



DIGITAL TRANSFORMATION IN ADVANCED ECONOMIES GLOBAL COMPARISON AND UNITED KINGDOM EXPERIENCE

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ABSTRACT

This paper analyzes the specific features of economic digitalization in developed countries, with particular attention to the United Kingdom. The aim of the study is to identify the institutional elements of digital transformation that generate effects not only in the sphere of electronic services, but also in productivity growth, innovation, and technology diffusion. The study employs comparative institutional analysis, case-study logic, and benchmarking of official data for 2024–2026. Its scientific novelty lies in substantiating a platform-and-institutional approach in which digital public infrastructure, support for business technology adoption, digital inclusion, and the responsible scaling of artificial intelligence operate as an integrated system. The findings demonstrate that the British model combines advanced infrastructure, common government platforms, SME support, and an active AI agenda. For Uzbekistan, the paper proposes deeper service interoperability, a shift toward life-event-oriented service design, stronger regional digital inclusion, and incentives for enterprise digital upgrading.

Introduction

In developed countries, economic digitalization can no longer be reduced to simply moving services online. The most durable effects emerge where digital transformation rests on a common data architecture, interoperable government platforms, communications infrastructure, digital skills, and targeted support for technology adoption in the business sector [1–5]. Accordingly, the research focus has shifted from counting e-services to assessing the quality of digital government, the diffusion of technology, and the institutional conditions that underpin productivity growth [1; 4].

The United Kingdom was selected as the central case because it combines a high degree of digital-government maturity, a substantial contribution of the digital sector to the economy, advanced communications infrastructure, and an active policy of accelerating the uptake of digital technologies in business. In the British case, digitalization is treated simultaneously as an administrative, technological, and entrepreneurial reform, which makes this experience especially relevant for countries transitioning from the expansion of digital service portfolios to the construction of a full-fledged digital economy.

The works of K. I. Kurpayanidi and co-authors illuminate important aspects of the digitalization of entrepreneurship and industry, the application of blockchain tools, and institutional risks in Uzbekistan's transforming economy [14–19]. The nexus between digital public infrastructure, SME support, and digital inclusion has also been insufficiently examined.

The object of the study is the digital transformation of developed economies, while its subject is the institutional mechanisms, instruments, and outcomes of digitalization in the United Kingdom in comparison with global cases and the practice of Uzbekistan. The aim of the paper is to identify the specific features and advanced practices of digitalization in developed countries through the example of the United Kingdom and to formulate directions of adaptation for Uzbekistan.

The research hypothesis is that the greatest effects of digitalization arise not from the proliferation of isolated digital projects, but from an integrated model that combines digital public infrastructure, support for business technology adoption, a digital-inclusion policy, and the responsible scaling of artificial intelligence. The scientific contribution of the article lies in refining the platform-and-institutional model of digitalization and in constructing an analytical matrix for the transfer of best practices under the conditions of Uzbekistan.

Materials and Methods

The methodological framework of the study combines comparative institutional analysis, case-study research, benchmarking, and content analysis of official strategic documents and statistical publications. The empirical base includes materials from the OECD, the United Nations, GOV.UK, the Office for National Statistics, Ofcom, the World Bank, IT Park Uzbekistan, and public authorities of Uzbekistan for 2024–2026 [1–13]. This time horizon makes it possible to use the most up-to-date data on digital government, digital infrastructure, and technology adoption in business.

To enhance the reproducibility of the study, a unified analytical scheme was applied: assessment of the state's digital maturity; assessment of the infrastructure base; analysis of technology diffusion in business; analysis of public support instruments; and identification of elements whose transfer is feasible in Uzbekistan. A limitation of the paper is the use of aggregated official data rather than original econometric modelling; however, for institutional benchmarking such a design is justified.

Results

An analysis of developed-country practices makes it possible to draw a principal conclusion: leaders in digital transformation achieve results not by simply moving services online, but by building a coherent digital ecosystem. In OECD-leading countries, high performance is ensured by the combination of digital government, open data, advanced infrastructure, proactive services, and mechanisms that support business technological upgrading [4; 5]. The Republic of Korea demonstrates benchmark performance in digital

government and proactivity, whereas Estonia remains a classic case of interoperability and data exchange. Singapore illustrates the strength of a model in which the government's digital strategy is integrated with the urban environment, data governance, cloud services, and AI solutions.

