

#### APPLICATION OF DIGITAL TECHNOLOGIES TO ECONOMY IN THE NEW UZBEKISTAN

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#### Annotation

This article describes the concept of the digital economy, the prospects for the development of the digital economy in Uzbekistan.

**Keywords:** digital economy, information society, digital technologies, e-government.

#### ПРИМЕНЕНИЕ ЦИФРОВЫХ ТЕХНОЛОГИЙ В ЭКОНОМИКЕ В НОВОМ УЗБЕКИСТАНЕ

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**Аннотация.** В данной статье описывается понятие цифровой экономики, перспективы развития цифровой экономики в Узбекистане.

**Ключевые слова:** цифровая экономика, информационное общество, цифровые технологии, электронное правительство.

### ЯНГИ ЎЗБЕКИСТОНДА РАҚАМЛИ ТЕХНОЛОГИЯЛАРНИ ИҚТИСОДИЁТГА ТАТБИҚ ЭТИШ

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**Аннотация.** Ушбу мақолада рақамли иқтисодиёт тушунчаси, Ўзбекистонда рақамли иқтисодиётни ривожланиш истиқболлари ёритилган.

**Калит сўзлар:** рақамли иқтисодиёт, ахборотлашган жамият, рақамли технологиялар, электрон ҳукумат.

#### Introduction

The digital economy is an economy that provides for the widespread introduction of electronic and information and communication technologies in the processes of production, distribution and consumption of public goods. The digital economy is an innovative idea, according to the World Bank in its 2016 World Development Report: Digital Dividends. In the digital economy, the management process (with professional staff) is a computerized interaction management system that carries out large-scale work on the active use of electronic information to meet the growing needs of mankind. For example, this includes forecasting, planning, organizing, executing, controlling, and coordinating system activities. That is, there should be a common integrated system for managing the national economic complex, based on the collection and analysis of data for the development and implementation of the country's development paths.

Signs of the digital economy are a high degree of automation, electronic document management, electronic integration of accounting and management systems, electronic databases, the presence of CRM (customer interaction systems), corporate networks. In the digital economy, the costs of payments are reduced (for example, trips to the bank and other resources are saved), more and faster information about goods and services is obtained, the possibility of entering the world market for goods and services in the digital world is wonderful thanks to fast feedback (consumer opinion) and rapid improvement of services.

While digital data is a valuable economic resource, it is only useful when it is transformed into digital thinking. With the advent of the digital economy comes the challenge of creating digital platforms and monetizing fast-growing digital data. It is important to identify ways to create value and remove barriers to these processes.

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It provides insight into the potential for value creation and distribution, value renewal, value management, and value capture. In the perspective of the modern development of big data technologies (Big Data), artificial intelligence, neurotechnologies, quantum technologies, the Internet of things, robotics and sensors, digital electronic platforms, cloud and mobile technologies, virtual and augmented reality technologies, crowdsourcing, blockchain technologies, digital technologies such as cryptocurrencies, 3D technologies are becoming decisive.

#### **Review of Literature on the Topic**

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Academician S. Gulyamov said: "The term digital economy is used to refer to two different concepts. Firstly, the digital economy is considered the modern stage of development, characterized by the priority of creativity and information benefits. Secondly, the digital economy is a unique theory, the object of its study is the information society." [Gulyamov S.S., 2019]

Klaus Schwab, who substantiated the fact that the main factor of production in the digital economy is not capital, but human potential, explains that in the world of the future, not only the fourth industrial revolution, but also factors not related to technology, including demographic problems, geopolitical changes, the emergence of new specialties and professions. [Klaus Schwab, 2016]

Thomas Mesenburg E-business infrastructure (hardware, software products, telecommunications, networks, human capital, etc.), e-business (the way business is done, i.e. processes and communication networks carried out by an organization using any information), e -commerce as three aspects of the digital economy acts as the main component. [T. Mezenburg, 2001]

M. L. Kaluysky defines the digital economy as a communication environment for economic activity on the Internet and forms, methods, means and results of its implementation. [Kaluzhsky M.L., 2014]

#### **Research Methods**

Empirical studies, systematic and comparative analysis, and cross-sectional analysis methods were used.

