

THE ROLE OF INVESTMENT AND INFRASTRUCTURE AS KEY DRIVERS OF A TRANSFORMING DIGITAL ECONOMY.

Alshami Alaa Ghazi Khissaf ^{1,2}

¹Lecturer Economics: University of Kerbala, Karbala, 56001, Iraq;

²Postgraduate Student: Kazan Federal University, Kazan, Russian Federation;

ORCID: 0009-0000-2108-300X

Abstract

This study examines the development of the digital economy by presenting an analysis and a series of proposals. Advancing production and management processes generally relies on artificial intelligence, data analytics, and cloud computing. Russia is one of the nations striving for digital innovation—despite facing various challenges—and consistently seeks to achieve an advanced level of technological capability.

The study identifies the factors influencing growth, as well as infrastructural obstacles and through role of skills and expertise on rise professional growth. The availability of investment, a clear methodology, proper organization, and workforce training all contribute to accelerating the digital transformation.

Keywords : Digital economy ; cloud computing ; artificial intelligence ; technological dominance ; innovation systems.

1. Introduction

In the early 1960s, as the economy began shifting toward digital transformation, the first phase was characterized by automation, while the second phase was marked by advancements in technology and artificial intelligence. The digital services market is expanding significantly, with its value projected to reach \$5.2 trillion by 2025—growing at rates of 18% to 22%, which outpaces the growth of traditional economic

sectors. Consequently, Russia faces challenges, yet there are also opportunities, such as imports and technology localization.

2. Theoretical Framework of the Study

In the realm of economics specifically regarding theories of growth and how to boost it through the integration of innovation and technology, which in turn positively impacts economic development [1][2]. The digital economy has also clarified the concept of "creative destruction" referring to the replacement of traditional models with digital innovations [3]. The data reveals how a growth acceleration plan was formulated through the adoption of modern technologies [4], a move that played a pivotal role in strengthening global and local market competitiveness for both public and private sector institutions [5].

3. Research Methodology

In this study, we employed various methods to interpret digital indicators [6,7,8], enabling a comparison of the analysis with Russia and other countries. We identified several values illustrating the extent of government policy support for digital development within the economy—specifically regarding the growth of economic digitalization in Russia and, more broadly, in other the countries by applying standardized criteria to the indicators based on the results presented in this article.

4. Results and Analysis

4.1. Comparative Analysis of the digital economy.

Table 1. The table below shows the GDP contribution of the digital economy in the Russia and various other countries.

Country	Digital Economy Share (%)	Private Investment (%)	State Expenditure (%)	ICT Export (%)
---------	---------------------------	------------------------	-----------------------	----------------

USA	12.5	6.2	1.8	2.8
China	11.2	4.5	0.7	8.2
EU Countries	9.4	4.8	1.4	3.1
Brazil	7.1	3.9	0.9	0.3
Russia	6.8	3.8	1.2	0.9
India	6.2	3.1	0.6	4.1

Table 1 above reveals that the Russian Federation's digital economy accounts for 6.8% of its Gross Domestic Product (GDP) a figure lower than of its European counterparts [10]. Data also indicates the level of government and policy-driven spending on technology and digital innovation across institutions; investments in the information technology sector constitute 3.8% of the total domestic output. Our research shows that this investment figure exceeds government spending in the same sector. Consequently, we conclude that digital transformation is a crucial factor that must be taken into account and integrated into all state institutions.

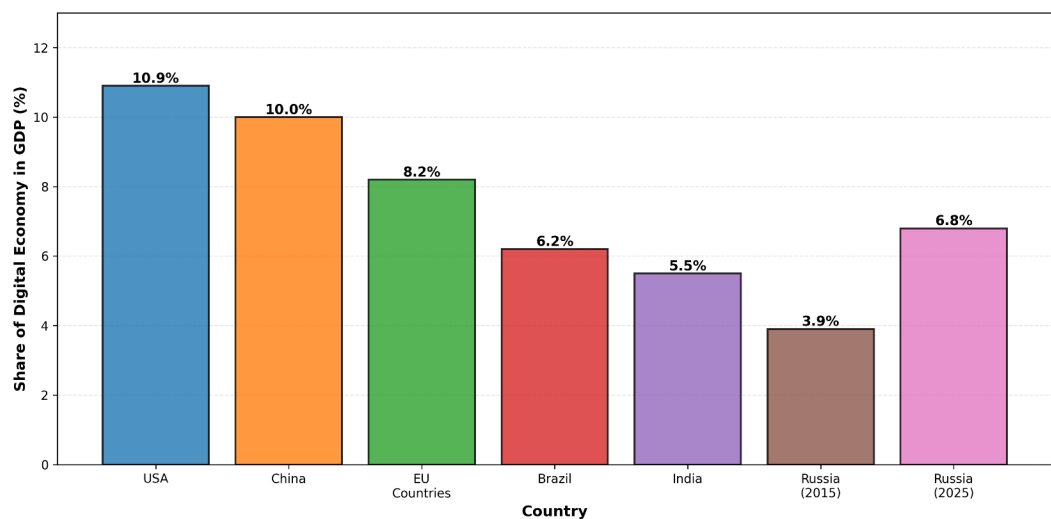


Figure 1 illustrates the Gross Domestic Product (GDP) of the Russian Federation and a number of other countries within the digital economy.

The figure above illustrates a significant and sustained rise in economic growth for the Russian Federation over several years. This clear development stems from government support across all sectors driven by incentives, innovation, and the integration of technology into state institutions [10].

