Uzbekistan and World Trends in the Development of Artificial Intelligence

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Annotation: The spreading new digital technologies have an increasing impact on modern civilization, in particular artificial intelligence. AI technologies are changing processes in industry, energy, education, healthcare and banking, as well as affecting the mobility of the population. AI technologies are predicted to lead to significant economic shifts in the future, driven by increased productivity through the use of machines that can perform new functions, and this, in turn, will accelerate the transition of the world economy to a path of sustainable development.

Key words: Uzbekistan, era, AI, strategy, development, digitalization, expert, scientific and technological progress, technologies, sustainable development.

The world community has entered a period of digital transformations that are fundamentally changing all spheres of people's lives and activities. The high rates of scientific and technological progress (STP) in various areas of production and commercial activity have led to the emergence and development of such a phenomenon of the world economy and international economic relations as the emergence of a new economic phenomenon called "artificial intelligence", which is one of the key areas of digitalization.

The introduction of these technologies makes it possible to reduce the gap in information provision and the receipt of various social services, and in some cases even surpass human capabilities in various fields of activity.[1]

It should be noted that after the coronavirus pandemic, AI solutions deployed in the cloud infrastructure will become widespread. Companies believe that deploying smart technologies in the cloud will be more efficient and flexible.

Every day more and more companies are betting on artificial intelligence (AI), starting from small start-ups and ending with large companies, among which not only the IT giants Google, Microsoft, Facebook, IBM stand out, but also those that, it would seem, are far from this topic: for example, General Motors and Boeing have created a joint laboratory for AI research. It becomes obvious that AI technologies are the real mainstream of our time.

The McKinsey Institute for Research (McKinsey Global Institute) estimates that AI technologies include an additional global GDP growth of about 13 trillion dollars by 2030, which is 1.2% of the additional average annual GDP growth. If these predictions come true, then the influence of AI will be excluded from the situation with other universal technologies in the history of French communities. For example, the use of steam engines in the 1800s increased labor productivity by about 0.3% per year, robots in the 1990s by about 0.4%, new information and communication technologies (ICTs) in the early 2000s – by 0.6% [2]

At a large stage of development, specialists have developed five of the most common AI technologies: computer vision, natural language, virtual assistants, robotic process automation, and

advanced machine learning. It is estimated that by 2030, about 70% of companies will implement at least one type of AI technology, and 50% of them will fully master all five. Baseline survey data from approximately 3,000 firms in 14 different sectors, also at high-level international organizations.[2]

5 forecasts for the development of the AI market are proposed. In particular, analysts noted how the artificial intelligence market will be present until 2025, and described serious and far-reaching ethical and scientific problems associated with AI. Five Gartner analysts identified some cases, focusing on the unintended consequences of new technology developments.

The forecast examines five different forecasts for the artificial intelligence market and makes recommendations on how companies can address emerging issues and adapt to the future:

➢ By 2025, pre-trained AI models will be largely in the hands of 1% of vendors;

➢ in 2023, 20% of successful account takeover attacks will use deepfakes;

➢ By 2024, 60% of AI vendors will include measures in their software to prevent its potentially malicious/misuse;

➢ By 2025, 10% of governments will avoid privacy and security concerns by using select populations to train AI;

➢ By 2025, 75% of workplace conversations will be recorded and analyzed for organizational value and risk assessment.

Other researchers have used the S-curve pattern to calculate the impact of AI on economic growth. It involves a slow start, due to the significant costs and investments associated with the study and deployment of new technologies, and then acceleration due to the combined effect of innovation-enhancing capabilities and competitive success. This slow burn pattern can be interpreted as evidence that the effect of the introduction of AI in the future is limited.

The share of private investments aimed at the development of artificial intelligence technologies in 2020 showed an increase of 9.3%, exceeding 40 billion dollars.

Taking into account the experience of combating the pandemic, in 2021 it is planned to expand digitalization in the healthcare sector, complete the implementation of electronic polyclinic and telemedicine systems in the regions. The digital transformation of the banking sector will continue, including automated control systems and financial technologies. For the digitalization of agriculture, more than $600 million will be attracted to introduce modern agricultural technologies and innovative solutions.

In the next two years, it is planned to attract about $2.5 billion for the development of digital infrastructure. It is planned to launch three large new data centers in the cities of Tashkent (expanding by 5 PB and bringing it up to 10 PB), Bukhara and Kokand (by 50 PB each), as well as further expansion of the fixed telecommunications network and modernization of the mobile network. As a result, households will have access to the Internet at a speed of at least 10 Mbps in each settlement.

Given this, on February 17, 2021, the Decree of the President of the Republic of Uzbekistan "On measures to create conditions for the accelerated implementation of artificial intelligence technologies" was adopted. This document laid the legal foundation for the further development of AI technologies and defined its main directions. In this context, the development of AI technology today is a requirement of the times.

The Decree also provides for the development of an Artificial Intelligence Development Strategy, which, first of all, determines the basic directions and principles for the use of artificial intelligence, the conditions for the complex formation of this area in the short and long term, and secondly, the development of a regulatory framework that defines uniform requirements, responsibility, security and transparency when using artificial intelligence technologies in the sectors of the economy and

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the social sphere, the public administration system, improving the quality of public services in the interests of the population.

