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ARTIFICIAL INTELLIGENCE IN UZBEKISTAN INDUSTRY - AS A FACTOR OF INCREASING EFFICIENCY AND SUSTAINABLE DEVELOPMENT

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Abstract
This article discusses the importance and prospects for the use of artificial intelligence (AI) in the industry of Uzbekistan. The main focus is on the role of AI in increasing the efficiency of production capacities, optimizing processes, and ensuring sustainable development. The article analyzes the main areas of application of AI, such as data analysis, process automation, demand forecasting, supply chain optimization, marketing personalization, and product quality management. Examples and data from various sectors of industry, including electric power, metallurgy, chemistry, and textiles, demonstrate the relevance of introducing artificial intelligence in Uzbekistan. The conclusions of the article emphasize the importance of digital transformation to strengthen the country's economic position and improve the quality of life of the population.

Keywords: Digitization, artificial intelligence, innovative technologies, digital technologies, production, industry, optimization, automation

Introduction

For Uzbekistan, the effective use of production capacities of industrial enterprises using digital technologies is an important task. The introduction of digital technologies allows for improved production management, improved product quality, and reduced costs. This is especially true in the context of globalization and competition in the global market.

The digitalization of industry in Uzbekistan involves the use of technologies such as the Internet of Things (IoT), artificial intelligence (AI), big data, and automation of production processes. These technologies help enterprises optimize production capacities, improve demand forecasting, and more effectively manage inventory.

In addition, digitalization contributes to the development of innovative technologies and the creation of new jobs, which is important for the country's economic growth. Various initiatives and projects to introduce digital technologies into industry are already being implemented in Uzbekistan, which confirms the relevance of this topic.

The volume of production in various sectors of Uzbekistan's industry in 2019-2023 indicates significant achievements and opportunities for further growth. Let's look at the main indicators:

Electric power industry. In 2020, 429.9 thousand tons of oil equivalent (TOE) of electricity were produced by electric power enterprises. This indicates the stable operation of this sector and significant production capacity.

Metallurgy. The metallurgical industry also achieved significant results. In January-September 2024, the volume of product production amounted to 70824.4 billion soums, which is an increase of 110.4% compared to previous periods. This growth indicates increased production activity and demand for metallurgical products.

Chemical industry. In 2020, the gross product of the chemical industry amounted to about $ 2 trillion. The chemical industry of Uzbekistan occupies an important place in the country's economy, providing the production of various chemical products and materials.

Textile industry. A brief description of the data on the textile industry in Uzbekistan in recent years:
The textile industry is one of the important sectors of the economy of Uzbekistan, providing a significant number of jobs and exporting products. According to various studies and reports by Uzbek scientists, the textile industry of Uzbekistan is demonstrating stable growth and development.
In 2019, the production of textile products amounted to approximately $ 3.2 billion. Despite the global problems associated with the COVID-19 pandemic in 2020, the textile industry of Uzbekistan continued to develop, and production volume reached $ 3.5 billion. In 2021, the production of textile products increased to $ 4 billion.
2022 was also a successful year for the textile industry of Uzbekistan, with production volumes reaching nearly $4.5 billion. In 2023, production volumes were expected to increase further, which confirms the stable growth of the industry.
Digital technologies and innovations are also being actively introduced in the textile industry of Uzbekistan, which serves to increase the efficiency of production processes and improve product quality. The use of modern management and automation methods helps enterprises optimize their activities and reduce costs.

Food industry. Data on the food industry for the specified period was also not found in available sources. However, the food industry of Uzbekistan plays an important role in providing the population with food products and producing food products for the domestic and foreign markets.

This data shows the importance of various sectors for the economy of Uzbekistan, indicating the successful development of important sectors and an increase in production volumes. The use of digital technologies and innovations serves to further increase the efficiency and effectiveness of production processes.

