis of these indicators indicates a significant acceleration of the market development. If in 2021 its volume amounted to USD 9.5 billion, in 2025, it increased to USD 28.8 billion, that is, more than tripled in four years. Further dynamics demonstrate an even more pronounced scaling effect: in 2031, it is expected to reach the level of USD 99.1 billion, which means more than tenfold growth compared to the base period. It is important that the increase is not linear, but accelerated, which indicates the accumulation of technological potential and the effect of network diffusion of innovations in the financial system.

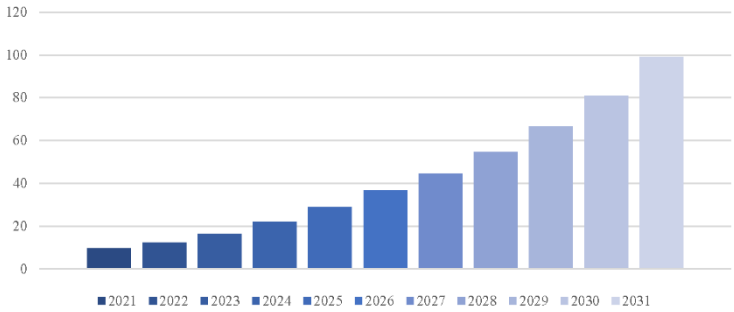

Fig. 4. The size of the AI market in Fintech – 2021–2031 (USD billion, 22% CAGR)[10]

**Source: systematized by the authors*

The period after 2023 is especially indicative, when the growth rate increases markedly. This is directly related to the proliferation of large language (LLM) models, which have begun to be actively integrated into financial workflows. Their use made it possible to automate analytical operations, improve the quality of customer interaction and significantly speed up information processing, which, in turn, increased the efficiency of business processes of credit institutions. Thus, it is LLMs that have become one of the key drivers of the transition from traditional AI solutions to more complex, generative models, which corresponds to the development of the fundamental dimension of the strategy.

The second important growth factor is the increase in regulatory pressure, which forces credit institutions to modernize compliance and risk management systems. In these conditions, artificial intelligence is becoming a necessary tool for regulatory compliance, as it allows you to automate the monitoring of transactions, risk analysis and detection of suspicious activity, which stimulates investments in technological infrastructure and contributes to the AI spread in the horizontal dimension of the activities of financial institutions.

The third key accelerator is the proven cost-effectiveness of using AI in fraud detection. The use of intelligent algorithms allows you to reduce the cost of detecting fraudulent transactions by about 60% when reaching an accuracy level of about 96%. This result forms a powerful investment incentive for banks, as it directly affects their financial stability and risk level. Accordingly,

[10] Artificial intelligence (AI) in finance – 2026 statistics, use cases & market data. URL: https://businesstats.com/ai-in-finance/

it is the area of risk management that is one of the key drivers of AI scaling in the financial sector.

At the same time, it is worth noting that market growth is supported not only by demand from financial institutions, but also by the active participation of technology companies that ensure the development of artificial intelligence infrastructure. Their investments in cloud solutions, computing power, and data processing platforms create the technological basis for scaling AI solutions in fintech.

Thus, the dynamics of the AI market in fintech confirms the transition to a new model for the development of the financial sector, where artificial intelligence is a key growth factor. The combination of technological innovations, regulatory requirements and proven economic efficiency forms a steady trend towards further expansion of the use of AI, which is fully consistent with the strategic model of its implementation in the activities of credit institutions.

In the activities of credit institutions, the results of the use of various types of artificial intelligence form an evolutionary trajectory of digital transformation – from the automation of individual operations to the construction of autonomous intelligent systems capable of independent decision-making and interaction with customers. Each of the approaches – traditional, generative, and agent-based AI – provides effects of different depth and scale, which together determine the maturity level of the credit institution's AI strategy.

Traditional artificial intelligence in banking primarily provides an increase in the accuracy and efficiency of decision-making in structured processes. Its application in credit scoring, risk management and fraud detection allows you to process large amounts of data and form more reasonable conclusions compared to classical statistical methods. The result is a reduction in the level of credit losses, an increase in the accuracy of predicting customer solvency, and a reduction in transaction processing time. In the field of compliance and financial monitoring, traditional AI helps automate control and improve the quality of detecting suspicious transactions. Thus, the main effect of its use is to reduce risks and operating costs, which corresponds to the fundamental and horizontal dimensions of the strategy.

