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For scientists, scientists, students, graduate students, representatives of business and public organizations and higher education institutions and a wide range of readers.

THE ROLE OF ARTIFICIAL INTELLIGENCE IN THE ECONOMIC SECTOR

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Artificial Intelligence (AI) is an innovative technology that operates with the purpose of self-organization, learning, and making intelligent decisions similar to those made by humans. It is a key factor in the Industrial Revolution 4.0, opening up possibilities for economic development in enterprises by implementing digitized processes in production and management [1] (Table 1).

Table 1 - The Impact of Artificial Intelligence on the Economic Sector

Aspects	Explanation
Improving the quality of decision-making	Artificial Intelligence provides significant analytical power for processing large volumes of data and uncovering complex dependencies. This enables economists to make more accurate forecasts, assess risks, and make well-informed decisions. The use of machine learning algorithms allows for quicker identification of trends, facilitating strategic planning and management processes [2].
Increase in productivity	Artificial Intelligence allows for the automation of routine and monotonous tasks, leading to increased labor productivity. Algorithms help optimize production processes, forecast demand for goods and services, and manage inventory and supply chains more efficiently [2].
Improving interaction with customers	Artificial Intelligence can support the personalization of customer interactions. AI is capable of analyzing large volumes of customer data, their previous experiences, and behaviors to offer individualized solutions and personalized recommendations. This helps businesses improve the process of meeting consumer needs.
Development new products and services	Artificial Intelligence opens up new opportunities for creating innovative products and services. It enables the development of autonomous systems, robots, virtual assistants, and other technological solutions that contribute to the improvement of economic processes.

Continuation of Table 1

<p>Development new products and services</p>	<p>Artificial Intelligence opens up new opportunities for creating innovative products and services. It enables the development of autonomous systems, robots, virtual assistants, and other technological solutions that contribute to the improvement of economic processes. Such products and services can have a significant impact on the market, creating new opportunities for businesses and consumers.</p>
<p>Increasing competitiveness</p>	<p>Artificial Intelligence helps businesses become more competitive in the market. It enables faster responsiveness to changing consumer demands and adaptation to new market conditions. Companies utilizing AI can offer innovative solutions and services, giving them an advantage over competitors [3].</p>
<p>Creation new jobs</p>	<p>The implementation of artificial intelligence contributes to the creation of new jobs in the technology sector. The growing popularity of AI requires professionals who can develop, implement, and maintain artificial intelligence systems. This opens up new opportunities for the development of information technology and the job market.</p>
<p>Support sustainable development</p>	<p>The use of artificial intelligence can contribute to sustainable economic development. AI helps reduce energy costs, resource consumption, and environmental impact. It can be utilized to optimize energy efficiency in manufacturing, route transportation to minimize CO₂ emissions and analyze environmental data for decision-making aimed at conserving natural resources. This enhances the environmental responsibility of businesses and promotes sustainable development in society as a whole [3].</p>

Artificial intelligence in economics also has its drawbacks. Among them, it is worth noting the high costs of development and implementation, lack of transparency in decision-making and complexity in explaining them, ethical concerns and security issues, as well as the potential negative impact on the job market, increased unemployment, and devaluation of certain types of work.

Artificial intelligence has become an essential component of the global economy, penetrating various industries and transforming the market into a more powerful structure. The United States is one of the leading countries in the

development and utilization of AI in the economy. They have significant potential in the field of artificial intelligence due to the presence of leading technology companies such as Google, Microsoft, IBM, Facebook, and Tesla, actively advancing innovative solutions. China has also made significant progress in the development and application of artificial intelligence. Chinese companies like Alibaba, Baidu, and Tencent are actively applying AI in various sectors, including e-commerce, finance, transportation, and healthcare. The Chinese government is actively supporting the development of AI, including the creation of a national strategy for "New Generation AI" [4]. In addition to the countries mentioned earlier, the United Kingdom has many companies engaged in the development and application of artificial intelligence. For example, BenevolentAI focuses on developing pharmaceuticals using AI, Oxbotica specializes in software development for autonomous vehicles, and Darktrace develops AI-based cybersecurity systems, actively utilizing artificial intelligence to tackle complex tasks [5]. Furthermore, France has a strong presence in the field of artificial intelligence. Companies like Criteo, a personalized advertising platform that leverages AI, Dataiku, a platform for developing and managing machine learning models, and Inria, the French National Institute for Research in Computer Science and Automation, are actively involved in the development and application of AI in various domains [5].

These examples of leading countries demonstrate the diversity of approaches to the use of artificial intelligence in the economy. Each of them has its own strengths and strategies that help them maintain a competitive advantage and stimulate innovative development. Comparing global practices of AI implementation with the practice in Ukraine, it can be noted that the development of AI is somewhat lagging behind. However, one of the factors limiting the rapid development of AI in Ukraine is the insufficient level of investment and research efforts in this field. While there are many large technology companies and startups worldwide actively investing in the development and application of AI, the sector in Ukraine still requires more attention and support. Additionally, there is an issue with the acceptance of new technologies and a delay in the implementation of innovative solutions. Some companies may be conservative and resistant to change, which slows down the adoption of AI. However, it is worth noting that Ukrainian AI professionals have great potential and high qualifications. Many Ukrainian specialists hold leading positions in global companies and are also working on their own startups and projects in the field of AI. Nevertheless, Ukraine is already achieving certain accomplishments in the application of artificial intelligence, and some large companies are successfully utilizing these technologies. Here are some of them:

1. PrivatBank – a Ukrainian bank that utilizes artificial intelligence to enhance its financial analytics and data processing. They implement machine

learning algorithms for fraud detection, risk transactions, and improved personalized customer service. As a result, their customers actively utilize the Privat24 application. [7]

2.Epicentr – one of the largest trading platforms in Ukraine, leverages artificial intelligence to improve its services. They employ machine learning algorithms for product recommendation personalization, demand forecasting, and inventory management, ensuring efficient trading and customer satisfaction. [8]

3.Kernel – a Ukrainian producer and exporter of sunflower oil, uses artificial intelligence to optimize its production processes. They apply data analytics and machine learning for crop yield prediction, quality control, and production line optimization, resulting in increased productivity and efficiency. [6]

Therefore, artificial intelligence plays a significant role in the economic sector [9-28]. It influences productivity improvement, process optimization, decision-making enhancement, and increased competitiveness of companies. The implementation of artificial intelligence allows businesses to unlock new opportunities, enhance the quality of products and services, and attract and retain customers. Ukraine is also actively utilizing artificial intelligence in the economic sphere, with large companies successfully integrating AI to improve their operational efficiency and gain a competitive edge. This demonstrates the powerful potential of artificial intelligence for economic development and achieving positive outcomes.

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