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Economic effectiveness of implementing artificial Intelligence

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Abstract: The article describes information about artificial intelligence (AI), one of today's modern technologies, its concept, the importance of its implementation in practice, and its economic impact.

Keywords: artificial intelligence, economic efficiency, economic efficiency of artificial intelligence, Jevons paradox, directions of use of artificial intelligence

INTRODUCTION. Artificial intelligence (AI) is a technology that enables computers and machines to mimic human learning, understanding, problem-solving, decision-making, creativity, and autonomy. The term is often used to refer to the project of developing systems that have the ability to perform mental processes characteristic of humans, such as reasoning, logical reasoning, generalization, or learning from past experiences.

In order to develop artificial intelligence and apply it in various fields in Uzbekistan, on February 17, 2021, Resolution No. PQ-4996 "On measures to create conditions for the accelerated introduction of artificial intelligence technologies" was adopted, according to which it is determined to create a convenient and acceptable 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.

Today, artificial intelligence is playing an increasingly important role in our lives and economies, affecting our world in many ways. Many see artificial intelligence as a driver of efficiency and economic growth. These developments can increase efficiency and significantly improve decision-making by analyzing large amounts of data. This can help create new products and services, markets and industries, thereby increasing consumer demand and creating new revenue streams. At the same time, it can have a huge impact on economic and social development.

Some warn that it could lead to the creation of supercompanies - centers of wealth and knowledge - that could have a detrimental effect on the economy. It could also widen the gap between developed and developing countries, increasing the need for workers with certain skills while displacing others. This latter trend could have far-reaching consequences for the labor market. It also warns of the potential for increasing inequality, lowering wages, and shrinking the tax base. While these concerns remain valid, there is no consensus on whether and to what extent they are interconnected, and the risks that arise. They are not known, and well-designed policies can encourage the development of AI while controlling negative impacts.

Strategies need to be developed to safely harness the enormous potential of AI for the benefit of humanity.

1. Impact on productivity. AI technologies increase efficiency by automating routine tasks, improving decision-making, and optimizing resource allocation. For example, companies that use AI to analyze data and make decisions can optimize processes, leading to faster work and lower labor costs.

2. Labor market dynamics. The impact of AI on employment remains controversial. While some scholars argue that AI may displace certain jobs, others emphasize the transformation and creation of jobs. The overall net impact on employment is likely to be related to the speed of technology adoption and the adaptability of the workforce.

3. Wage inequality. Research suggests that AI may increase wage inequality. According to the OECD report, workers in high-skilled, high-wage sectors will benefit most from AI advances, while low-skilled, low-wage jobs are at greater risk of automation. This gap could lead to increased economic polarization, raise concerns about social stability, and require policy intervention.

4. Sectoral changes. The impact of AI will vary significantly across sectors. For example, sectors such as healthcare, finance, and retail are predicted to see significant changes. AI applications in healthcare will increase diagnostic accuracy and operational efficiency, leading to potential cost savings and better patient outcomes. Conversely, sectors that rely on manual labor may face greater disruption.

5. Economic growth and innovation. AI is cited 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. This growth will come from both direct efficiency gains and innovation driven by AI applications that can 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 emphasizes the importance of creating a framework for responsible use of AI that balances innovation and societal well-being.

Respondents said that in the coming years, artificial intelligence will affect education - 35%, security - 33%, employment - 32%, shopping - 31%, transportation - 30%, entertainment - 27%, cost of living - 26%, income - 23%, environment - 22%, food - 15%, and personal relationships - 15%.

ANALYSIS AND RESULTS. Using the power of data analytics and algorithms, artificial intelligence applications optimize service quality, help businesses detect and combat fraudulent transactions, and better protect organizations from hackers, as well as strengthen 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 shows that almost 40 percent of the world's employed population will be exposed to risks associated with the development of AI. Previously, automation and information technology mainly affected routine tasks, but a distinctive feature of AI is its ability to affect highly skilled jobs. As a result, advanced economies face more risks associated with AI, reaching 60 percent of the workforce.