Generative AI is shaping a new interaction level with customers and internal processes, enabling content creation, automation of communication, and increased personalization of services. In credit institutions, generative AI is used to build chatbots and virtual assistants that are able to conduct a natural conversation, provide advice, help in choosing loan products, and accompany the client at all stages of service. In addition, generative AI is used to automatically generate loan proposals, prepare analytical reports, and process

documents. The result is a significant reduction in maintenance costs, increased request processing speed, and increased customer satisfaction. In the strategic dimension, this means strengthening the vertical component, since technology directly affects the creation of customer value.

Agent-based AI is the next stage of development, combining the analytical capabilities of traditional AI with generative functions, complementing them with the ability to autonomously perform complex multi-step tasks. In the banking sector, agent systems can independently manage lending processes, starting from collecting and analyzing information about the client and ending with making decisions on granting a loan and subsequent monitoring of its maintenance. Agent-based systems are able to coordinate interaction between different systems, initiate the necessary actions, adapt to changes in the environment and optimize processes in real time. The result of the introduction of agent-based AI is a radical increase in productivity, a decrease in dependence on human intervention, and a transition to a proactive management model, when the system not only responds to events, but also anticipates them. This forms a new level of integration of all three dimensions of the strategy – fundamental, horizontal and vertical – and actually means the transformation of the credit institution into an intelligent digital platform.

Thus, traditional AI provides efficiency and control, generative AI provides customer experience and scaling services, while agent-based AI builds autonomy and strategic flexibility. Their combination creates a synergistic effect that determines a new quality of functioning of credit institutions in the digital economy.

In the context of the strategic transformation of credit institutions focused on the introduction of artificial intelligence, the dynamics of venture investments in technology companies is an important indicator of changes in the priorities of the banking sector. Figure 5 reflects the structural restructuring of banks' investment portfolios in favor of AI solutions, in particular generative and agent-based artificial intelligence. This is consistent with the general trend of recovery in venture capital activity after the 2023 downturn and outstripping growth in AI investments, the average annual rate of which exceeds the dynamics of the technology market as a whole.

The analysis of indicators indicates a clear change in the investment structure. In 2021, the vast majority of deals were for non-AI-related technologies (162 deals), while traditional AI was the second largest (94 deals) and generative and agent-based AI were in the early stages of development (only 5 deals). Already in 2022, there is a decrease in interest in non-AI technologies and traditional AI, while the number of deals in the generative and agent-based AI segment is doubling. This indicates the beginning of a reorientation of investors to more innovative areas.

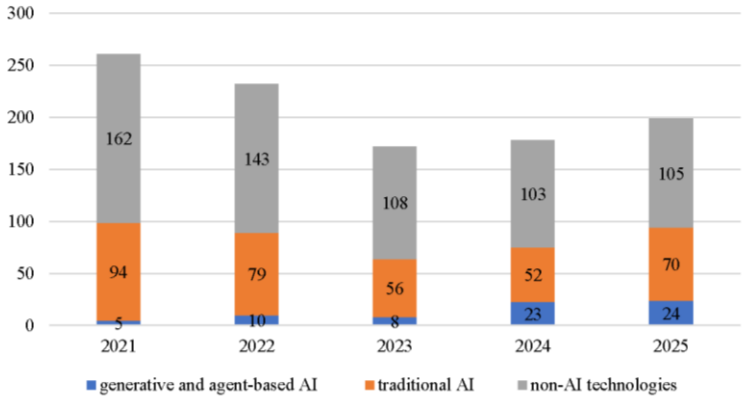

Fig. 5. Number of venture investments in the banking sector: general and agency, traditional AI and non-AI, units [11] [12] [13]

In 2023, the general decline in investment activity, which manifests itself in a decrease in the number of deals in all categories, reflects macroeconomic uncertainty and temporary restraint in venture financing. At the same time, even during this period, the segment of generative and agent-based AI demonstrates relative stability, which confirms its strategic prospects. Starting in 2024, there is a sharp increase in interest in these technologies: the number of deals almost triples compared to the previous year and reaches 23, and in 2025 – 24 deals. Thus, in five years, this segment has grown almost six times, which is fully in line with the global trend of active development of GenAI and Agentic AI.

