



STRUCTURAL DYNAMICS OF UZBEKISTAN'S DIGITAL ECONOMY

Ulugbek Kamalov,

Mustaqil izlanuvchi.

Ulugbekkamalov003@gmail.com

<https://orcid.org/0009-0001-8824-0273>

DOI: <https://doi.org/10.54613/ku.v19iB.1854>

MAQOLA HAQIDA/О СТАТЬЕ

Qabul qilindi: 2-oktabr 2026-yil

Tasdiqlandi: 5-oktabr 2026-yil

Jurnal soni: 19-B

Maqola raqami: 20

KALIT SO'ZLAR/КЛЮЧЕВЫЕ СЛОВА

raqamli iqtisodiyot, AKT sektori, yalpi qo'shilgan qiymat, elektron tijorat, "Raqamli O'zbekiston – 2030"

ANNOTATSIYA/АННОТАЦИЯ

Mazkur maqolada O'zbekiston raqamli iqtisodiyotining 2015–2024-yillardagi o'sishi va tarkibiy tuzilishi rasmiy yalpi qo'shilgan qiymat statistikasi asosida o'rganilgan. Tadqiqotda tavsifiy statistika hamda o'rtacha yillik murakkab o'sish sur'ati (CAGR) usullaridan foydalanilgan. Natijalar shuni ko'rsatadiki, axborot iqtisodiyoti va elektron tijorat sektori nominal qiymatda 15,5 barabarga o'sib, 2015-yildagi 3 876,3 milliard so'mdan 2024-yilda 60 219,5 milliard so'mga yetgan. Tadqiqot natijalari O'zbekiston iqtisodiy taraqqiyotida axborot-kommunikatsiya texnologiyalari (AKT), axborot iqtisodiyoti va elektron tijoratning ortib borayotgan ahamiyatini yoritib beradi. Shuningdek, 2015–2024-yillar davomida raqamli iqtisodiyotning asosiy rivojlanish tendensiyalari, tarmoqlar o'sishidagi o'zgarishlar, ularning yalpi ichki mahsulotdagi ulushi hamda raqamli infratuzilmaning kengayishi tahlil qilingan. Olingan natijalar milliy iqtisodiyotdagi tarkibiy o'zgarishlarni tushunish hamda raqamlashtirishni jadallashtirish, AKT sohasining raqobatbardoshligini oshirish va barqaror iqtisodiy o'sishni rag'batlantirishga qaratilgan siyosatni ishlab chiqish uchun asos bo'lib xizmat qilishi mumkin.

Tahlil an'anaviy iqtisodiy faoliyat tarmoqlarida raqamli texnologiyalardan foydalanish bilan mamlakat ichida raqamli mahsulot va xizmatlar ishlab chiqarishni rivojlantirish o'rtasidagi farqni ajratib o'rganish muhimligini ham ta'kidlaydi. Bunday yondashuv O'zbekiston raqamli iqtisodiyotining hozirgi tarkibini chuqurroq anglash va kelgusida rivojlantirish zarur bo'lgan yo'nalishlarni aniqlash imkonini beradi. Xususan, texnologik infratuzilmaning rivojlanishi, onlayn tijorat faoliyatining kengayishi hamda AKT mahsulotlarini ishlab chiqarish va savdosining iqtisodiyotdagi nisbatan cheklangan ulushi o'rtasidagi bog'liqlikka alohida e'tibor qaratilgan.

ABOUT THE PAPER

Accepted: 2 October 2026

Approved: 5 October 2026

Volume: 19-B

Paper number: 20

KEYWORDS

digital economy, ICT sector, gross value added, e-commerce, Digital Uzbekistan 2030

ANNOTATION

This article explores the growth and structure of Uzbekistan's digital economy between 2015 and 2024 using official gross value added statistics. The study uses descriptive statistics, compound annual growth rates. The results show that the information economy and e-commerce sector grew 15.5 fold in nominal terms from 3, 876.3 billion UZS in 2015 to 60,219.5 billion UZS in 2024. The findings highlight the growing role of information and communication technologies (ICT), the information economy, and e-commerce in Uzbekistan's economic development. The study identifies key trends in the digital economy over the period 2015–2024, focusing on changes in sectoral growth, contributions to GDP, and the expansion of digital infrastructure. The results provide insights into the structural transformation of the national economy and may serve as a basis for developing policies aimed at strengthening digitalization, improving ICT competitiveness, and promoting sustainable economic growth. The analysis further emphasizes the importance of distinguishing between the adoption of digital technologies across traditional economic activities and the development of domestically produced digital goods and services. This distinction provides a deeper understanding of the current configuration of Uzbekistan's digital economy and reveals areas where further progress is needed. Particular attention is given to the relationship between technological connectivity, the expansion of online commercial activities, and the limited contribution of ICT manufacturing and trade.