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**INNOVATIVE TECHNOLOGICA** 

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#### **Analysis and Results**

The digital economy is believed to be bringing unprecedented change to more than half of today's industries. For example, according to World Bank experts, a 10% increase in the number of high-speed Internet users allows an annual increase in the gross volume of national economies by an average of 0.4-1.4%. The growth rate of the digital economy in the world is almost 20 percent per year. In developed countries, the share of the digital economy in the gross domestic product has reached 7%. They are already benefiting greatly from the introduction of the digital economy. In particular, the United States exports over \$400 billion worth of digital services annually. More than 5 percent of the country's gross domestic product is directly related to the Internet and information and telecommunications technologies. By 2025, the US will save an additional \$20 trillion from industrial digitalization. expected income in dollars. This economic efficiency is particularly strong in consumer goods (\$10.3 trillion), automotive (\$3.8 trillion) and logistics (\$3.9 trillion).

According to the results of various studies, the weight of the digital economy in the global economy ranges from 4.5 to 15.5 percent. The United States and the People's Republic of China account for nearly 40 percent of the value added in the global information and communications technology sector and 75 percent of blockchain-related patents.

According to the statistics provided by the President of our country Sh. M. Mirziyoyev at an event dedicated to the development of information technologies on February 13, 2020, the share of the digital economy in the gross domestic product in the United States is 10.9 percent. , in China - 10 percent, and in India - 5.5 percent. In Uzbekistan, this figure does not exceed 2 percent.

To appreciate the growing importance and impact of digitalization, just look at the share of global market capitalization of several large technology companies and digital platforms over the past decade. In particular, according to the UN Conference on Trade and Development, in 2009 this figure was 16 percent, and by the end of 2018 it reached 56 percent.

In the context of such rapid changes and increased competition in the global community, the fact is that without the widespread introduction of innovations and digital technologies, we will not be able to sustainably develop the economy of our country and ensure its competitiveness in the

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near and far future, which, in turn, requires strengthening scientific and practical efforts. In this regard, in recent years, as part of comprehensive reforms to radically modernize our national economy, a number of measures have been taken to introduce digital technologies into the socio-economic life and public administration system of our country. In particular, an important step in the development of the digital economy was the adoption of the Decree of the President of the Republic of Uzbekistan PQ-3832 dated July 3, 2018 "On measures to develop the digital economy in the Republic of Uzbekistan", and the most important tasks for the further development of the digital economy in our country were identified.

For example, the introduction of the "Electronic Government" system in our country is an integral part of the development of the digital economy, and its main goal is to simplify the transition from administrative procedures and procedures, to improve the quality of life of the population. population, and improve the investment and business environment.

Passage of administrative procedures in our country consistent measures are being taken to modernize and develop e-government, including systems for the provision of public services, aimed at simplifying, improving the quality of life of the population, and improving the investment and business environment. On November 21, 2018, the Decree of the President of the Republic of Uzbekistan No. PQ-4022 "On measures to further modernize the digital infrastructure in order to develop the digital economy" was adopted. The decision defines the main tasks for creating conditions for the rapid development of the digital economy, further improving the public administration system, expanding the possibilities of its use, and using modern infrastructure.

On December 18, 2018, Decree of the President of the Republic of Uzbekistan No. 5598 "On additional measures to introduce the digital economy, egovernment and information systems into the public administration system of the Republic of Uzbekistan" was promulgated. In order to develop the digital economy, ensure the introduction of the "Electronic Government" system, create additional conditions for effective interaction between the population, business and the state, as well as in accordance with the Action Strategy for the five priority areas of development of the Republic of

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Uzbekistan in 2017-2021, the Decree on electronic is intended to determine a purposeful the importance of public administration as a single national system to ensure effective interaction between the state, the population and business, as well as integration into the digital space of the world. By creating a single national distributor of projects, a single process will be established (development, design, approval, procurement of goods, works, services, as well as a single system for their commissioning). As a result, the system of providing public services in our country is constantly being improved, the investment climate and working conditions are improving.

On May 18, 2019, Decree of the President of the Republic of Uzbekistan PQ-4321 was announced on measures to further improve the infrastructure of the Digital Economy and the Electronic Government system. The decision identifies important tasks for the consistent implementation of the main directions of reforms in the field of improving the digital economy and the Electronic Government system.

In order to implement the main tasks, as well as achieve the goal of developing a digital society in our country, creating convenient opportunities for residents and entrepreneurs, developing an effective and open public administration system free from bureaucratic obstacles and corruption factors, today it is necessary to update all sectors of the economy based on digital technologies. A national concept of the "digital economy" is being developed, which is expected to create an opportunity to increase the volume of gross domestic product by an additional 30% due to the development of the digital economy.