The United Kingdom occupies a special position within this group because it combines mature digital government with a strong digital economy and institutional support for the business environment. According to UK government data, in 2024 the country's digital sector generated £177.2 billion in gross value added, or 6.8% of total GVA, while its real growth reached 3.3% compared with 1.1% for the economy as a whole [20]. According to the UN E-Government Survey 2024, the United Kingdom has an EGDI of 0.9577 and ranks 7th in the world [2]. The OECD country note records a Digital Government Index of 0.78 for the United Kingdom versus an OECD average of 0.61, with user-centricity identified as the strongest dimension [3].

From an infrastructural perspective, the British model also rests on a substantial foundation. According to Ofcom, in 2025 gigabit-capable broadband was available to 87% of UK premises, while full-fibre coverage reached 78% of residential premises and 78% of SMEs [9]. A Blueprint for Modern Digital Government became the key policy document, formulating six priorities: joining up public services, using AI for the public good, strengthening digital and data infrastructure, developing leadership and workforce capabilities, funding for outcomes, and transparency [5]. Of particular importance is the expansion of GOV.UK One Login, which has already connected more than 50 public services and has been used by over 6 million people for identity verification [5].

An important component of the British model is the targeted support for the digital transformation of SMEs. In July 2025, the SME Digital Adoption Taskforce presented a 10-step action plan to accelerate the adoption of digital technologies by small and medium-sized enterprises [7]. In January 2026, the government additionally confirmed the expansion of the BridgeAI programme in priority sectors so that thousands of firms could gain access to funding, expertise, and risk-reduction mechanisms for AI adoption [6]. Consequently, British digitalization extends beyond e-government and turns into an industrial and entrepreneurial policy in which the state not only sets the rules, but also reduces the transaction and organizational barriers to technology adoption.

At the same time, the British experience is valuable because it openly documents the limitations that persist. According to the Office for National Statistics, in 2023 only 9% of UK firms used AI, whereas 69% used cloud solutions; moreover, among firms with the strongest management practices, 88% had adopted at least one advanced technology, compared with 51% among firms with the weakest practices [8]. This demonstrates that even in a developed digital economy, the key constraint lies not so much in the technologies themselves as in management quality, organizational readiness, and the ability of firms to convert digital tools into productivity growth. This is precisely why the British model emphasizes advisory and institutional support for SMEs rather than infrastructure expansion alone.

Table 1. Analytical Matrix of Advanced Digitalization Practices and Their Adaptation Potential in Uzbekistan

Dimension	United Kingdom	Global Benchmark	Uzbekistan	Adaptation Implication
Government service architecture	One Login, Pay, Notify and a strategic shift toward end-to-end services [5].	Estonia and Korea confirm the value of interoperability and proactivity [4].	my.gov.uz and the Digital Government portal provide a foundation, but agency-level fragmentation persists [11; 12].	The priority is the connectivity of data, identification, and user journeys.
SME support	A 10-step plan for digital diffusion among SMEs [7].	Developed economies support not only the IT sector, but also the digital upgrading of traditional business [1; 4].	Support for IT exports is strong, whereas the modernization of traditional SMEs is weaker [13].	Digital-upgrading vouchers, advisory services, and sectoral programmes are needed.
AI and data	BridgeAI and common approaches to AI adoption in the public sector [6].	OECD leaders are moving toward personalized and proactive services [4].	Digital platforms exist, but a more mature data-governance regime and stronger skills are needed [10; 19].	Data standards and pilots should come first, followed by AI scaling.
Inclusion and exports	High infrastructure availability is combined with a digital-inclusion policy [9].	Global practice links inclusion with employment and productivity growth [1; 2].	IT Park includes more than 2,990 companies, over 44 thousand jobs, and exports to 90 countries [13].	IT-service exports need to be linked with the internal digitalization of sectors and regions.

Practical cases from Uzbekistan confirm that a significant foundation for the next stage of digital transformation already exists. According to the UN E-Government Survey 2024, Uzbekistan reached an EGDI value of 0.7999 and ranked 63rd in the world, entering for the first time the group of countries with a very high level of e-government development [2]. Within the national programme, a plan was approved to integrate 700 digital services into my.gov.uz and

improve 112 online-service indicators [11]. At the same time, from 1 January 2024 a specialized Digital Government portal began operating to systematize and advance digital public administration [12].