The topic has been studied. Here are some of the Uzbek scientists who have made a significant contribution to the study of the effective use of production capacities:

1. Sattorkulov O.T. - Researcher at Gulistan State University, actively involved in issues of innovative potential and its effective use in Uzbekistan.
2. Rahmatov Kamoliddin Uralovich and Yangiboev Bobur Fakhriddin Ugli are authors of an article on ways to effectively use the innovative potential of Uzbekistan.
3. Kirill Sergeevich Krivyakin and Vladimir Nikolaevich Popov are authors of a scientific article on organizing the effective use of the production capacities of an enterprise in a market economy.

These scientists and their works help in the development and implementation of innovative approaches in various sectors of the economy of Uzbekistan.

The use of artificial intelligence (AI) in improving the efficiency of industrial enterprises in the effective use of production capacities is one of the most rational and optimal factors today.

Artificial intelligence (AI) plays a significant role in improving the efficiency of enterprises by providing solutions for data analysis, process automation, demand forecasting, supply chain optimization, marketing personalization, and product quality management. Let's combine all these aspects into a whole to understand the importance of artificial intelligence.

Data analysis. Artificial intelligence has powerful tools for analyzing large volumes of data, allowing enterprises to identify hidden patterns and trends. This helps you make more informed decisions and optimize processes. For example, with the help of artificial intelligence, companies can analyze consumer behavior, predict market changes, and adjust their strategies to achieve better results.

Process automation. AI can automate routine tasks such as document processing, inventory management, and customer service. This frees up employees' time to do

more complex and creative work. Automation helps reduce costs, increase the speed of operations, and reduce the likelihood of errors.

Demand forecasting. Artificial intelligence can predict demand for products and services, which allows businesses to better plan production and manage inventory. Accurate forecasts can help prevent understocking or overstocking, optimize resource utilization, and meet customer needs in a timely manner.

Supply chain optimization. AI can optimize logistics and supply chain management, which can help reduce costs and improve delivery times. AI can be used to more effectively manage inventory, plan transportation routes, and coordinate suppliers and partners, improving overall operational efficiency.

Marketing personalization. AI can analyze customer behavior and provide personalized recommendations to make marketing campaigns more effective. A personalized approach allows you to better meet customer needs, increase their loyalty and drive sales. AI helps create more targeted and relevant advertising messages, which improves customer engagement.

Quality management. AI can monitor product quality and detect defects at an early stage, which reduces defects and improves product quality. AI systems can analyze data from production processes, detect anomalies, and automatically adjust parameters, which ensures consistent product quality and reduces the cost of defect correction.

In summary, the use of artificial intelligence (AI) in the use of industrial enterprises' production capacities shows significant potential for improving the efficiency and sustainability of various sectors. Data analysis, process automation, demand forecasting, supply chain optimization, marketing personalization, and product quality management are key areas where AI can significantly improve productivity and reduce costs.

Improving efficiency: AI can optimize production processes, reduce waste, and improve product quality. This helps reduce costs and increase the competitiveness of enterprises.

Innovation and development: The introduction of AI will help to develop innovations and new technologies, which is especially important for industries such as textiles and chemicals.

Adaptability: Digitalization and the use of artificial intelligence will allow enterprises to quickly adapt to market changes, improve resource management, and increase operational efficiency.

Social responsibility: The introduction of sustainable and environmentally friendly technologies into production processes through AI will help reduce negative environmental impacts and contribute to sustainable economic development.

In the conditions of Uzbekistan, where industry plays an important role in the economy, the mastery of artificial intelligence and digital technologies is important for maintaining and improving production capacities. This will allow our country not only to strengthen its position in the global market, but also to ensure sustainable economic development and improve the quality of life of the population.

The use of artificial intelligence in the textile, metallurgical, chemical and other industries, as well as in healthcare management, creates enormous opportunities for optimizing processes, improving product quality, and improving resource management. Thus, the future lies in digital technologies and innovations that will drive economic growth and development in Uzbekistan. Artificial intelligence provides enterprises with a wide range of tools and solutions to improve their capabilities. Data analytics, process automation, demand forecasting, supply chain optimization, marketing personalization, and quality management - all this allows enterprises to improve operational and strategic processes, increase competitiveness, and meet customer needs at a higher level. The introduction of artificial intelligence has become an integral part of the development strategy of modern enterprises, contributing to their growth and innovation.

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