In the address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis dated January 24, 2020, the proposal to declare 2020 the Year of the Development of Science, Education and the Digital Economy literally confirmed the beginning of a historical turning point in the life of Uzbekistan in line with world development. It is difficult to imagine the economic development of the world economy in the context of globalization and technological development without the digital economy. According to research, by 2022 a quarter of global GDP will come from the digital sector. However, the fact that Uzbekistan ranks 103rd among more than 170 countries in the international index of development of information and

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communication technologies indicates that many issues remain to be resolved in this area in our country.

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President Shavkat Mirziyoyev said: "At present, when the glorious power of our people is flourishing, the foundation of a new revival, the Third Revival, is being laid in Uzbekistan."

To achieve such lofty goals, one of the main goals of the innovative development strategy of the Republic of Uzbekistan for 2019-2021 is the development of human capital, and the other is to enter the top 50 countries of the world according to the Global Innovation Index. rating by 2030.

The Republic of Uzbekistan ranked 122 out of 141 countries in the Global Innovation Index in 2015. In subsequent years, our republic was not included in this rating. 2020 has returned to the Global Innovation Index of Uzbekistan. This return is a positive result of the reforms being carried out in the new Uzbekistan. The fact that Uzbekistan took 93rd place and climbed 30 positions in the ranking is the result of the attention paid to science and resources aimed at innovative development. In recent years, investments in science, the formation of a regulatory framework, and most importantly, the conditions created for scientists and the freedom of creativity have determined our place in the Global Innovation Index. This can be seen as a step towards attracting investment in science and innovation in the future.

In particular, the implementation of more than 220 priority projects aimed at improving the e-government system, further developing the local software and information technology market, creating IT parks in all regions of the republic, as well as providing the industry with qualified personnel has begun. In addition, a comprehensive program "Digital Tashkent" is being implemented, which provides for the launch of a geoportal integrated with more than 40 information systems, the creation of an information system for managing public transport and communal infrastructure, the digitalization of the social sphere, and the subsequent implementation of this experience in other regions.

The "Digital Uzbekistan-2030" strategy, approved by the Decree of the President of the Republic of Uzbekistan dated October 5, 2020 "On approval of the "Digital Uzbekistan-2030" strategy and measures for its effective implementation" No. PF-6079 defines its strategic goals, priorities and medium and long-term perspective objectives, and also serves as a basis for

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wider adoption of digital technologies based on the priorities set in the UN Sustainable Development Goals and the E-Government Development Index. Digital infrastructure, e-government, digital economy, the national digital technology market and education and training in the field of information technology are defined as strategic goals and priorities of digital development in the Digital Uzbekistan-2030 strategy.

In conclusion, it should be said that the qualitative development of economic sectors, the social sphere and the public administration system in the current period of human development and in the near future is directly related to the widespread introduction of digital technologies. The development prospects of our country also depend on the development of the digital economy and the level of digital inclusion. For this, it is appropriate to list the following main conditions and priorities for the development of the digital economy:

• creation of institutional environment and digital infrastructure, wide introduction of digital technologies;

• phased provision of full coverage with the ability to connect to the global Internet at the level of developed countries;

 scaling up training for the digital economy and training qualified programmers and engineers with in-depth knowledge;

• support for research work in the field of the digital economy, increasing "digital literacy" among the general population, supporting innovative projects in the scientific community and the private sector, stimulating "start-up" projects in the field of the digital economy;

• strengthening international cooperation in the digital economy.

• an increase in the number of products that require scientific knowledge and incomes of the population, an increase in various budget revenues;

• large-scale involvement of new types of industrial enterprises and modern technologies.