Introduction

The digital economy has become a central theme of the economic development of the twenty-first century, transforming the production, consumption and governance landscape worldwide. The country has introduced a strategy on digitalization of economy in 2020, "Digital Uzbekistan 2030" and made digitalization one of the priority areas of the economic modernization and diversification. As of 2024, Uzbekistan showed considerable quantitative progress with 97 percent 4G coverage, 87 percent mobile internet penetration and an improvement from 87th in 2020 to 63rd in 2024 position on the UN EGovernment Development Index. World Bank's GovTech Maturity Index puts the country in the 9th position in the world and 1st in Central Asia. These success stories hide deep-seated issues, however, that will compromise achieving targets for 2030.

Literature review

The digital economy has become an important area of scientific research due to its significant influence on economic growth, international trade, business competitiveness, and structural transformation. In recent years, researchers have increasingly focused on the role of digital technologies in improving productivity, developing electronic commerce, and strengthening national economic competitiveness. In Uzbekistan, these issues have gained particular importance in connection with the

implementation of the "Digital Uzbekistan–2030" strategy and the expansion of information and communication technologies (ICT).

Abdurakhmanov (2025) examines the impact of digital technologies on Uzbekistan's economic growth, emphasizing the achievements and future prospects of digital transformation. His study provides a basis for understanding how the introduction of modern technologies contributes to economic modernization and the development of new business opportunities [10, pp. 185–193]. Similarly, Ahmedov (2020) investigates the relationship between the digital economy and international trade. The study highlights the importance of digital technologies in facilitating international business operations, improving market access, and transforming traditional trade mechanisms [11, p. 7].

Kuziyeva et al. (2022) analyze the relationship between digital economy performance and economic growth in Uzbekistan. Their research contributes to the understanding of the role of digital development in national economic performance and provides a relevant foundation for further empirical investigation of the country's digital transformation [12, p. 1]. This line of research is particularly relevant to assessing changes in the contribution of information and communication technologies to gross domestic product (GDP).

The development of digital infrastructure is another important direction in the existing literature. The Asian Development Bank (2021),

in its report on the challenges and opportunities of digital transformation in Uzbekistan's public sector, examines the institutional and technological conditions necessary for effective digitalization. The report provides an important policy perspective on the modernization of public services and the development of digital governance [20, p. 1]. In addition, the China Academy of Information and Communications Technology (CAICT, 2024) presents an overview of Uzbekistan's digital economy and its development prospects toward 2030. This report offers a broader perspective on the structure of the digital economy, the role of digital infrastructure, and the opportunities associated with the expansion of digital industries [19, p. 1].

The development of digital technologies is also closely connected with international competitiveness and the transformation of business activities. Sharipova (2024) explores the relationship between digital transformation, international competition, and business competitiveness. The study emphasizes the importance of digital technologies in strengthening the competitive position of enterprises and supporting the development of international business [15, p. 1]. In a related study, Sharipova (2023) examines the development of internet marketing under contemporary economic conditions, highlighting the growing importance of digital marketing tools in business development and communication with consumers [16, pp. 90–91]. Furthermore, Sharipova et al. (2023) investigate the development of e-tourism in Uzbekistan by drawing on the experience of ASEAN countries. Their research demonstrates the relevance of international experience in identifying opportunities for expanding digital services and improving the competitiveness of Uzbekistan's tourism sector [17, pp. 259–266].

The relationship between digitalization and inclusive economic growth has also attracted scholarly attention. Tashpulatova and Raimova (2026) examine digitalization and inclusive economic growth through a cross-country analysis. Their research provides a comparative perspective on the relationship between digital development and broader economic outcomes [18, pp. 113–136]. This approach is relevant to Uzbekistan because the benefits of digital transformation depend not only on the expansion of digital infrastructure but also on the extent to which digital technologies support economic participation and development across different sectors.

