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INTRODUCTION OF ARTIFICIAL INTELLIGENCE IN COMMERCIAL BANKS IMPORTANCE AND ECONOMIC EFFECT

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Abstract: The article presents information about the concept of "Artificial Intelligence" (AI), which has become a topical topic today, the importance and economic impact of its implementation in the banking system. The economic impact of the implementation of artificial intelligence in the economy, including in the banking system, is also analyzed. Proposals and recommendations are developed on the effectiveness of artificial intelligence technologies in production processes, service industries and economic resource management, as well as their importance in changing the labor market and workforce, and creating new jobs.

Keywords: Artificial intelligence, economic efficiency, application of artificial intelligence, algorithm, technologies, implementation of artificial intelligence in the banking system, information security, analytical indicators.

Introduction

"Artificial Intelligence" (AI), which has become a global topic in the world today, demonstrates the importance of introducing artificial intelligence in the economy, including the banking system, and the urgency of improving economic efficiency in the context of the globalization of the world economy, as well as the intensification of competition in international and local markets.

Artificial intelligence (AI) is a technology that enables computers and machines to mimic human learning, understanding, problem-solving, decision-making, creativity, and autonomy[1]. The term is often used to refer to the development of systems that are capable of performing human-like mental processes, such as reasoning, reasoning, generalizing, or learning from past experiences. Since their development in the 1940s, digital computers have been programmed to perform extremely complex tasks, such as proving mathematical theorems or playing chess, with great skill. Despite ongoing advances in computer processing speed and memory capacity, there are still no programs that can match the full flexibility of humans in a wide range of fields or in tasks that require everyday knowledge. On the other hand, some programs have reached the level of performance of experts and professionals in performing certain specific tasks, so artificial intelligence in this limited sense is found in applications as diverse as medical diagnostics, computer search engines, voice or handwriting recognition, and chatbots.

Artificial intelligence is playing an increasingly important role in our lives and economies, and is impacting our world in many ways. Many see artificial intelligence as a driver of efficiency and economic growth. It can increase the efficiency of commercial banks and significantly improve decision-making by analyzing large amounts of data. It also creates vast opportunities for the creation of new products and services, markets and industries, thereby increasing consumer demand and generating new revenue streams. At the same time, artificial intelligence could have a huge impact on the economy and society. Some warn that this could lead to the creation of super firms –

[1] https://www.ibm.com/topics/artificial-intelligence

centres of wealth and knowledge – that could have a detrimental impact on the wider economy, including the banking system. This could widen the gap between developed and developing countries and increase the need for workers with certain skills while displacing others, a trend that could have far-reaching consequences for the labour market. Experts also warn of its potential to increase inequality, lower wages, and shrink the tax base. While these concerns remain valid, there is no consensus on whether and to what extent they are related, and the risks that arise. They are not known, and carefully designed policies can encourage the development of AI while controlling negative impacts.

In order to develop artificial intelligence in our country and apply it in various fields, in accordance with the Resolution of the President of the Republic of Uzbekistan No. PQ-4996 dated February 17, 2021 "On measures to create conditions for the accelerated introduction of artificial intelligence technologies" [1], eke, It is determined to create a convenient and favorable ecosystem for the development of innovative business models, products and service delivery methods based on artificial intelligence technologies, their rapid introduction and implementation in the identified priority sectors and areas[2].

The explosion of artificial intelligence is sweeping the world, causing excitement and concern, and raising important questions about its impact on the global economy. The exact impact is difficult to predict, as AI will spread differently in different countries. What is clear, however, is that strategies need to be developed to safely harness the enormous potential of AI for the benefit of humanity.

Literature review

As we know, AI applications have advanced significantly in the past few years and have found applications in almost every field. Artificial intelligence is a term used to describe machines that perform human-like cognitive processes such as learning, understanding, reasoning, and interacting. It can take many forms, including technical infrastructure (i.e. algorithms), part of a manufacturing process, or an end-user product. Artificial intelligence has the potential to fundamentally change the way modern societies live.

Directly under artificial intelligence, we have machine learning, which involves building models by training an algorithm to make predictions or decisions based on data. It encompasses a wide range of techniques that allow computers to learn from data and draw conclusions based on it without being explicitly programmed for specific tasks.

