

The Main Stages in the Development of the Digital Economy of Uzbekistan

Mukumova Nargis Nuriddinovna

Senior lecturer, Samarkand University of Architecture and Civil Engineering

Saydirasulov Alisher Zokirovich

Trainer teacher, Samarkand University of Architecture and Civil Engineering

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ABSTRACT

The article describes the stages of formation and development of the digital economy in Uzbekistan. The level of development of information and switching technologies is analyzed. Selected international ratings for assessing the development of information technology in the country.

Introduction. The digitalization of society is a natural process today: after all, it is the daily activities of a person that are increasingly performed, and in addition, improved using the latest advances in the computer field. The current stage of world economic and social development has allowed almost the entire population of the world to gain access to technical innovations. In this regard, the global world is undergoing a digital transformation that is occurring at a faster pace, driven by the availability of information and communication technologies.

As part of the third industrial revolution at the end of the 20th century. the world has come to such innovative breakthroughs as:

- 1) digitalization;
- 2) development of electronics;
- 3) widespread use of information and communication technologies (hereinafter referred to as ICT);
- 4) the widespread use of electronics and information technology in order to continue the development of the automation process [5].

A distinctive feature of the modernization of the economy by the end of the 20th century. and the beginning of the 21st century. There was a large amount of replacement of assembly lines and

tools for automated mechanisms, namely, 80-90% of the total equipment was replaced. There was also a transition from analog electronic and mechanical devices to digital technologies.

It can be said that the digital economy is a reflection of the transition from the third to the fourth industrial revolution. While the third industrial revolution represented the transition from analog electronic and mechanical devices to digital ones, then, in turn, the fourth industrial revolution is digital, since it includes the process of direct integration of computing resources into physical processes, when all information systems, equipment and sensors are linked throughout the value chain, which may extend beyond a single firm or business.

Canadian information technology scientist Don Tapscotta, in his book *Digital Economy: Promise and Danger in the Age of Network Intelligence*, considered the problem of how the Internet can fundamentally change existing business models, and already in 1995 he became the first to define the concept of "digital economy".

From his point of view, the digital economy includes the transformation of economic activity with the help of digital technologies that provide access, processing and storage of information in a simpler and more economical way [6].

Main part. Experts explain that it is customary to include e-commerce, the e-government system, the introduction of "smart" technologies in production processes, the creation of "Smart City", "Safe City" systems, etc., as well as the widespread use of "Internet of things" technologies in the components of the digital economy. "

The degree of development of the digital economy in the country, which is directly related to the level of development of information and switching technologies (ICT), is usually assessed by various indicators: the share of the digital economy in GDP, the amount of investment in the ICT industry, Internet speed, its coverage of the country's territory and accessibility for use by the population, the level of development of e-commerce, the share of public services in the e-government system, the provision of organizations with specialists in the field of ICT, etc. In addition, indicators in international ratings that assess the degree of development of information technologies in the country are important.

Significant progress has been made in Uzbekistan since 2016.

Thus, the gross value added created in the field of services in the field of "information and communication" has doubled since 2016 from 4.4 to 8.8 trillion soums, and the volume of services provided by the type of economic activity "information and communication" has increased by 2 times from 6.3 to 12.9 trillion soums.

Dynamics of growth in the volume of services provided by type of economic activity "information and communication" in 2016-2020 (trillion soums)

	2016 г.	2017 г.	2018 г.	2019 г.	2020 г.
Services — total, including	97,1	118,8	150,9	193,7	218,9
growth rate (in %)	114,7	110,7	108,9	113,2	102,3
spheres "informatization and communication"	6,3	8,2	10,3	10,9	12,9
growth rate (in %)	114,6	121,3	115,9	108,3	115,3

Source: Goskomstat data

According to the table, it can be concluded that the development of the ICT industry was facilitated by the growth in the volume of investments in fixed assets by the type of activity "information and communication", which in the period 2016-2020 increased 4 times from 1.2 to 4.8 trillion soums, in among them, the volume of foreign investments and loans increased by 2.5 times from 0.8 to 2 trillion soums.

On April 28, 2020, the President of the Republic of Uzbekistan signed Decree No. 4699 "On measures for the widespread introduction of the digital economy and e-government". By 2023, it is planned to double the share of the digital economy in the GDP of Uzbekistan, and the number of electronic public services to 376 (currently, the provision of 326 public services through the Single Portal of Interactive Public Services (SPIS) has launched. [1]

The decision also provides for the development of digital entrepreneurship by increasing the volume of services in this area by 3 times and increasing their exports to \$100 million by 2023. Also noteworthy is the opening of digital literacy training centers in all regions in 2022.