Institutional and regulatory factors represent another important dimension of digital economic development. The legal framework of Uzbekistan includes legislation on electronic government and cybersecurity, as well as policy measures supporting innovation, entrepreneurship, and digital transformation [1–9]. In particular, the “Digital Uzbekistan–2030” strategy establishes a policy framework for accelerating digital development and modernizing economic and administrative processes [4]. The Strategy for the Development of Artificial Intelligence Technologies until 2030 further reflects the

country's efforts to expand the application of advanced digital technologies [6]. These regulatory and strategic documents provide the institutional context for analyzing the structural changes taking place in Uzbekistan's digital economy.

Despite the growing body of research on digital transformation, economic growth, international trade, and digital competitiveness, further investigation is needed into the structural composition and long-term dynamics of Uzbekistan's digital economy. In particular, distinguishing between the digitalization of traditional industries and the domestic production of digital goods and services is essential for understanding the nature of digital economic development. Existing studies provide valuable insights into individual aspects of digitalization; however, an analysis of gross value added (GVA) over an extended period can offer a more comprehensive understanding of changes in the economic contribution of ICT services, ICT manufacturing, ICT trade, information services, and e-commerce.

Therefore, the present study contributes to the existing literature by examining the structural dynamics of Uzbekistan's digital economy during 2015–2024 using official gross value added statistics. By analyzing changes in the size and GDP share of the ICT sector, the information economy, and e-commerce, the study seeks to identify the principal growth trends and structural imbalances in digital economic development. This approach provides an empirical basis for assessing the progress achieved under the “Digital Uzbekistan–2030” strategy and identifying areas that require further development, particularly digital industrialization, domestic ICT production, and the expansion of the digital services and e-commerce sectors.

Methodology

This study employs a quantitative research approach to analyze the structural dynamics of Uzbekistan's digital economy during 2015–2024. The analysis is based on official gross value added (GVA) statistics published by the Statistics Agency of the Republic of Uzbekistan and selected digital development indicators from the World Bank and the International Telecommunication Union (ITU). Descriptive statistical analysis and compound annual growth rates (CAGR) are used to assess changes in the ICT sector, information economy, and e-commerce. The study also examines their shares of GDP to identify major growth trends and structural changes in the country's digital economy.

Results

The country is at a turning point in the development of the economy in Uzbekistan. The country has introduced a strategy on digitalization of economy in 2020, “Digital Uzbekistan 2030” and made digitalization one of the priority areas of the economic modernization and diversification. The plan features over 280 digital transformation projects, which will require more than \$2.5 billion to be spent on digital infrastructure.

Table 1

Digital economy composition in Uzbekistan (2023)		
Component	Value (trillion UZS)	% of GDP
Digital Economy Total	92.69	8.7%
Industry digitalization	73.04	6.86%
Telecommunications	42.31	3.97%
Software and IT services	14.21	1.33%
E-commerce	9.88	0.93%
Digital Content	6.22	0.58%
Internet Industry	0.42	0.04
Digital Industrialization	19.65	1.84%

Industry Digitalization (the application of digital technologies to traditional industries) is much bigger, at 73.04 trillion UZS or 78.8% of the digital economy and 6.86% of GDP. This massive push towards digitalization of industry rather than towards digital industrialization is a hallmark of a middle-income country at an early phase of digital transition: it is the diffusion of current digital technologies that tends to be faster than the production of those technologies in the country. Telecommunications is the largest single component, at 3.97% of GDP and 57.8% of the digital industries. This underscores the critical importance of connectivity for the broader digital transformation and shows that the digitalization of more advanced industrial sectors still has a long way to go. Most importantly, the internet industry generates just 0.04% of GDP, which highlights the need to build up the platform economy and the e-commerce system. E-commerce is the sector that has witnessed the highest growth rate of 372% CAGR between 2017 and 2022 and in 2022 contributed to 1.2% of GDP. In 2023, the information and communication sector contributed 2.1% to the national economy and employed 87,800 individuals—a 65.4% increase since 2010. In 2024, there were 10,551 companies in the ICT sector.

