



HOW AI IS SHAPING THE DIGITAL ECONOMY: A LOOK AT CHINA, THE USA, AND UZBEKISTAN

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Abstract

The article examines the impact of artificial intelligence (AI) technologies on the digital economy, studying the experience of the USA, China and Uzbekistan through comparative analysis. Based on a scientific-analytical approach, artificial intelligence policies, financing mechanisms, human resource capacity and the state of technological infrastructure in these countries have been studied. According to the results of SWOT analysis, although Uzbekistan has certain opportunities for integrating artificial intelligence into digitalization of the economy, weaknesses and threats that need to be addressed in this regard have been considered. Practical recommendations have been developed for Uzbekistan in the article, including the need to train qualified specialists, strengthen international partnerships and improve the legal-regulatory framework related to AI.

Keywords: Artificial intelligence, digital economy, innovation, USA, China, Uzbekistan, comparative analysis, SWOT analysis, digital transformation, startup, technological infrastructure.

Introduction

In the 21st century, digital transformation is recognized not only as a technological process, but as a global phenomenon that initiates profound economic, social and political changes. Integration of digital technologies into



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all sectors of the economy — from production to services, education, healthcare and public administration — is becoming one of the main factors determining countries' competitiveness and sustainable development level. In particular, the rapid development of artificial intelligence (AI) technologies enables the implementation of innovative solutions in many fields. The USA and China, as global leader states in artificial intelligence, lead in developing advanced technologies, financing scientific research and creating AI-based platforms. Uzbekistan has designated the development of digital economy through the introduction of new technologies as a priority direction.

In today's digital transformation process, scientific views on the economic efficiency of artificial intelligence technologies, their impact on jobs, contribution to the investment environment and issues of digital sovereignty are diverse. For developing countries like Uzbekistan, issues of adapting AI technologies to national conditions, developing human resource capacity and supporting local startups rather than importing AI technologies remain relevant. First, let's see what artificial intelligence itself is: artificial intelligence is the ability of machines and computer systems to perform functions characteristic of human intelligence: learning, logical thinking, problem solving and decision making. Digital economy includes economic activities organized based on the internet, mobile technologies, cloud computing and artificial intelligence.

Digital economy theory has been developed by scholars such as Castells (1996), Brynjolfsson & McAfee (2014), and Tapscott (2016), and the impact of digital technologies on capital movements, labor markets and production chains has been deeply studied. Artificial intelligence is viewed as a new engine of economic growth (McKinsey, 2023).

In today's global economic competition, the rapid development of the artificial intelligence (AI) field is becoming one of the main factors determining countries' technological sovereignty and innovative capacity. Developed countries are forming a systematic approach in this field, ensuring strong integration between science, industry and public administration. The USA and China have advanced experience in this regard, each attracting artificial intelligence to economic transformation based on their own unique models.



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The USA maintains global leadership in the field of artificial intelligence. In 2024, investments in this direction reached \$109 billion USD, with more than 20,000 AI startups operating in the country (Stanford HAI, 2024). Most of them work in cooperation with leading universities like MIT and Stanford. The National AI Initiative Act implemented by the government since 2019 is an important initiative strengthening strategic cooperation between science and industry. As a result, exports of digital products are increasing, and the service sector is being fundamentally transformed based on new technologies. Particularly, with the popularization of services based on language models like ChatGPT, new professions based on artificial intelligence — AI engineer, data scientist and similar specializations — are gaining high demand in the labor market.

China operates based on centralized state policy and planned transformation model. In 2023, the total volume of the artificial intelligence industry in the country reached 578 billion yuan (\$79.6 billion USD). AI technologies are widely implemented in priority sectors such as smart manufacturing, transport, and security based on state policy. China's main advantages are considered to be the approach aimed at creating an innovative environment through large databases (Big Data), AI parks and technoparks based on public-private partnerships, and special zones with preferential tax regimes. This enables the country to achieve digital independence in the AI field.

Uzbekistan, although at the initial stage in this direction, is taking important strategic steps. Within the framework of the "Artificial Intelligence Development Strategy" adopted in 2024, the country aims to become a digital technology center in Central Asia by 2030. Currently, there are more than 1000 startups in the IT-Park territory, of which only 5% belong to the artificial intelligence field. Along with this, the number of courses in Data Science and Machine Learning directions is increasing, but infrastructure and specialist shortages remain the main problem. The lack of local algorithms, mainly importing AI products, and the incomplete formation of the normative-legal framework in the field are among Uzbekistan's main challenges.