Currently, AI technologies are built on anti-fraud solutions, credit scoring, risk assessment, loan repayment, customer propensity to purchase or fall under the influence of fraudsters, etc. But there is room for growth here too. According to various estimates, the use of artificial intelligence systems can increase labor productivity in some areas of banking activity by up to 30 times.

The adoption model for AI can be likened to the impact of the popularization of ATMs. This phenomenon is known as the Jevons paradox, where technological advances generate efficiencies and cost reductions increase demand to the point where they require more resources, not fewer.

AI technologies are being adopted by organizations around the world at an astonishing rate, highlighting the need for policymakers to take action. It has developed its AI Readiness Index, which measures 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 will help workers with less experience increase their productivity faster. While it may be easier for younger workers to use these opportunities, it may be difficult for older workers to adapt. But it must be done. Speaking about the introduction of modern technologies 4 years ago, President 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 10 years of our country's development." These words are undoubtedly even more relevant today.

Existing generative AI and other related technologies help automate workflows that currently consume 60-70% of working time. The acceleration of technical automation is mainly due to the increased ability of artificial intelligence to understand natural language, which is necessary for workflows that take up 25% of time.

According to reports, artificial intelligence has the potential to significantly boost the global economy. For example, artificial intelligence could add 16% to the global economy, or about $13 trillion, 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 worldwide will integrate artificial intelligence in one form or another in the coming years.

Practical implications: The rapid adoption of artificial intelligence 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 artificial intelligence, the demand for artificial intelligence expertise will increase, potentially leading to job creation in some industries and job losses in others. An analysis of the productivity gains resulting from the introduction of artificial intelligence is presented in Table 1.

Table 1

Analysis of productivity gains from the introduction of artificial intelligence

Sectors	**Average productivity growth (%)**	**Main applications**
Manufacturing	25-30	Robotics, predictive maintenance
Healthcare	20-25	Diagnostics, patient management
Trade	15-20	Inventory management, customer analytics
Finance	30-35	Fraud detection, algorithmic trading

When analyzing the many business considerations regarding the possible consequences of using AI, the most important one is the layoff of employees due to the reduction of routine operations. The results of the analysis of industrial changes driven by AI are presented in Table 2.

Table 2

Industrial changes driven by artificial intelligence

Sectors	**Share of economic growth (%)**
Healthcare	30
Manufacturing	25

Finance	20
Trade	15
Other industries	10

The most transferable professions are believed to be accounting; finance; secretaries. Predictable 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

Job Category	Potential Change (%)	Description
High-skilled jobs	+15	Increased demand for technical and management roles
Middle-skilled jobs	-10	Automation of routine tasks
Low-skilled jobs	-25	High risk of relocation
Creation of new roles	+20	SI specialists, data analysts

The trend of information dependence will remain relevant in 2026.

In addition, the importance of information in society will increase even more - even modern infrastructure cannot be built without it. In the coming years, the average number of information exposures per capita will increase by 20 times. Our homes, workplaces, devices and wearables, vehicles and implants are gradually becoming smarter, and more and more devices can be connected to the Internet. In addition, there are information security issues when using artificial intelligence.

CONCLUSION AND SUGGESTIONS. The economic impact of AI is multifaceted, affecting productivity, employment, 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.

It is inevitable that AI will continue to expand in scope. The main areas of application of AI in the economic sphere are:

Process automation: AI allows you to automate routine tasks such as data processing, record keeping, and inventory management.

Data analysis and prediction: AI helps analyze large amounts of data to identify trends and predict future events.

Service personalization: AI allows companies to offer personalized recommendations and services based on customer preferences.

Supply chain management: AI optimizes supply chain management by improving planning and coordination.

Financial technology (FinTech): AI is actively used in the financial sector for risk analysis, lending, and investment management.

Customer service: AI-based chatbots and virtual assistants improve customer experience and reduce costs.

Risk management: AI helps identify and mitigate financial and operational risks.

New product development: AI accelerates the process of developing and testing new products by analyzing feedback and market data.

In conclusion, the use of artificial intelligence in the economic sphere 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 challenges and the need to improve the skills of workers, as the demand for skills is constantly changing.

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