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THE IMPORTANCE OF ARTIFICIAL INTELLIGENCE AND DIGITALIZATION IN INCREASING THE PRODUCTION CAPACITY OF INDUSTRIAL ENTERPRISES IN UZBEKISTAN

The article examines the importance of artificial intelligence (AI) and digitalization for increasing the production capacity of industrial enterprises in Uzbekistan. The introduction emphasizes the importance of implementing AI and digital technologies to adapt enterprises to modern challenges and global competition. The relevance of the topic is explained by the rapid development of technologies and the need to use their advantages to ensure sustainable growth. The study of the topic is confirmed by numerous studies showing significant advantages of AI and digitalization in industry. The article analyzes specific examples and areas of use of AI and digital technologies, and emphasizes the need for state support and training of qualified personnel. Summarizing, it emphasizes the key role of AI and digitalization in increasing efficiency, reducing costs and increasing the competitiveness of industrial enterprises in Uzbekistan.

Key words: *artificial intelligence, digital technologies, increasing efficiency, competition, production capacity.*

Introduction. Modern industrial enterprises face a number of challenges, such as global competition, increasing customer needs and the desire for sustainable development. Artificial intelligence (AI) and digitalization are becoming important tools to overcome these challenges and increase production capacity. In Uzbekistan, industrial enterprises are actively implementing AI and digital technologies to optimize processes, reduce costs and improve product quality. This article aims to analyze the importance of AI and digitalization in the development of the industrial sector of Uzbekistan.

Relevance. The importance of the topic is associated with the dynamic development of technologies, the increasing role of artificial intelligence and digital solutions in various sectors of the economy. In the era of globalization and digital changes, the industry of Uzbekistan needs to adapt to new conditions in order to effectively use the opportunities provided by innovative technologies. The introduction of AI and digitalization helps enterprises mechanize repetitive operations, improve production chains, improve resource management efficiency and build more productive interactions with consumers.

Thanks to AI and digitalization, enterprises can respond more quickly to changes in the market situation, take into account customer needs and develop new products that meet high quality standards. Digital technologies also improve supply chain management, forecast demand and minimize risks associated with production processes [2].

Study status. The issues of using AI and digitalization in industry are widely studied at the international level. Numerous studies show that the use of AI and digital technologies contributes to a significant improvement in production performance, cost reduction and increased competitiveness of enterprises. In particular, AI is used to automate production, manage inventory, predict equipment breakdowns and optimize logistics.

In Uzbekistan, the topic of using AI and digitalization in industry is also of increasing interest. State programs are being implemented aimed at digitalizing the economy and supporting the introduction of modern technologies in the industrial sector. An important aspect is the training of qualified personnel capable of working with new technologies and adapting to changes [1].

Figure 1. Industrial Revolution 4.0 in Uzbekistan: Artificial Intelligence and Digitalization

Research shows that digitalization of production processes can significantly increase their efficiency and reduce costs. Implementing AI-based manufacturing management systems enables businesses to respond quickly to changes, improve product quality, and ensure sustainable growth [4].

In the industrial sphere, the designation “4.0” is associated with the concept of “Industry 4.0” or “Fourth Industrial Revolution”. This term denotes a new stage of technological development, where the distinctive feature is the active introduction and integration of advanced technologies, as well as the automation of production systems. Industry 4.0 covers a number of key areas, including:

1. Automation: Using robots and automated systems to perform tasks that were previously performed manually.

2. Digitalization: Converting analog processes into digital ones, which improves data management and analysis.

3. Internet of Things (IoT): Communication and integration of various devices and systems via the Internet to exchange data in real time.

4. Artificial Intelligence (AI): Using AI to analyze data, forecast and optimize processes.

5. Cyber-physical systems: Integrating physical equipment with computer systems to create smart manufacturing processes.

6. Big data and analytics: Collecting and analyzing large amounts of data to make informed decisions and improve manufacturing processes [3].

Thus, Industry 4.0 represents a new stage in industrial development, which is based on digitalization and automation to achieve higher efficiency, flexibility and competitiveness.

Summing up. Artificial intelligence and digitalization play a key role in increasing the production capacity of industrial enterprises in Uzbekistan. The introduction of AI and digital technologies allows automating routine tasks, optimizing production processes, improving resource management and increasing product quality. The relevance of the topic is confirmed by global trends in the development of AI and digitalization, as well as the need for enterprises to adapt to new conditions and market challenges.

Numerous studies indicate significant benefits of using AI and digital technologies in industry. Uzbekistan is implementing state programs to support digitalization, which contributes to the introduction of modern technologies and increasing the production capacity of enterprises. In order to achieve sustainable growth and increase the competitiveness of industrial enterprises, it is necessary to continue developing government initiatives, creating favorable conditions for the implementation of AI and digital technologies, and training qualified personnel.

Only an integrated approach, including the implementation of AI, infrastructure development and personnel training, will allow enterprises in Uzbekistan to achieve significant results and strengthen their positions in the global market.

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ЗНАЧЕНИЕ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА И ЦИФРОВИЗАЦИИ В ПОВЫШЕНИИ ПРОИЗВОДСТВЕННОЙ МОЩНОСТИ ПРОМЫШЛЕННЫХ ПРЕДПРИЯТИЙ УЗБЕКИСТАНА

В статье исследуется значение искусственного интеллекта (ИИ) и цифровизации для повышения производственной мощности промышленных предприятий Узбекистана. Подчеркивается важность внедрения ИИ и цифровых технологий для адаптации предприятий к современным вызовам и глобальной конкуренции. Актуальность темы объясняется стремительным развитием технологий и необходимостью использования их преимуществ для обеспечения устойчивого роста. Изученность темы подтверждается многочисленными исследованиями, показывающими значительные преимущества ИИ и цифровизации в промышленности. В статье анализируются конкретные примеры и направления использования ИИ и цифровых технологий, а также подчеркивается необходимость государственной поддержки и подготовки квалифицированных кадров. Подведение итогов подчеркивает ключевую роль ИИ и цифровизации в повышении эффективности, снижении издержек и повышении конкурентоспособности промышленных предприятий Узбекистана.

***Ключевые слова**: искусственный интеллект, цифровые технологии, повышение эффективности, конкуренция, производственная мощность.*