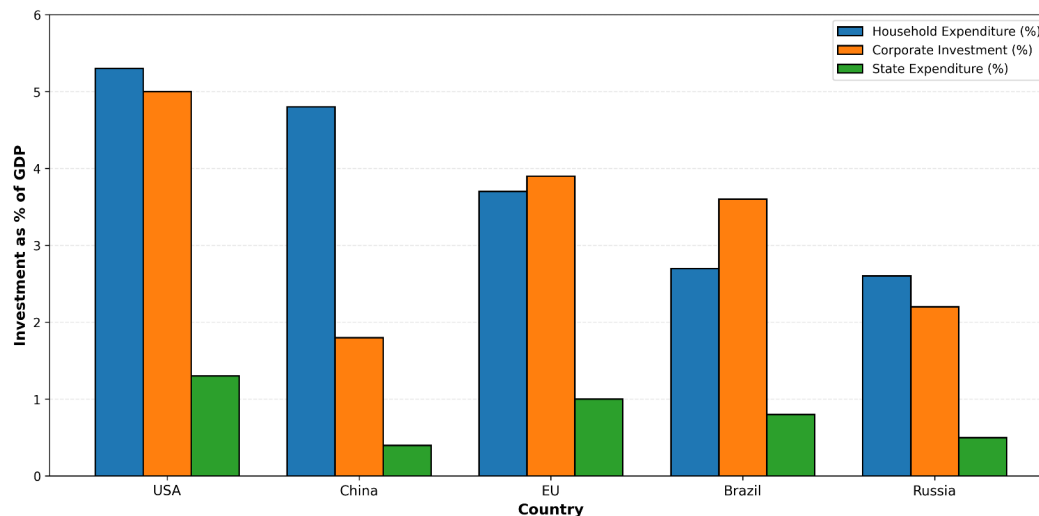


Figure 2. Comparison of investments in the digital economy by Russia and several other countries, relative to their GDP.

An analysis of Figure 2 (shown above) reveals that the share of digital economy financing varies across the countries mentioned. It shows growth in private sector economic investment relative to the public sector . notably, the United States and European nations exhibit higher rates compared to the Russian Federation, where the level of economic investment remains lower. However, this figure could rise through the implementation of policies, regulations, and laws designed to encourage and support institutions and companies within the Russian Federation to invest[10].

4.2. Analysis of Digital Economy Program Funding in the Russian Federation

Table 2. Digital Spending by Program Direction in Russia (2018-2025)

Program Direction	Government Budget (billion RUB)	Private Funding (billion RUB)	Total (billion RUB)
Information Infrastructure	100	336	436
Information Security	22.3	11.7	34
Research & Development	48	2	50
Regulatory Framework	0.9	0.3	1.2
Total	171.2	350	521.2

Table 2, presented above, outlines the economic program of the Russian Federation and its associated financial support, estimated at 521.2 billion rubles over the specified period. Infrastructure accounts for 83% of the allocation, while research and development received the lowest share under the program. These figures reveal shortcomings and regulatory or legal issues requiring urgent solutions, as they negatively impact the advancement and implementation of digital technologies in institutions—both within the Russian Federation and in other countries requiring such technologies. These obstacles can be overcome and the existing shortfall covered through encouragement and the provision of financial resources [12].

5. Conclusion and Strategic Recommendations

Our study and data analysis reveal that Russia has made significant strides in digital transformation and economic growth in recent years, with a recorded increase of 2.9%. While the United States and China currently remain in the lead, if Russia continues on this trajectory—advancing digitalization, supporting talent and enterprises, fostering investment, and integrating modern technologies into the agricultural and transport sectors—we could witness a qualitative leap that allows it to match or even surpass developed nations.

References

- [1] Romer, P.M. (1990) . Endogenous technological change . *Journal of Political Economy* , 98(5), S71-S102. DOI: 10.1086/261725
- [2] Lucas, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics*, 22(1), 3-42. DOI: 10.1016/0304-3932(88)90168-7
- [3] Schumpeter, J. A. (1942). *Capitalism , Socialism and Democracy*. New York: Harper & Brothers.
- [4] European Commission. (2025). *Digital Economy and Society Index 2025 Report*. DOI: 10.2759/2025-desi
- [5] World Economic Forum . (2025) . *Future of Jobs Report 2025 : Equipping Workers for the Digital Age*. Geneva : WEF Publications .

- [6] Christensen, C. M. (1997). The Innovator's Dilemma: Disruptive Technologies in Business. Boston: Harvard Business School Press.
- [7] World Bank. (2025). Digital Dividends: Economic Impact of Digital Technologies in Emerging Markets. DOI: 10.1596/978-1-4648-2025-8
- [8] McKinsey Global Institute. (2025). The Digital Imperative: Why the Future Economy is Digital. DOI: 10.1038/s41599-025-00890-x
- [9] Ministry of Digital Development of Russia. (2025). Digital Economy Development Program: Progress Report 2020-2025. Moscow.
- [10] OECD. (2025). Digital Economy Outlook 2025: Policies for a Sustainable Digital Future. DOI: 10.1787/2025-digital-economy
- [11] Federal State Statistics Service (Rosstat). (2025). Russia Digital Economy Index 2025. Retrieved from www.gks.ru
- [12] International Data Corporation (IDC). (2025). Worldwide ICT Spending Forecast 2025-2029. DOI: 10.1038/s41599-025-00891-y