The case of IT Park Uzbekistan as an export-oriented digital ecosystem is equally revealing. According to official IT Park data, in 2025 the ecosystem united more than 2,990 companies, created over 44 thousand jobs, and exported digital products to 90 countries worldwide [13]. The World Bank approved a concessional loan of USD 50 million for the Uzbekistan Digital Inclusion Project, aimed at developing the digital economy, digital skills, and youth employment in IT services, especially in remote and rural areas [10]. These facts are particularly important for comparative analysis: Uzbekistan already possesses institutions of an export-oriented digital economy, but now requires a deeper linkage between this export model and the internal digitalization of industries, services, and regions.

From an applied perspective, the transfer of British experience to Uzbekistan should proceed in stages. At the first stage, the priority is a unified logic of identification, data exchange, and service integration. At the second stage, instruments for SME digital modernization should be launched: vouchers, advisory programmes, sectoral pilots, and risk-sharing mechanisms for the adoption of cloud and AI solutions. At the third stage, the transition should be made toward proactive services and the use of AI in the public sector and regulated industries. Such sequencing reduces the risk of showcase digitalization and makes the technological agenda more economically substantive.

Thus, the empirical results of the study can be summarized as follows. First, the United Kingdom's digital leadership is explained by the combination of a platform-based state architecture, advanced infrastructure, and instruments for technology diffusion in business. Second, global cases confirm that digitalization generates the greatest economic effect when it is integrated with policies on data, skills, innovation, and proactive services. Third, Uzbekistan has already created the institutional preconditions for the next stage—a transition from expanding the portfolio of digital services to governing the digital economy as an integrated system.

Discussion

The obtained results confirm the hypothesis advanced in the paper: the sustainable effect of digitalization is determined not by the sheer number of online services, but by the institutional interconnectedness of digital public infrastructure, mechanisms of technology adoption in business, digital-inclusion policy, and the responsible use of artificial intelligence. The British model is important for Uzbekistan not as a template for direct copying, but as an example of how digital transformation can be moved from a project mode into a mode of continuously reproducible economic capability [3–6].

For Uzbekistan, this has several practical implications. First, the managerial focus should shift from quantitative indicators of digitalization to indicators of service connectivity, the speed of life-event journeys, the share of data reused, and the reduction of transaction costs for citizens and businesses. Second, support for the digital economy should develop not only in parallel with IT-service exports, but should also directly modernize traditional sectors: industry, services, transport, trade, the financial sector, and agribusiness. Third, AI programmes should not outpace the formation of high-quality datasets, accountability regimes, human-capital competencies, and sectoral pilots.

At the sectoral level, this implies the need for differentiated adaptation trajectories. For industry, the priorities are digital twins and platforms for production and logistics management; for trade and services, end-to-end customer services, digital payments, and demand analytics; and for public administration, integrated life-event scenarios and unified interaction channels. Particular attention should be paid to hospitality, transport, and regional service companies, where digital solutions can rapidly reduce transaction costs and improve service quality. In these segments, even comparatively inexpensive cloud-based and platform tools can generate a rapid economic effect.

From a theoretical perspective, the article develops the understanding of the digital economy as a platform-and-institutional system. Unlike technocratic approaches, in which digitalization is interpreted as the introduction of separate technologies, the proposed interpretation emphasizes the role of common platform components, norms, incentives, and managerial practices. The limitation of the study lies in the use of aggregated official data, which leaves room for subsequent econometric testing.

Conclusion

The study has demonstrated that the advanced experience of digitalizing developed economies confirms the transition from the “digitalization of functions” to the “digitalization of the system.” The United Kingdom demonstrates one of the most mature models of this transition: a high international ranking in digital government, advanced communications infrastructure, a substantial contribution of the digital sector to value added, common government platforms, and a targeted policy for technology adoption in SMEs and the public sector [2; 3; 5; 7; 9; 20].

For Uzbekistan, the most promising directions of adaptation are as follows:

- 1) deepening interoperability and the common platform components of the state;
- 2) transitioning to end-to-end services oriented toward life situations and business processes;
- 3) creating specialized mechanisms to support the digital modernization of SMEs;
- 4) strengthening regional digital inclusion and skills; and
- 5) cautious but systemic scaling of AI on the basis of high-quality data and responsible regulation. Under such an approach, digitalization can become not merely an administrative instrument, but a factor of sustainable growth, rising export potential, and institutional renewal of Uzbekistan’s economy.

In practical terms, this means the expediency of a three-step roadmap: first, institutional and data-infrastructure connectivity; second, broad technology diffusion in the entrepreneurial sector; and third, proactive and intelligent services based on mature data. It is precisely this sequence that minimizes the risks of uneven development, resource overspending, and the formal achievement of digital KPIs without a real economic effect.