At the same time, there is an interesting dynamic of traditional AI. After a gradual decline in 2021–2024 due to the saturation of the market with basic solutions, in 2025 it will recover (70 deals), which indicates a rethinking of the role of traditional AI solutions as a basic level for the integration of more complex technologies, in particular generative and agent-based systems. At the same time, the number of deals in the field of non-AI-related technologies shows a steady downward trend, which confirms the general trend of replacing traditional technologies with intelligent solutions.

[11] AI Venture Trends in Banking. URL: https://evidentinsights.com/insights/venture-tracker-february-2026

[12] AI Use Case Trends in Banking. URL: https://evidentinsights.com/insights/use-case-trends-q4-2025

[13] Global Outlook for Banking and Financial Markets. 2025. URL: https://www.ibm.com/downloads/documents/us-en/115dcc7faf363f21

Thus, venture investments of financial institutions are gradually shifting from traditional technologies to innovative AI directions, and it is generative and agent-based artificial intelligence that are becoming the key drivers of this process. Their rapid growth indicates the formation of a new stage in the development of financial technologies, in which AI is moving from an optimization tool to the basis for creating new business models. This is directly aligned with the strategic model of AI implementation, where the combination of fundamental technologies and customer-centric solutions determines the competitiveness of credit institutions in the long term.

In the context of strengthening the role of artificial intelligence in the financial sector, venture activity of credit institutions is an important indicator of their strategic priorities and readiness for technological transformation. The number of deals in the field of AI reflects not only the investment opportunities of lending institutions, but also their ability to integrate innovations into their own business models. A feature of the current stage is the dominance of American banks in the field of venture investment in AI, which is due to both the scale of financial resources and the high level of development of the technological ecosystem. In this context, the analysis of leading banks by the number of AI transactions allows us to identify key centers of innovation activity and understand the features of their strategies (Fig. 6).

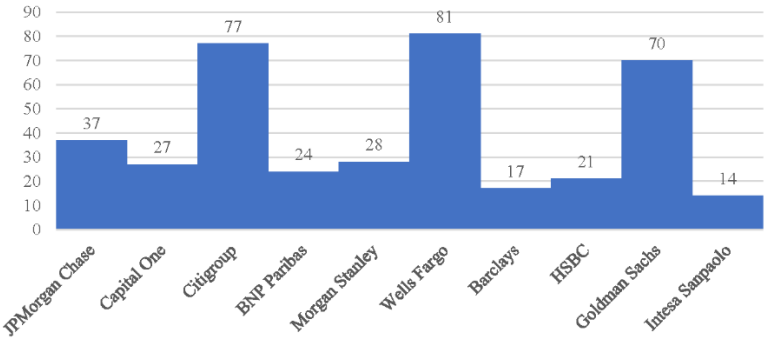

Fig. 6. Top 10 credit institutions by the number of venture agreements in the field of artificial intelligence for 2021–2025, units[14]

[14] Banking in the AI era. The risk management of AI and with AI. IBM Institute for Business Value. URL: https://www.ibm.com/downloads/documents/us-en/1377429fe5bde65a

Figure 6 indicates a significant concentration of venture activity in the field of artificial intelligence among a limited number of global financial institutions, with institutions from the United States occupying dominant positions. Six of the ten institutions included in the ranking are of American origin, confirming their leading role in shaping the global market for AI investments in the financial sector. This dominance is explained not only by the scale of financial resources, but also by access to developed innovation infrastructure and a high concentration of technology companies.

Wells Fargo demonstrates the highest number of deals, which is associated with the use of specialized investment platforms focused on financing technology startups. This approach allows the bank to systematically integrate innovations and form a diversified portfolio of AI solutions. Citigroup also occupies a high position, which is characterized by stable investment activity and the presence of one of the largest technology portfolios, which provides it with a sustainable competitive advantage in the field of digital finance. Goldman Sachs, in turn, combines strategic and financial approaches to investing, which allows not only to receive a profit on investments, but also to integrate innovative solutions into its own activities.

Other U.S. banks such as JPMorgan Chase, Morgan Stanley, and Capital One are also showing significant activity, however, their strategies have some differences. JPMorgan Chase focuses on scaling innovation within its own ecosystem, while Morgan Stanley actively uses investments to develop specialized financial services. Capital One, despite the smaller number of transactions, is distinguished by a high investment intensity, which indicates a more focused and targeted approach to the development of AI.