1. Impact on productivity:

AI technologies increase efficiency by automating routine tasks, improving decision-making, and optimizing resource allocation. Studies such as Brynjolfsson and McAfee suggest that firms that use AI can achieve significant efficiency gains[2]. For example, companies that use AI to analyze data and make decisions can optimize processes, leading to faster operations and lower labor costs. This trend has been particularly evident in manufacturing and logistics, where AI-based automation has simplified workflows and minimized downtime. Empirical evidence suggests that firms that integrate AI can increase productivity by 20–30%, contributing to higher profitability and competitive advantage.

2. Labor market dynamics:

[2] https://lex.uz/docs/-5603319. Sun'iy intellekt texnologiyalarini qo'llash bo'yicha maxsus rejimni joriy qilish chora-tadbirlari to'g'risidagi PQ-5234.

The impact of AI on employment remains controversial. While some scholars, such as Arntz, Gregory, and Zierahn, argue that AI could displace certain jobs, others emphasize the potential for job transformation and creation[3]. Bessen shows that AI can enhance human capabilities, leading to the emergence of new job categories that require advanced skills[4]. The overall net effect on employment is likely due to the rate of technology adoption and labor force adaptability.

3. Wage inequality:

Research has shown that AI could exacerbate wage inequality. According to a 2019 OECD report, workers in high-skilled, high-wage sectors stand to benefit most from AI advances, while low-skilled, low-wage jobs are at higher risk of automation[5]. This disparity can lead to increased economic polarization, heighten concerns about social stability and call for policy intervention.

4. Sectoral changes:

The impact of AI varies significantly across industries. For example, McKinsey predicts significant disruption in industries such as healthcare, finance, and retail[6]. AI applications in healthcare are increasing diagnostic accuracy and operational efficiency, leading to potential cost savings and improved patient outcomes. Conversely, industries that rely on manual labor may face greater disruption.

5. Economic growth and innovation:

AI has been identified as a key driver of future economic growth. Research by PwC suggests that AI could contribute up to $15.7 trillion to the global economy by 2030[7]. This growth will come from both direct efficiency gains and innovation driven by AI applications, which could lead to the development of new markets and business models.

6. Challenges and risks:

Despite its potential benefits, implementing AI poses challenges, including ethical considerations, data privacy concerns, and regulatory hurdles. The World Economic Forum (2020) highlights the importance of creating frameworks to ensure responsible use of AI that balances innovation and societal well-being.

The development of artificial intelligence promises a revival of consumption, increased productivity in many professions, better risk management, but at the same time, it can lead to mass extinction of jobs in developed countries, massive retraining of skills, widening of the digital divide within social structures (Bostrom, 2017; Mateu & Pluchart, 2019). Most observers, both practitioners and academics, agree that AI is the catalyst for the "third economic transformation" after the Industrial Revolution of the 19th century and the Computer Revolution of the 20th century (Baldwin, 2019). In this regard, in November-December 2021, the Ipsos Group conducted a survey of 19,504 people aged 16-74 from 28 countries on the impact of artificial intelligence in various fields. Respondents (participants in the survey) stated that in the coming years, artificial intelligence will affect education by 35%, security by 33%, employment by 32%, shopping by 31%, transportation by 30%, entertainment by 27%, cost of living by 26%, income by 23%, environment by 22%, food by 15%, and personal relationships by 15%[3].

Research methodology

The article is based on the study of the approaches and views of economists on the topic and the author's attitude towards them, as well as the scientific and theoretical methodological aspects of the article, as well as the economic effectiveness of the introduction of artificial intelligence today, the advantages and disadvantages of using artificial intelligence, the analysis of the

[3] https://www.emerald.com/insight/content/doi/10.1108/JEBDE-10-2023-0022/full/html

importance of artificial intelligence in the modern economic system, and the determination of directions for its further development and formation. In the process of scientific study of the topic, static analysis, logic, analysis and research, various literature and articles were used.

Analysis and discussion of results

AI is one of the driving forces behind the revolution in technology, organizations, and society at the beginning of the 21st century. By harnessing the power of data analytics and algorithms, AI applications are optimizing service quality, helping businesses detect and combat fraudulent transactions, and better protecting organizations from hackers, as well as strengthening the fight against accounting fraud.