Official statistics from the Statistics Agency of the Republic of Uzbekistan gives a more detailed picture via the Information Economy and E-Commerce sector. In 2024, the value of this sector equals 60,219.5 billion so‘m, which accounts for 4.08 percent of GDP, while in 2023, the sector's value amounted to 42,896.1 billion so‘m, representing 3.56 percent of GDP. The sector of Information Economy and E-Commerce experienced a growth rate of 15.5 times, increasing from 3.9 trillion so‘m in 2015 to 60.2 trillion so‘m in 2024 and accounted for over two times more GDP in 2024 than in 2015 (4.08% vs. 1.93%). This is one of the fastest growing in the region.

Growth has been rapid but concentrated. In 2024 ICT services made up about 94% of the ICT sector while ICT manufacturing and ICT trade each accounted for about 0.07% of GDP. The ICT sector's share of GDP is well above its 2015 level of 1.78%. The largest change is outside the ICT sector: the gap between the information economy and the ICT sector which covers e-commerce and other digital activities widened from 0.15 to 1.65 percentage points of GDP. In 2023 the ICT sector employed 87 800 people, 65.4% more than in 2010 and in 2014 it comprised 10 551 companies.

Table 2

Year	ICT manufacturing	ICT trade	ICT services	ICT sector	Information economy
2015	0.07	0.07	1.64	1.78	1.93
2016	0.05	0.10	1.81	1.96	2.13
2017	0.07	0.14	1.73	1.94	2.10
2018	0.07	0.07	1.57	1.70	1.91
2019	0.05	0.05	1.30	1.39	1.61
2020	0.08	0.05	1.42	1.55	1.82
2021	0.06	0.06	1.49	1.61	2.30
2022	0.08	0.07	1.70	1.85	3.06
2023	0.09	0.07	2.02	2.17	3.56
2024	0.07	0.07	2.29	2.43	4.08

The information economy share dropped from a peak of 2.13% in 2016 to 1.61% in 2019 and the ICT sector share from 1.96% to 1.39%. Over 2015-2019 nominal GDP grew at 30.1% a year, faster than the ICT sector (22.% a year).

The information economy grew by 45.4% a year against 20.7% for nominal GDP and its share rose 2.5 times from 1.61% to 4.08%. Year-

onyear growth was 55% in 2021, 61.3% in 2022 and 40.4% in 2024. The ICT sector share rose from 1.39% to 2.43%. OF the 2.47 percentage-point increase in the information economy share 1.43 points came from activities outside the ICT sector (0.22% to 1.65% of GDP) and 1.04 points from ICT sector itself. In the ICT sector, the acceleration is concentrated in 2023-2024.

Table 3

Indicator	Uzbekistan 2019	Uzbekistan 2024
4G population coverage, %	47.7	97.0
5G population coverage, %	0.0	18.0
ICT service exports, % of service exports	5.3	9.5
ICT goods exports, % of goods exports	0.12	0.35

4G coverage: The 4G population coverage in Uzbekistan has increased from 1 per cent in 2014 to 97 per cent in 2024. The fastest increases came in 2017 (from 16.9% to 43%) and after 2019 (from 47.7% to 97% in five years).

The 5G coverage: The picture is very different for the next generation of networks. Uzbekistan's 5G coverage increased from 3% in 2020 to 18% in 2023 and then stayed at 18% in 2024.

Saturation of basic connectivity in mobile subs. The number of mobile cellular subscriptions in Uzbekistan increased from 21.8 million in 2015 to 40.2 million in 2024, an average growth rate of 7.0% a year. There are two breaks in the series which are probably due to market and statistical changes and not to actual changes in demand: 20.3% less in 2012 and 43.7% more in 2019. Apart from the 2019 jump, growth in 2019-2024 has been an annual 3.8%, suggesting that basic mobile connectivity is beginning to reach saturation.

The progress of ICT service exports is satisfactory. The share of ICT services in service exports in Uzbekistan was in U-shape. It rose from below 0.2% in 2005-2007 to a peak of 10.5% in 2012, then declined to 5.3% by 2019 and recovered to 9.9% in 2025. The recovery since 2019 is due to the growth of IT Park and export incentives.

ICT goods exports: The greatest variation is in the case of ICT goods. These made up just 0.10-0.16% of goods exports in Uzbekistan in 2017-2021. The share increased to 0.53% in 2022 and 0.85% in 2023, but fell back to 0.35% in 2024.