#### **REFERENCES:**

IT

1. Decree of the President of the Republic of Uzbekistan No. PF-6079 dated October 5, 2020 "On approval of the Digital Uzbekistan 2030 strategy and measures for its effective implementation" // www.lex.uz

2. Message from the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis on December 29, 2020 // www.lex.uz

HTTPS://IT.ACADEMIASCIENCE.ORG

METHODICAL RESEARCH JOURNAL ISSN: 2776-0987 Volume 4, Issue 3 Mar. 2023

3. Decree of the President of the Republic of Uzbekistan dated April 28, 2020 "On measures for the widespread introduction of the digital economy and egovernment" // www.lex.uz

4. Decree of the President of the Republic of Uzbekistan dated March 2, 2020 "On the state program for the implementation of the action strategy in five priority areas of development of the Republic of Uzbekistan for 2017-2021 in the Year of Science, Education and Digital Economy Development" // www.lex.uz

5. President of the Republic of Uzbekistan Sh.M. Mirziyoyev's speech at an event dedicated to the development of information technologies on February 13, 2020 // www.lex.uz

6. Decree of the President of the Republic of Uzbekistan PQ-4321 dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the Electronic Government system" // www.lex.uz

7. Decree of the President of the Republic of Uzbekistan dated December 18, 2018 No. 5598 "On additional measures to introduce the digital economy, e-government and information systems into the public administration system of the Republic of Uzbekistan" // www.lex.uz

8. Decree of the President of the Republic of Uzbekistan dated November 21, 2018 "In order to develop the digital economy measures to further modernize the infrastructure" Decree No. PQ-4022 // www.lex.uz

9. Decree of the President of the Republic of Uzbekistan dated July 3, 2018 "On measures to develop the digital economy in the Republic of Uzbekistan" No. PQ-3832 // www.lex.uz

10. Strategy "Digital Uzbekistan - 2030" // www.lex.uz

11. Gulyamov S.S. and others. Blockchain technologies in the digital economy.

- T .: "Economy-Finance", 2019.

IT

12. Klaus Schwab. Fourth industrial revolution. - M. Eksmo., 2016. P.30

13. Kaluysky M.L. Marketing networks and e-commerce: an institutional approach. - M.; Berlin: Direct-Media, 2014. - P.402.

14. Mesenbourg T.L. Measuring of the Digital Economy //The Netcentric Economy Symposium. University of Maryland, 2001.

15. Erkaboev U.I, Rakhimov R.G., Sayidov N.A. Influence of pressure on Landau levels of electrons in the conductivity zone with the parabolic dispersion law // Euroasian Journal of Semiconductors Science and Engineering. 2020. Vol.2., Iss.1.

HTTPS://IT.ACADEMIASCIENCE.ORG

METHODICAL RESEARCH JOURNAL ISSN: 2776-0987 Volume 4, Issue 3 Mar. 2023

16. Rakhimov R.G. Determination magnetic quantum effects in semiconductors at different temperatures // VII Международной научнопрактической конференции «Science and Education: problems and innovations». 2021. pp.12-16. https://elibrary.ru/item.asp?id=44685006

IT

17. Gulyamov G, Erkaboev U.I., Rakhimov R.G., Sayidov N.A., Mirzaev J.I. Influence of a strong magnetic field on Fermi energy oscillations in twodimensional semiconductor materials // Scientific Bulletin. Physical and Mathematical Research. 2021. Vol.3, Iss.1, pp.5-14

18. Erkaboev U.I., Sayidov N.A., Rakhimov R.G., Negmatov U.M. Simulation of the temperature dependence of the quantum oscillations' effects in 2D semiconductor materials // Euroasian Journal of Semiconductors Science and Engineering. 2021. Vol.3., Iss.1.

19. Gulyamov G., Erkaboev U.I., Rakhimov R.G., Mirzaev J.I. On temperature dependence of longitudinal electrical conductivity oscillations in narrow-gap electronic semiconductors // Journal of Nano- and Electronic Physic. 2020. Vol.12, Iss.3, Article ID 03012. https://doi.org/10.1142/S0217979220500526

20. Erkaboev U.I., Gulyamov G., Mirzaev J.I., Rakhimov R.G. Modeling on the temperature dependence of the magnetic susceptibility and electrical conductivity oscillations in narrow-gap semiconductors // International Journal of Modern Physics B. 2020. Vol.34, Iss.7, Article ID 2050052. https://doi.org/10.1142/S0217979220500526

21. Erkaboev U.I., R.G.Rakhimov. Modeling of Shubnikov-de Haas oscillations in narrow band gap semiconductors under the effect of temperature and microwave field // Scientific Bulletin of Namangan State University. 2020. Vol.2, Iss.11. pp.27-35

22. Gulyamov G., Erkaboev U.I., Sayidov N.A., Rakhimov R.G. The influence of temperature on magnetic quantum effects in semiconductor structures // Journal of Applied Science and Engineering. 2020. Vol.23, Iss.3, pp. 453–460. https://doi.org/10.6180/jase.202009\_23(3).0009