A recent analysis by the International Monetary Fund (IMF) on the potential impact of artificial intelligence on the global labor market suggests that nearly 40 percent of the world's employed population will be exposed to risks associated with the development of AI. While automation and information technology have traditionally affected mostly routine tasks, a unique feature of AI is its ability to affect highly skilled jobs. As a result, advanced economies are facing greater risks related to AI, reaching 60 percent of the workforce.

Currently, AI technologies are involved in all processes of large developed banks. They are built on anti-fraud solutions, credit scoring, risk assessment, loan repayment, customer propensity to buy or fall for fraud, etc. But there is room for growth here too. According to various calculations, the use of artificial intelligence systems can increase labor productivity up to 30 times in some areas of banking activity.

It is difficult to overestimate the importance of our country's population adopting AI tools now, as we can see polarization across income groups, and workers who can use AI will see increased productivity and wages. It is worth noting that those who cannot use AI technologies will be left behind and will need to adopt AI tools.

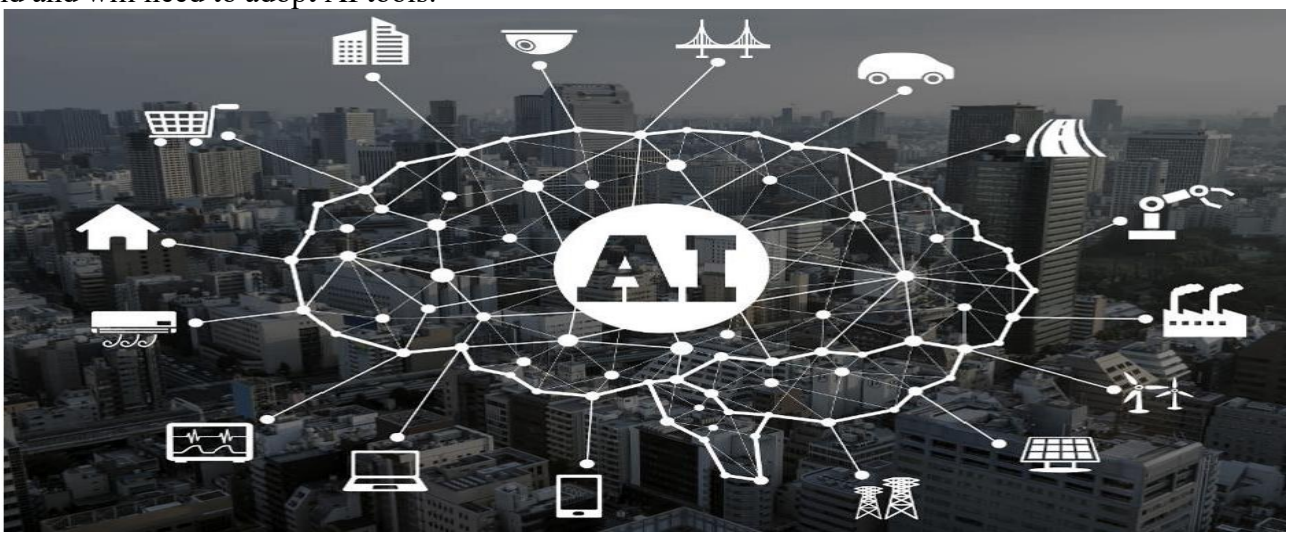


Figure 1. Application of artificial intelligence in the economy[4]

The adoption model for AI may be similar to the impact of the popularization of ATMs. Although they were initially seen as job killers for bank tellers, the introduction of ATMs led to the

[4] https://critaceducation.com/educationonline/course-details.php?c_id=258

opening of more bank branches and more roles for bank tellers, as the cost of opening a single branch dropped significantly due to automation. This phenomenon is known as Jevons paradox[5], where technological progress drives efficiency and cost reductions increase demand to the point where it requires more resources, not less.

AI technologies are being adopted by organizations around the world at an astonishing rate, highlighting the need for policymakers to take action. To help countries set the right policies, the IMF has developed its AI Readiness Index, which assesses readiness in areas such as digital infrastructure, human capital and labor market policies, innovation and economic inclusion, and regulation and ethics.

Using this index, IMF staff assessed the readiness of 125 countries. The results show that richer countries, including advanced economies and some emerging markets, are more prepared to adopt AI than lower-income countries.