Discussion. Uzbekistan's digital economy grew rapidly over the period, especially after 2020. However, most of it consists of industry digitalization, the use of digital technologies in traditional sectors which accounts for 78.8% of the digital economy and 6.86% of GDP. The production of digital goods and services (digital industrialization) remains small at only 1.84% of GDP. Compared with other emerging economies, the overall size of the digital economy is also modest: 8.7% of GDP in Uzbekistan.

The turnaround following 2020 is much less likely to be a price artefact. A year later, the growth rate of nominal GDP was around 21-23% while the growth rate of digital GVA was 40-60% a year. This implies real structural transformation. The timing is in line with the launch of "Digital Uzbekistan 2030," increasing 4G coverage from 47% to 97%, and the shift towards online business and services during the pandemic. These simultaneous shocks cannot be distinguished from the effect of the strategy in the data. They do indicate that the catch-up started exactly when state policy, infrastructure investment and demand-side change went in the same

direction. However, 5G coverage shows small numbers which is one of main problems to digital industry growth. Furthermore, the findings suggest that the effectiveness of digital transformation should be assessed not only through the expansion of digital infrastructure but also through its ability to generate higher domestic value added, stimulate innovation, and improve economic productivity. The relatively small shares of ICT manufacturing and trade indicate that the development of local technological capabilities remains an important challenge. Greater cooperation between universities, research institutions, technology companies, and industrial enterprises could support the commercialization of research outcomes and encourage the creation of locally developed digital solutions.

Another important consideration is the relationship between digital development and export diversification. Expanding the international presence of Uzbekistan's ICT service providers may create opportunities to generate foreign exchange earnings and strengthen the country's position in global digital markets. However, long-term competitiveness requires more than the growth of service exports. It also depends on the availability of qualified specialists, the development of innovative products, reliable digital infrastructure, and the capacity of domestic firms to meet international standards. In this context, policies supporting technological entrepreneurship and knowledge-intensive business activities could contribute to a stronger domestic digital ecosystem.

The results also highlight the importance of improving the quality and comparability of statistical information on the digital economy. Since digital activities extend across multiple industries, differences in sectoral classifications and measurement approaches may affect the assessment of their economic contribution. A more comprehensive statistical framework would help policymakers distinguish between the direct output of digital industries and the indirect benefits generated through the digitalization of other sectors. This would improve the evaluation of development programmes and provide a stronger evidence base for allocating public and private investment.

Nevertheless, the findings should be interpreted in light of certain methodological limitations. The analysis relies primarily on nominal gross value added indicators, which may reflect changes in prices as well as changes in the actual volume of economic activity. Therefore, the observed expansion does not necessarily represent an equivalent increase in real output or productivity. In addition, aggregate national statistics do not fully capture differences in digital adoption among regions, firm sizes, or economic sectors. Future research could address these limitations by

incorporating inflation-adjusted indicators, regional data, labour productivity measures, and cross-country comparisons. Such an approach would provide a more detailed assessment of the factors shaping Uzbekistan's digital economic development and help identify the policies most likely to support its long-term sustainability.

Conclusion. The official GVA figures have been used to analyze the growth of the digital economy of Uzbekistan in the period from 2015 to 2024. The digital era has emerged as a very dynamic component of the economy. There were two stages of development. The GDP share of the

sector decreased from 2016 to 2019, mainly due to price effects that boosted nominal GDP. Since 2020, it has been growing at a very fast pace, which is in line with the "Digital Uzbekistan 2030" strategy, and the almost full penetration of 4G. Growth has been rapid but limited in scope. The growth in the ICT sector was driven by ICT services, which accounted for 94.5% of the total, while domestic ICT manufacturing and trade each accounted for approximately 0.07% of GDP and e-commerce and other non-ICT digital services activities was the fastest-growing in the sector.