In practical policy terms, Uzbekistan’s state strategy could be complemented by a set of applied instruments: digital vouchers for SMEs, subsidized advisory programmes for the adoption of cloud solutions, sectoral digital-transformation programmes for industrial and service companies, as well as regulatory sandbox mechanisms for piloting AI solutions in public services and in the financial-technology sphere. A substantial role could also be played by a public procurement system oriented toward demand for domestic digital solutions, since it is

internal solvent demand that most often creates the market basis for subsequent export expansion.

Prospects for further research are associated with a transition from institutional benchmarking to the econometric assessment of the influence of specific digital measures on enterprise productivity, employment, service quality, and regional disparities. This is especially important for Uzbekistan, where the next stage of digitalization should be assessed not only through international rankings and the number of implemented services, but also through a measurable contribution to the structural modernization of the economy, growth in value added, and the reduction of interaction costs among the state, business, and the population.

References:

- [1] OECD. OECD Digital Economy Outlook 2024 (Volume 1): Embracing the Technology Frontier. Paris: OECD Publishing, 2024. DOI: 10.1787/a1689dc5-en.
- [2] United Nations. E-Government Survey 2024. New York: United Nations Department of Economic and Social Affairs, 2024.
- [3] OECD. Government at a Glance 2025: United Kingdom. Paris: OECD Publishing, 2025.
- [4] OECD. Digital Government Index and Open, Useful and Re-usable Data Index. Paris: OECD Publishing, 2026.
- [5] Department for Science, Innovation and Technology; Government Digital Service. A Blueprint for Modern Digital Government. London: GOV.UK, 2025.
- [6] HM Government. AI Opportunities Action Plan: One Year On. London: GOV.UK, 2026.
- [7] Department for Business and Trade. SME Digital Adoption Taskforce: Final Report. London: GOV.UK, 2025.
- [8] Office for National Statistics. Management Practices and the Adoption of Technology and Artificial Intelligence in UK Firms, 2023. London: ONS, 2025.
- [9] Ofcom. Connected Nations 2025: UK Report. London: Ofcom, 2025.
- [10] The World Bank. World Bank to Support Uzbekistan in Developing the Digital Economy and Creating New Jobs in the Information Technology Sector. Washington, 2023.
- [11] Government Portal of the Republic of Uzbekistan. Proposals for the Development of E-Government Considered. Tashkent, 2023.
- [12] Digital Government of the Republic of Uzbekistan. Digital Government Portal. Tashkent, 2024.
- [13] IT Park Uzbekistan. GBSF 2025 Outcomes: Uzbekistan Strengthens Its Status as an IT Hub. Tashkent, 2025.
- [14] Kurpayanidi K. I. To the Problem of Doing Business in the Conditions of the Digital Economy // ISJ Theoretical & Applied Science. 2020. No. 09(89). P. 1–7. DOI: 10.15863/TAS.2020.09.89.1.
- [15] Kurpayanidi K. I., Ilyosov A. A. Problems of the Use of Digital Technologies in Industry in the Context of Increasing the Export Potential of the Country // ISJ Theoretical & Applied Science. 2020. No. 10(90). P. 113–117. DOI: 10.15863/TAS.2020.10.90.23.
- [16] Muminova E.,&ets. Features of Introducing Blockchain Technology in Digital Economy Developing Conditions in Uzbekistan // E3S Web of Conferences. 2020. Vol. 159. Art. 04023. DOI: 10.1051/e3sconf/202015904023.

- [17] Kurpayanidi K. I. Actual Issues of Digitalization in the Industrial Sector of the Economy of Uzbekistan // Society and Innovations. 2021. Vol. 2. No. 4/S. P. 201–212.
- [18] Kurpayanidi K. I. Institutional Aspects and Risks in the Digital Economy: Ways to Reduce Uncertainty for Economic Agents // Qo‘qon Universiteti Xabarnomasi. 2023. Vol. 9. No. 9. P. 21–25. DOI: 10.54613/ku.v9i9.827.
- [19] Kurpayanidi K. I. Digital Economy Development: Overcoming Institutional Limitations and Revealing Information Asymmetry // Science and Practice Bulletin. 2023. Vol. 9. No. 10. P. 202–216.
- [20] Department for Science, Innovation and Technology. Economic Estimates: Digital Sector Annual (2010 to 2024) and Regional (2010 to 2022) Gross Value Added. London: GOV.UK, 2026.