According to experts from the National Bureau of Economic Research (Massachusetts, USA), artificial intelligence can help workers with little experience increase their productivity faster[6]. While it may be difficult for younger workers to take advantage of these opportunities, it may be difficult for older workers to adapt. But it must be done. Speaking about the introduction of modern technologies at a meeting on the wide implementation of the digital economy and e-government on May 11, 2020, President of the Republic of Uzbekistan Shavkat Mirziyoyev noted that "if we do not complete this work in the next 2-3 years, each year of delay will undermine the 10-year development of our country"[7]. These words are undoubtedly even more relevant today.

AI and other related technologies are helping to automate workflows that currently consume 60-70% of work time. The acceleration of technical automation is largely due to the increasing ability of artificial intelligence to understand natural language, which is essential for workflows that currently consume 25% of time.

The era of artificial intelligence is just beginning, and its popularity is clearly growing, as evidenced by more and more new projects. However, it will take time to realize the full potential of this technology. Today, society faces serious challenges such as managing the risks associated with artificial intelligence, identifying the required skills and competencies of workers, and rethinking its core processes.

The difference between an intellectual task and a traditional task is related to the term "algorithm". In solving problems in mathematics and computer science, it is necessary to create an algorithm. The search for algorithms is a natural goal of any person in search of solutions to various problems. There are regular and "special" tasks. To solve "special" problems, it is necessary not only to create an algorithm, but also to use ingenuity, competent thinking and high skills. In other words, it is necessary to use human intelligence. By "special" tasks, we mean intellectual tasks. If we consider the role of AI in the economy. We know that AI in the economy, including the banking system, is based on algorithms. World-renowned economist Brian Arthur expressed this opinion in one of his works a few years ago:

The virtual economy is the development of digital technologies. In his work, he wrote that the main element of the new structure will be artificial intelligence working on virtual algorithms. In

[5] https://dzen.ru/a/ZG79LnDfMAVScn5L

[6] https://www.nber.org/papers/w31161

[7] https://president.uz/ru/lists/view/3566

the second decade of the 21st century, very cheap sensors were created, as a result of which a lot of new data appeared and the need for their analysis arose. As a result, the newest analysis methods and algorithms were developed. These algorithms can do things that were previously only possible for humans. Also, AI does not need control, which is one of the most serious problems. For example, there is a taxi without a driver, the car moves independently along the designated road, recognizes signs. Using artificial intelligence in business has its advantages. Companies are using facial recognition and voice recognition to automate existing products and services. For example, a fintech company in China has created a mobile app from which you can borrow money for purchases. This app works as follows::

- You must first activate the application with a voice command;
- Your credit history and social media profile will then be checked;
- Then, based on verification, credit cards will appear on the screen;
- Ultimately, the client chooses the right offer for themselves [8].

As an example, we can analyze the economic benefits of implementing artificial intelligence in different countries.

The economic impact of introducing artificial intelligence technologies in Russia is estimated at more than 1 trillion rubles, said Russian Deputy Prime Minister Dmitry Chernyshenko in March 2024. According to him, a third of Russian companies use artificial intelligence for business tasks[8]. According to the results of the study, Sberbank and Yandex can now be called the leaders of the Russian Federation in the field of artificial intelligence. The gap with other market participants is large, but in general, the use of AI in the financial sector is one of the leading directions. The share of the banking sector in the implementation of AI is about 50 percent.

The productivity impact of generative AI could add trillions of dollars to the global economy. AI adds the equivalent of $2.6 trillion to $4.4 trillion annually in global productivity across 63 application scenarios analyzed by McKinsey&Co. By comparison, the UK's entire GDP in 2021 was $3.1 trillion.

The company estimates that approximately 75 percent of the value of using artificial intelligence is concentrated in four areas: customer operations, marketing and sales, software development, and research and development.

According to reports, artificial intelligence has the potential to significantly boost the global economy. For example, artificial intelligence could add 16%, or about $13 trillion, to the global economy by 2030. In addition, the impact of artificial intelligence could increase global GDP by up to 26%. It is also noted that at least 70% of companies around the world will integrate artificial intelligence in one form or another in the coming years[9].

Practical implications: The rapid adoption of AI technologies will undoubtedly have a profound impact on businesses and economies. Companies that use AI will gain competitive advantages in their industries. In addition, as more businesses adopt AI, the demand for AI expertise will increase, potentially creating jobs in some industries and reducing jobs in others. An analysis of the productivity gains resulting from the introduction of artificial intelligence is presented in Table 1.