References

1. Law of the Republic of Uzbekistan, от 09.12.2015 г. № LRU-395 On the electronic government. <https://lex.uz/docs/6819740>
2. Law of the Republic of Uzbekistan, от 15.04.2022 г. № LRU-764 On cybersecurity. <https://lex.uz/uz/docs/6997403>
3. Decree of the President of the Republic of Uzbekistan, от 24.11.2018 г. № DP-5583 On additional measures to improve financing mechanisms for projects in the field of entrepreneurship and innovation. <https://lex.uz/docs/6966002>
4. Decree of the President of the Republic of Uzbekistan, от 05.10.2020 г. № DP-6079 On approval of the Strategy "Digital Uzbekistan-2030" and measures for its effective implementation. <https://lex.uz/docs/7008256>
5. Resolution of the President of the Republic of Uzbekistan, от 31.05.2023 г. № RP-167 On additional measures to improve the cybersecurity system of critical information infrastructure facilities of the Republic of Uzbekistan. <https://lex.uz/docs/7556383?ondate=02.06.2023>
6. Resolution of the President of the Republic of Uzbekistan, от 14.10.2024 г. № RP-358 On the approval of the Strategy for the Development of Artificial Intelligence Technologies until 2030. <https://lex.uz/docs/7159258>
7. Resolution of the President of the Republic of Uzbekistan, от 27.04.2018 г. № RP-3682 On measures for the further improvement of the system for practical implementation of innovative ideas, technologies and projects. <https://lex.uz/docs/7559137>
8. Resolution of the President of the Republic of Uzbekistan, от 05.05.2018 г. № RP-3697 On additional measures for creating conditions for the development of active entrepreneurship and innovative activity. <https://lex.uz/docs/7559318>
9. Resolution of the President of the Republic of Uzbekistan, от 14.10.2024 г. № RP-357 On measures for the further development of the startup project ecosystem and venture financing. <https://lex.uz/docs/7157438>
10. Abdurakhmanov A. The impact of digital technologies on Uzbekistan's economic growth: achievements and prospects // Yangi O'zbekiston, yangi tadqiqotlar jurnali, 2025, Vol 3, No 2, - 185-193p. <https://phoenixpublication.net/index.php/ttval/article/view/5398>
11. Ahmedov I. The impact of digital economy on international trade // European Journal of Business Management and Research, 2020, Vol 5, No 4, -7p https://www.researchgate.net/publication/343284542_The_impact_of_digital_economy_on_international_trade
12. Kuziyeva G. et al. Analysis of digital economy performance and economic growth nexus: case of Uzbekistan. In the 6th international conference on future networks & distributed systems (ICFNDS 22), December 15, 2022, Tashkent, Uzbekistan. NY, USA, 12 pages. <https://doi.org/10.1145/3584202.3584231>
13. Ergashevna, S. L. Digital Transformation and ICT Development in Uzbekistan's Digital Economy // Academia Open, 2025, 11(1), doi: 10.21070/acopen.11.2026.13142.
14. Rashidova F.S. Uzbekistan-China is on the way of strengthening bilateral relations // Theoretical & Applied Science. – 2017. – Vol. 12. – P. 80–86.
15. Sharipova U. Digital transformation and international competition: analysis of the impact of digital technologies on competitiveness and development of international business // American Journal of Business Management, Economics and Banking, 2024, (25) <https://americanjournal.org/index.php/ajbmeb/article/view/2354>
16. Sharipova U. Features of the development of internet marketing at the present stage // World Economics and Finance Bulletin, 2023, pages 90-91. <https://scholarexpress.net/index.php/wefb/article/view/2905>
17. Sharipova U. et al. The development of e-tourism in Uzbekistan: based on the foreign experience of the ASEAN countries, 2023, 5(5), pages 259-266. <https://conferencea.org/index.php/conferenceas/article/view/406>
18. Tashpulatova L., Raimova G. Digitalization and inclusive economic growth: a cross-country analysis // International Affairs Politics Economics Law, 2026, pages 113-136. <https://international-affairs.uz/en/download-archive-file/213>
19. CAICT (China Academy of Information and Communications Technology). Uzbekistan Digital Economy Overview and Vision 2030. – Beijing, 2024. – 150 p. <https://www.caict.ac.cn>
20. Asian Development Bank (ADB). Challenges and Opportunities of Digital Transformation in the Public Sector in Transition Economies: Examination of the Case of Uzbekistan. – Manila, 2021. – 90 p.
21. <https://www.adb.org/publications/challenges-opportunities-digital-transformation-uzbekistan>
22. <http://www.caict.ac.cn> – CAICT (China Academy of Information and Communications Technology).
23. <https://www.worldbank.org> – World Bank Group.
24. <https://stat.uz> – Statistics Agency Under the President of the Republic of Uzbekistan.