In accordance with the directions of the Strategy "Digital Uzbekistan-2030", as well as in order to create favorable conditions for the accelerated introduction of artificial intelligence technologies and their widespread use in the country, work is underway to ensure the availability and high quality of digital data, the training of qualified personnel in this field, By the Decree of the President of the Republic of Uzbekistan, the Program of Measures for the Study and Implementation of Artificial Intelligence Technologies in 2021-2022 was approved / [5].

This program includes the following main priority areas:

➢ development of the Strategy for the Development of Artificial Intelligence, which will define the basic directions and principles for the use of artificial intelligence;

➢ development of a regulatory framework with unified regulatory requirements;

➢ widespread use of AI technologies to improve the quality of public services in the interests of the population, as well as to increase the efficiency of government agencies in data processing;

➢ creation of a domestic ecosystem of innovative developments in the field of artificial intelligence;

➢ formation of investment attractiveness of scientific works and developments in the field of artificial intelligence;

➢ providing access for Uzbek enterprises and specialists to information resources and competencies in the field of AI, as well as developing the necessary educational environment;

➢ development of international cooperation in the field of artificial intelligence and technologies for its application for conducting joint international research activities, training and improving their skills, improving the position of the republic in prestigious ratings and indices [6].

Based on the above documents, Uzbekistan has determined a list of areas and industries where artificial intelligence technologies will be introduced first.

In particular, this applies to the following sectors of the economy: agriculture, banking, finance, tax system, transport, energy, healthcare, pharmaceuticals, e-government.

It is very important to note that Uzbekistan has a valuable opportunity for broad cooperation with Russia, which is one of the world leaders in the development and use of AI. This is the best option, which has the benefits of a certain closeness of mentality, and also there are no problems associated with the language barrier. It is planned to cooperate with the Sber Group, introduce SubTech and RegTech artificial intelligence technologies for monitoring commercial banks, as well as for analyzing the quality of banking services, and remote Face-ID biometric identification[5].

Developments in this area are an area of intense international competition, large investments, advanced and very complex mathematics, and high stakes. It is believed that AI can provide a 40% increase in productivity, and the countries that apply it will be among the economic leaders in the world.

However, several aspects should be noted. First, AI is not cheap, and Uzbek companies do not yet have such economic opportunities to allocate the necessary funds for the development and commissioning of their own intellectual system. And this means that these works will be carried out with active state participation and funding from the state budget, which can lead to certain problems for production structures.

Secondly, if the state participates, then such intellectual systems will be selected that solve the most important problems for the entire republic and give the greatest economic task, i.e. needed for large scale production. This circumstance will significantly limit the choice of some manufacturers.

But nevertheless, AI technologies can bring huge benefits for business and Uzbekistan. A study by the French company "Capgemeni Consulting" notes that three out of four organizations using AI

technologies were able to increase sales of new products and services by more than 10% [8]. And they showed the following average annual results of their activities using AI technologies:

increase in the number of buyers - from 10 to 30%;

➢ growth of network promoters – by 30–50%;

➢ increase in the total number of the company's clients – 2.5 million people (new clients);

➢ Increase in the rate of renewal of the company's clientele - from 500 to 800.

According to some estimates of experts, the economic effect of investments in companies developing AI technologies can amount to 2016-2036 in the period 2016-2036 from $296.5 to $657.7 billion in high-income countries. With venture investments in AI during the same period, GDP in these countries increases from 63.1 to 115.5 billion dollars. The economic effect of these forms of investment (not including capital investments in AI) will be from 359.6 to 773 .2 billion dollars [9].

It should be noted that artificial intelligence (AI) technologies are already being widely implemented and are widely used in the industry. For example, the so-called M2M (machine to machine) technologies, which involve the interaction of machines (including programs), are increasingly being used in various industries. AI technologies make it possible to achieve high economic benefits by optimizing workflows, to ensure high production volumes and at the same time a high level of product quality. As an example, such aspects of human activity, where AI technologies are of an applied nature:

➢ mobile taxi and delivery service,

➢ "smart home" system,

➢ Smart watch and so on.

All these innovations are designed to facilitate the daily life of a person, to create additional conveniences for him.

In conclusion, we can emphasize that the use of AI technologies largely determines the competitiveness of countries and the level of security of society in the near future. It is possible that the economic impact of AI will be stronger than other generic technologies. However, the benefits of AI are likely to take time to materialize, and the benefits of initial investment in AI may not be visible in the short term.

At the same time, studies show that the impact of AI on economic development will increase over time. At the same time, there is a risk of widening the technological gap between those who quickly adopt these technologies and those who do not, and between workers with and those who do not. Therefore, the benefits of AI are likely to be unevenly distributed. Moreover, if the development and implementation of these technologies is carried out irrationally, inequality will deepen, fueling various socio-economic conflicts within society. The government of Uzbekistan, which has determined the policy of introducing AI, needs to use long-term strategic planning methods in order to overcome the negative manifestations of automation and digitalization of production processes.

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