In addition, Presidential Decree No. 6079 of October 5, 2020 approved the national strategy "Digital Uzbekistan - 2030", and the share of the digital economy in GDP in 2030 is 30 percent, and the targets for the development of digitalization are described in more detail in Section 2. [2]

According to the UNCTAD Digital Economy Report published in 2019, 7 digital companies (Microsoft, Apple, Amazon, Google, Facebook, Alibaba and Tencent) account for 3/2 of the total global market capitalization. About 40 percent of the value added generated by global information and communications technology comes from the United States and China.

As of 2021, the share of the digital economy in the gross domestic product of Uzbekistan was 1.6 percent, in the United States - 9.3 percent, in China - 3.8 percent, in India - 8 percent.

By 2025, the global digital economy will reach \$23 trillion, its share in global GDP will increase from the current 17.1% to 24.3%. 100 billion connections will be installed worldwide to digitally transform utilities, industry and agriculture, transportation, finance and more. The number of enterprises using cloud technologies is 85%, artificial intelligence - 86%, digital big data - 80%. [11]

There are some international ratings for assessing the development of information technology in the country. In these ratings, along with the place occupied, an index is indicated, which takes into account several parameters at once reflecting the state of development of this area, "the researchers write.

One of these is the Telecommunication Infrastructure Index (TII), which is formed on the basis of the following indicators per 100 inhabitants of the country: the number of users of the Internet and fixed telephone lines, as well as subscribers to mobile communications, wireless broadband and fixed broadband networks. Since 2016, Uzbekistan has improved its performance on this index from 0.246 to 0.472.

The ICT Development Index (IDI), which was last compiled by the International Telecommunication Union at the end of 2017 among 176 countries of the world. The IDI index consists of 11 statistical indicators that reflect the accessibility to ICT, the degree of their use and practical skills in the use of ICT by the population. A new methodology for compiling the IDI index is currently being developed. In the latest ranking of the IDI index, Uzbekistan rose by 8 positions compared to 2016 and took 95th place (index - 4.9) among 176 countries of the world.

The Global Cybersecurity Index is also compiled by the International Telecommunication Union and assesses the level of government commitment in five areas: legal measures, technical measures, organizational measures, capacity development and international cooperation. Since 2016, Uzbekistan has improved its performance in this ranking from 0.1471 to 0.666 and has risen from 93rd to 52nd place among 175 countries [10].

The Mobile Index is compiled by the International Association of Mobile Operators (or "GSMA Association"), which also includes all mobile operators in Uzbekistan. The index shows the degree of development and use of the mobile Internet. The index measures performance in more than 170 countries against the key drivers of mobile internet adoption: infrastructure, accessibility, consumer readiness, content and services.

	2016 г.	2017 г.	2018 г.	2019 г.
Mobile Index	36,9	40,7	44,5	46,8
Place in the ranking (out of 170 countries)	134	132	127	124

Source: GSMA Mobile Connectivity Index

The index helps the mobile communications industry determine where to focus its efforts in order to drive wider adoption of the mobile internet. Over the past four years, Uzbekistan has improved its performance in this index from 36.9 to 46.8 and approached the world average of 50.

The E-Government Development Index (EGDI) is compiled by the Department of Economic and Social Affairs of the UN Secretariat based on the indicators of three sub-indices: the development of online public services, telecommunications infrastructure and human capital development. In terms of this index, Uzbekistan has improved its performance from 0.54 to 0.67 since 2016 and ranks 87th in the ranking among 193 states.

In order to create conditions for citizens to receive public services in electronic format, in 2017 Uzbekistan launched a new version of the Single Portal of Interactive Public Services (Single Portal, SPIGU - my.gov.uz), which is a single electronic platform for citizens and entrepreneurs to access obtaining public services and the necessary information on them. At present, the number of types of services provided at the SPSI has reached more than 300 in 20 areas.

In the future, it is planned to increase the share of public services provided in electronic format to 60% by 2022 and to 80% by 2025, as well as to raise it to 50th place in the e-Government Development Index by 2025.

Conclusion. The digital economy powered by information technology platforms is rapidly developing, which requires the creation of new models and technologies for such platforms. These are conductive (complex) technologies of the digital economy:

1. Big data technologies;
2. Internet technologies (IoT - Internet of Things);
3. Mobile technologies;
4. Cloud technologies (Cloud computing);
5. Virtual and augmented technologies (VR - virtual reality) (AR - augmented reality);
6. Neurotechnologies and artificial intelligence (AI);
7. Digital platforms;
8. Quantum technologies;
9. Robotics;
10. Blockchain and cryptocurrency technologies;
11. Crowdsourcing and crowdfunding.

The introduction of the digital economy into the real sector of the economy serves to form technical and technological competencies, which requires the creation of centers for expert support of scientific research and development, as well as their commercialization. Thus, the practice of forming the "Digital Economy" shows that its influence on economic processes is multifaceted, and this impact is stable and penetrates into all spheres of society, the state and the life of the population.

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