23. Erkaboev U.I., Gulyamov G., Mirzaev J.I., Rakhimov R.G., Sayidov N.A. Calculation of the Fermi–Dirac Function Distribution in Two-Dimensional Semiconductor Materials at High Temperatures and Weak Magnetic Fields // Nano. 2021. Vol.16, Iss.9. Article ID 2150102.

https://doi.org/10.1142/S1793292021501022

HTTPS://IT.ACADEMIASCIENCE.ORG



METHODICAL RESEARCH JOURNALISSN: 2776-0987Volume 4, Issue 3 Mar. 2023

24. Ch.T., Chiu P.Y., Liu Ch.Y., Kao H.Sh., Harris C.Th., Lu T.M., Hsieh Ch.T., Chang Sh.W., Li J.Y. Strain Effects on Rashba Spin-Orbit Coupling of 2D Hole Gases in GeSn/Ge Heterostructures // Advanced Materials. 2021. Vol.33, Iss.26, Article ID 2007862. https://doi.org/10.1002/adma.202007862

25. Erkaboev U.I., R.G.Rakhimov. Modeling the influence of temperature on electron landau levels in semiconductors // Scientific Bulletin of Namangan State University. 2020. Vol.2, Iss.12. pp.36-42

26. Erkaboev U.I., Gulyamov G., Mirzaev J.I., Rakhimov R.G., Sayidov N.A. Calculation of the Fermi-Dirac Function Distribution in Two-Dimensional Semiconductor Materials at High Temperatures and Weak Magnetic Fields // Nano. 2021. Vol.16, Iss.9, Article ID 2150102.

https://doi.org/10.1142/S0217984921502936

IT

27. Erkaboev U.I., Rakhimov R.G., Sayidov N.A. Mathematical modeling determination coefficient of magneto-optical absorption in semiconductors in presence of external pressure and temperature // Modern Physics Letters B.2021. Vol.35, Iss.17, Article ID 2150293. https://doi.org/10.1142/S0217984921502936

28. Erkaboev U.I., Rakhimov R.G., Mirzaev J.I., Sayidov N.A. The influence of external factors on quantum magnetic effects in electronic semiconductor structures // International Journal of Innovative Technology and Exploring Engineering. 2020. Vol.9, Iss.5, pp. 1557-1563. https://www.ijitee.org/portfolio-item/e2613039520/

29. Erkaboev U.I., Rakhimov R.G., Sayidov N.A., Mirzaev J.I. Modeling the temperature dependence of the density oscillation of energy states in twodimensional electronic gases under the impact of a longitudinal and transversal quantum magnetic fields // Indian Journal of Physics. 2022. Vol.96, Iss.10, Article ID 02435. https://doi.org/10.1007/s12648-022-02435-8

30. Erkaboev U.I., Negmatov U.M., Rakhimov R.G., Mirzaev J.I., Sayidov N.A. Influence of a quantizing magnetic field on the Fermi energy oscillations in two-dimensional semiconductors // International Journal of Applied Science and Engineering. 2022. Vol.19, Iss.2, Article ID 2021123. https://doi.org/10.6703/IJASE.202206\_19(2).004

31. Erkaboev U.I., Gulyamov G., Rakhimov R.G. A new method for determining the bandgap in semiconductors in presence of external action taking into

METHODICAL RESEARCH JOURNALISSN: 2776-0987Volume 4, Issue 3 Mar. 2023

account lattice vibrations // Indian Journal of Physics. 2022. Vol.96, Iss.8, pp. 2359-2368. https://doi.org/10.1007/s12648-021-02180-4

IT

32. Erkaboev U.I., Rakhimov R.G., Azimova N.Y. Determination of oscillations of the density of energy states in nanoscale semiconductor materials at different temperatures and quantizing magnetic fields // Global Scientific Review. 2023. Vol.12, pp. 33-49. http://scienticreview.com/index.php/gsr/article/view/156 33. Erkaboev U.I., Rakhimov R.G., Azimova N.Y. Influence of a quantizing magnetic field on the Fermi energy oscillations in twodimensional

semiconductors // Neo Scientific Peer Reviewed Journal. 2023. Vol.7, pp. 35-50.https://www.neojournals.com/index.php/nspj/article/view/131.