European banks, including BNP Paribas, Barclays, HSBC, and Intesa Sanpaolo, show lower levels of activity compared to U.S. institutions, but their participation in venture capital investments remains an important component of digital transformation. Among them, it is worth highlighting HSBC, which, along with Capital One, is characterized by a high intensity of investments in AI, which indicates a strategic focus on the development of this area, despite relatively smaller transaction volumes.

In general, the analysis shows that the number of venture deals in the field of artificial intelligence is an important indicator of the strategic activity of credit institutions in the direction of digital transformation. The dominance of U.S. institutions is indicative of their ability to adapt more quickly to technological changes, while other players are gradually building up their presence. This confirms that investing in AI is becoming a key factor in shaping competitive advantages in the global banking sector.

2026 is a turning point in the development of artificial intelligence in the financial sector. After a period of experiments and pilot projects (2023–2025), lending institutions are moving to production-scale deployment of AI

technologies. According to Finastra[15] and Accenture[16], most leading financial institutions no longer see AI as an auxiliary tool, but as a fundamental basis for transforming business models, operational efficiency, and customer experience.

In 2026, the key drivers of change are the transition from reactive systems to proactive and autonomous ones, the combination of different types of AI (predictive, generative, and agentic), as well as increased requirements for transparency, understandability, and responsible use of technology. The global financial AI market continues to grow rapidly, and financial institutions that effectively integrate AI demonstrate higher operational efficiency (up to +20%), better competitiveness, and the ability to offer customers truly valuable services.

The key trends for the future of finance in the artificial intelligence are: hyper-personalization, generative AI, agent-based AI, fraud detection and cybersecurity, as well as the role of AI in the sustainable development of lending institutions.

1. Hyper-personalization goes far beyond traditional customer segmentation. Credit institutions use a combination of predictive analytics, real-time data (from open banking, transactions, behavior) and generative AI to offer customized financial solutions exactly at the moment of customer need. The key manifestations of the trend are:

1) context-sensitive recommendations – the lending institution "knows" that a customer needs a travel loan even before they start planning a trip;

2) personalized financial advice in real time (personal financial management – PFM), dynamic adjustment of budgets, investment portfolios or loan proposals;

3) using predictive AI to predict customer needs and proactive interaction.

As a result, a credit institution receives an increase in customer loyalty and wallet share, an increase in the conversion of credit and deposit products, a transition from mass marketing to "invisible" personalization, which is felt as human care. Hyper-personalization has become one of the main competitive advantages, customers are ready to change credit institutions if AI does not offer relevant and timely solutions.

2. Generative AI (GenAI) is no longer just a content creation tool and becomes the "brain" of many operational processes in credit institutions.

The main areas of application of GenAI in credit institutions are:

1) automatic generation of credit memoranda, analysis of financial reports, synthesis of unstructured data (PDF, news, business plans);

[15] AI in banking and financial services: Trends for 2026. URL: https://www.finastra.com/viewpoints/articles/future-of-ai-in-financial-services-2026

[16] Agentic AI and the future of work in financial services. URL: https://bankingblog.accenture.com/agentic-ai-future-of-work

2) preparation of personalized reports, explanations of credit decisions and responses to customers;

3) data augmentation – creation of synthetic data to improve credit scoring models;

4) support compliance and regulatory reporting.

GenAI is a revolutionary factor, as it will allow you to work with large amounts of unstructured data that traditional AI cannot process.

3. Agentic AI is the main technology trend of 2026. Unlike chatbots or generative models, agent-based AI is able to independently plan, perform multi-stage workflows, interact with other systems, make decisions, and learn from the results.

The use of Agentic AI in credit institutions is carried out in the following areas:

1) full automation of the loan issuance process from document collection and KYC/AML to risk analysis, contract preparation and post-issuance monitoring;

2) autonomous agents – portfolio monitoring, early warning systems, loan restructuring;

3) combination with tokenization: agents can perform autonomous transactions within regulatory constraints.

In 2026, agent-based AI is moving from pilots to scaling, although full adoption is still a challenge for many institutions.

4. Fraud detection and cybersecurity with the help of artificial intelligence is becoming more and more difficult due to the use of generative AI (deepfakes, synthetic identities, automated attacks) by fraudsters themselves. Therefore, credit institutions are actively implementing more powerful AI security systems that will ensure the transition from managed systems to multimodal models that analyze behavior, biometrics, transactions, and context in real time; AI not only detects suspicion, but also autonomously blocks operations, escalates or suggests measures. AI has become the main weapon in the cyber war between financial institutions and fraudsters, where the advantage is given to the one who adapts faster.