Thus, the experience of the USA and China shows that in developing artificial intelligence, it is necessary to develop not only technology, but also inter-



institutional cooperation, human capital, infrastructure and legislative framework in a coordinated manner. For Uzbekistan, adapting international experience, supporting local startups and strategically expanding AI-related education are of great importance in this process.

Table 1 Comparative analysis: the experience of the USA, China, and Uzbekistan in developing an ai-based digital economy

Indicator	USA	China	Uzbekistan
Annual AI investment	\$109 billion	\$79.6 billion	\$100 million (approx.)
Number of AI startups	20,000+	4,000+	Around 50-100
State strategy	National AI Initiative	"New Generation AI Plan"	"AI Technology Development Strategy" (2024)
Personnel training	Special directions in universities	Comprehensive training system	At initial stage
Export potential	High (ChatGPT, Tesla AI)	Medium – domestic market priority	Low – domestic consumption

Although Uzbekistan is currently at the initial stage in deeply integrating artificial intelligence into the economy, important strategic foundations are being created. In particular, the "Artificial Intelligence Development Strategy" has been adopted, IT-Park infrastructure is being gradually expanded, and advanced foreign experiences are being studied. However, much work still needs to be done to become an equal participant in the global digital economy in this field. First of all, it is necessary to develop clear normative documents on artificial intelligence legislation and information security. Along with this, increasing the export potential of locally developed algorithms and AI products and promoting them in international markets is also important. Additionally, it will be possible to give greater impetus to innovative development by widely attracting foreign investments to the IT sector and strengthening the startup ecosystem.

The current state of the Republic of Uzbekistan regarding the transition to a digital economy based on artificial intelligence (AI) is analyzed within the framework of the following SWOT analysis:



Strengths:

- Strategic attention at the Presidential level: AI technology development strategy was adopted in 2024 (Resolution No. PQ-348).
- Startups and innovative projects are supported through platforms like IT-Park and Digital Uzbekistan.
- Digital skills are increasing among youth, particularly Data Science, Python and AI courses are becoming popular.
- Being an IT-hub in Central Asia has been designated as a strategic priority direction.

Weaknesses:

- Few local companies developing AI technologies, most technologies depend on foreign suppliers.
- Shortage of qualified specialists, "brain drain" situation.
- Legislation, technical regulations and ethical standards in AI-related fields are not adequately developed.
- Regional differences in digital infrastructure (urban-rural) are noticeable.

Opportunities:

- Tax and customs privileges exist to attract international IT companies to Uzbekistan.
- Digital partnership with China and South Korea is being strengthened within the "Digital Silk Road" framework.
- Large number of youth – a resource for forming digital consumers and creators.
- Uzbekistan's implementation of ESG principles creates opportunities to direct AI toward green economy.

Threats:

- Geopolitical instabilities may affect global technological supply chains.
- Inappropriate or unethical use of AI algorithms (e.g., cyber threats).
- Competition in the international AI market is very high – entry barriers are large for new players.
- Lack of systematic financing mechanisms may limit innovative projects.

This SWOT analysis shows that Uzbekistan has opportunities to integrate artificial intelligence technologies into the digital economy. However, strong political will, investment in personnel, international partnerships and ensuring technological independence are of great importance in this direction.

CONCLUSION

This article conducted a comparative analysis of the development of artificial intelligence-based digital economy using the examples of the USA, China and Uzbekistan. According to the analysis results, the USA and China are world leaders in digital economy and AI fields, and their success depends on the harmony of scientific research, state policy and innovative environment. Uzbekistan is at the initial stage in implementing artificial intelligence into the economy with strategic documents and startup infrastructure. However, shortage



of qualified personnel, financing limitations and technological independence issues remain relevant problems in the country.

Therefore, it is recommended to pay special attention to the following directions in Uzbekistan:

- Training qualified specialists in artificial intelligence and retaining them in the country;
- Creating sustainable financing mechanisms for innovative startups;
- Improving laws in the field of information security and AI ethics;
- Expanding international cooperation and increasing the export potential of the digital economy.

In this way, Uzbekistan has the opportunity to occupy leading positions in Central Asia in developing the digital economy through artificial intelligence.

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