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[8] https://sia.ru/?section=484&action=show_news&id=461134

[9] https://www.researchgate.net/publication/373749082_The_Transformative_Power_of_AI_Projected_Impacts_on_the_Global_Economy_by_2030

Table 1
Analysis of productivity gains resulting from the introduction of artificial intelligence[10]

Industries	Average productivity growth (%)	Main applications
production	30-35 %	Robotics, predictive maintenance
Health care	20-25 %	Diagnostics, patient management
trade	20-25 %	Inventory management, customer analysis
Banking-Finance	40-45 %	Fraud detection, algorithmic trading

However, the use of artificial intelligence also has its risks. AI will displace people from jobs, which will lead to increased unemployment.

When analyzing many business opinions on the possible consequences of using artificial intelligence, the most important one is the layoff of employees due to the reduction of routine operations[14]. The results of the analysis of industrial changes driven by artificial intelligence are presented in Table 2.

Table 2
Industrial transformations driven by artificial intelligence[11]

Industries	Economic growth rate
Health care	30 %
production	30 %
Banking-Finance	35 %
trade	15 %
Other areas	15 %

The most transferable professions are believed to be accounting; finance; secretaries. Predicted changes in the labor market due to artificial intelligence are presented in Table 3.

Table 3
Predictable changes in the labor market due to artificial intelligence[12]

Job category	Potential change (%)	definition
Highly skilled jobs	+15%	Increased demand for technical and management roles
Medium-skilled jobs	-10%	Automate routine tasks

[10] Author's development

[11] Muallif ishlanmasi

[12] Muallif ishlanmasi

Low-skilled jobs	-25%	The risk of displacement is very high
Creation of new roles	+20%	AI specialists, data analysts

The trend of information addiction will remain relevant even in 2025. The importance of information in the life of society will increase even more - modern infrastructure cannot be built without it. In the coming years, the average number of information effects per capita will increase 20 times. Our homes, workplaces, devices and wearables, vehicles and implants are gradually becoming smarter, and more and more devices can connect to the Internet. In addition, there are also information security problems in the use of artificial intelligence.

Information security is becoming the most important foundation of the world's existence. As the global volume of information explodes, the gap between what is protected from cybercriminals and what needs to be protected is widening. The volume of truly protected analytical data is 40%, and by 2025, 90% of data will need protection. Security systems will be mandatory for processing corporate financial data, personal information, and medical records.[9].

Conclusion and suggestions

The economic impact of AI on the economy, including the banking system, is multifaceted, affecting productivity, wage distribution, industry dynamics, and overall economic growth. While AI offers significant opportunities, it also poses challenges that require thoughtful policy responses. Future research should continue to explore the long-term impact of AI on the economy, with a focus on ensuring inclusive growth and addressing the inequalities it may create.

Further expansion of the scope of application of artificial intelligence is inevitable. Main areas of application of AI in the economic sphere:

- AI is actively used in banks and payment systems (FinTech) and the financial sector for risk analysis, lending, and investment management;
- AI enables the automation of routine tasks such as data processing, record keeping, and inventory management;
- AI-powered chatbots and virtual assistants improve customer experience, reduce costs, and enable broader customer service;
- AI helps identify and mitigate various financial and operational risks;
- AI helps analyze large amounts of data to identify trends and predict future events;
- AI allows companies to offer personalized recommendations and services based on customer preferences;
- AI further accelerates the process of developing and testing new products by analyzing feedback and market data;
- AI optimizes supply chain management by improving planning and coordination.

In conclusion, the use of artificial intelligence in the economic, banking and financial sectors opens up many opportunities to increase efficiency, reduce costs and improve the quality of services. At the same time, it is necessary to take into account ethical difficulties and the need to improve the skills of workers, as the demand for skills changes.

Artificial intelligence is a dynamically developing system with a number of shortcomings, but at the same time, these same shortcomings can be corrected or improved, thereby taking AI to the next stage of development. Soon it will become an integral part of our lives, like the Internet or other technologies. However, the disadvantages of such a system are the inequality in the market of

developed countries compared to underdeveloped countries, and this leads to the vulnerability of the system to cybercrime.

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