5. Integration of AI into the sustainable development practices of credit institutions. Banks use AI to assess ESG risks, analyze the impact of investments on the environment, and optimize capital allocation taking into account the principles of sustainability. This contributes to a more responsible financial system and meets the growing demands of regulators and society for transparency and environmental responsibility.

Thus, artificial intelligence ceases to be a technological experiment and becomes a strategic driver of transformation of credit institutions. Successful banks combine all five trends into a single architecture: a hyper-personalized customer experience underpinned by generative and agent-based AI, protected by powerful fraud detection systems, and focused on long-term sustainability.

Artificial intelligence is radically transforming the activities of credit institutions on a global scale. Today, AI is no longer just an auxiliary tool, but acts as a strategic foundation for the competitiveness of credit institutions. Traditional AI has provided high accuracy of credit scoring and fraud detection, generative AI has revolutionized work with unstructured data and significantly accelerated the preparation of credit services, and agent-based AI opens a fundamentally new stage of development, allowing you to move to autonomous credit processes.

CONCLUSIONS

Global trends, including the hyper-personalization of customer offerings, the large-scale introduction of generative and agent-based AI, the strengthening of fraud detection systems, and the integration of artificial intelligence into sustainability strategies, indicate a clear direction in the evolution of lending activities – from the automation of individual operations to the creation of intelligent, proactive and almost autonomous systems. Credit institutions that successfully implement a comprehensive three-dimensional strategy for the implementation of AI (horizontal, vertical and fundamental dimensions) demonstrate a significant reduction in operating costs, acceleration of decision-making, improvement of the quality of the loan portfolio and a higher level of customer satisfaction.

At the same time, the results of the study emphasize that the effective use of artificial intelligence requires not only technological solutions, but also a strong risk management system, ensuring the explainability of decisions, compliance with regulatory requirements and maintaining human control over high-risk processes. For Ukraine, the experience of world credit institutions is especially relevant. According to the National Bank of Ukraine, more than 60% of financial institutions are already using AI technologies, but most are still at the stage of pilot projects. Ukrainian financial institutions need to accelerate the transition to large-scale and responsible implementation of agent-based AI, develop a powerful data infrastructure, and train qualified personnel.

World experience convincingly proves that artificial intelligence is becoming a necessary condition for the survival and sustainable development of credit institutions in the modern digital environment. Lending institutions that actively invest in the comprehensive implementation of AI will have significant competitive advantages, while those that ignore these trends risk gradually losing market share to more technologically mature players, including fintech companies. The future of lending belongs to institutions that are able to harmoniously combine the capabilities of artificial intelligence with human experience, ethical principles and strict regulatory standards.

SUMMARY

The study proves that the modern financial sector is undergoing a profound digital transformation, with artificial intelligence technology at the center. It is argued that in the activities of credit institutions, traditional approaches to credit risk assessment, decision-making on loan issuance, portfolio monitoring and risk management are gradually being replaced by intelligent systems based on machine learning, generative AI and agent-based technologies. A conceptual scheme of the strategy for the introduction of AI in the activities of credit institutions is proposed. The peculiarities of the introduction of AI in the activities of credit institutions are revealed. Attention is focused on the Top 10 credit institutions according to the Evident AI Index 2025. A strategic model for the introduction of AI in the services of credit institutions has been developed. The options for the use of AI by credit institutions by the share of adoption in 2026 are analyzed. The number of venture investments in the banking sector is given, as well as the Top 10 credit institutions by the number of venture agreements in the field of artificial intelligence.

Key words: AI technology, AI instruments, credit institutions, strategy, strategic model, Evident AI Index, venture investments, transformation.

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Information about the authors:
Popelo Olha Volodymyrivna,
Doctor of Economic Sciences, Associate Professor,
Professor at the Department of Management and Administration,
Chernihiv Polytechnic National University,
95, Shevchenka Str., Chernihiv, 14035, Ukraine

Dubyna Maksym Viktorovych,
Doctor of Economic Sciences, Professor,
Head of the Department of Finance, Banking and Insurance,
Chernihiv Polytechnic National University,
95, Shevchenka Str., Chernihiv, 14035, Ukraine