# The Use of Digital Technologies for the Economic Development of the Region in the System Of Digitalization of Public Administration

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**Abstract**
Digital technologies in the regional sector of public administration are the basis for its reform and a potential example for the whole country on how to use the benefits of the "digital" world. The synergistic potential of social, mobile, "cloud" technologies, as well as data analysis technologies and the "Internet of Things" can collectively lead to transformational changes in public administration and in general, that is, make the use of digital technologies for the economic development of the region in the system of digitalization of public administration effective , reactive and valuable. Thus, the purpose of the study is to identify modern prospects and realities of the development of digital technologies for the economic development of the region in the system of digitalization of public administration. As a result of the study, the main mechanisms and systems of digital technologies for the economic development of the region in the system of digitalization of public administration were analyzed.

***Keywords:***
*public administration, economic development, digitalization, Internet of Things, digital technologies.*

## 1. Introduction

The modern world is hard to imagine without information and digital technologies, which penetrate deeper and deeper into all spheres of human life. The impact of Internet technologies, innovative handy programs, the accumulation and ability to use a variety of information databases significantly expand a person's ability to quickly and effectively respond to the challenges and needs of the social environment. Having greatly expanded its own resource potential, a person today is becoming more and more demanding in the spheres of public services, in particular social ones, which should fully realize the interest of his everyday existence [1].

Modern digital technologies, caused by the development and improvement of public administration mechanisms, are changing social, cultural, commercial and administrative structures. It is in the modern innovative society that the sphere of digital transformations also influenced the behavior of citizens, their desires and needs, which in general changed the way people work and communication between them, communication between people and organizations, the conditions for cooperation and competition. The Internet today allows you to receive various forms of access to information, the possibility of interaction as the creation and exchange of knowledge, which also intensified such a digital transformation [2].

In scientific and analytical works devoted to the study of digitalization processes and their development in modern society, there are a significant number of concepts for understanding the content of digitalization. In most foreign sources, when interpreting the concept of "digitalization", the emphasis is on technologies and methods of interaction between economic agents. At the same time, specific types of technologies or certain forms of changes in economic processes may be mentioned. For example, Gartner, an information technology market research consulting company, defines digitalization as the process of moving to a digital business organization based on the use of digital technologies to change the business model in order to provide new opportunities for profit and value creation.

The Organization for Economic Co-operation and Development (OECD) defines the term digitalization as the process of the interconnected use of data and digital technologies, which contributes to

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the emergence of new or changing existing activities [3].

Digitalization is an objective process of development of modern society in the context of neo-economics. It is designed to simplify and speed up work with large amounts of data, to automate all types of activities (operational, investment, financial), to improve communication with customers, suppliers and partners and all institutions of the external environment, to form new principles of interaction within the enterprise - between departments, employees, management, promote the transition to new organizational forms of management (network and virtual economy) [4].

Digitalization contributes to the expansion of the information space, creating new information products, and helps to reduce information costs. This significantly speeds up and simplifies the search for information, its interchange and enhances cooperation between companies, which affects the methods of operating activities of business entities, people's search for favorable conditions for life, as well as the quality of interaction between the population of the country and its government [5]. Changes in economic processes, the reorientation of production to create wealth towards the provision of services, the globalization of the economy are noted by scientists as the most fundamental signs of the development of a new type of society in the era of the formation of informatization and digitalization processes.

## 2. Methodology

The following general analytical and general theoretical methods were used to fully conduct the study and solve the questions posed: induction and deduction, comparison and systematization; synthesis and analysis; abstract-logical - for theoretical generalizations and conclusions of the study.

## 3. Research Results and Discussions

Ensuring the effectiveness of public administration at the regional level in the current conditions of the development of the information society cannot be achieved without the introduction of digital technologies in this area. A number of scientists draw attention to the undoubted advantages of the functioning of e-government as a form of public administration based on the use of computer and other digital technologies, this is stated in program documents, as well as international acts [6].
The widespread use of information technologies in the field of regional public administration makes it possible to increase the efficiency of: interdepartmental interaction; provision of public services to the population and organizations; personal and collective work of employees of federal government bodies. The determination of priorities in the use of information technologies in the activities of regional authorities is carried out on the basis of an assessment of the possibility of obtaining a significant socio-economic result and the amount of relevant resources. Priorities in the use of information technologies in the field of public administration are updated on a regular basis in accordance with the current tasks of socio-economic development [7].

So, information and communication technologies (ICT) are the most effective means of interaction between the state and society, the development of a global information society, the fulfillment by the state of its constitutional obligations to provide services to citizens using the Internet, today there is e-governance, the use of which ensures the productive interaction of all branches of government both among themselves and with society and greatly simplifies the procedure for obtaining services.
The processes of digitalization of money circulation, banking activities and the formation of a cashless economy are subject to managerial influence from the state. This will ensure a reduction in the cost of servicing money circulation; reducing the cost of making money; increased protection against robbery and counterfeiting; reduction of the shadow sector of the economy; increasing transparency in the formation of income and expenses of corporations, businesses, the general government sector and households; reduction of operating expenses of banks, growth of their commission income and liquidity; access to additional features and services; transaction speed; the possibility of settlements in any currency and in the country of the world; Ease of use [8].

In general, the following digital trends in technology development are distinguished [9]:
1) data becomes the main source of competitiveness;
2) the sphere of the Internet of things is developing;

3) digitalization or digital transformations are taking place;
4) business models related to the ideology of the sharing economy are spread;
5) there is a virtualization of physical infrastructure IT systems, as well as a transition to service models.
Based on the goals of the state policy of digital transformation, the available digital trends and the prospects for the development of the global economy, we highlight the key imperatives of public administration of digital development (Table 1).

Table 1: Key imperatives of public administration of digital development

| *№* | *Key imperatives* |
|---|---|
| 1 | Providing the population with equal non-discriminatory access to services, information and knowledge provided on the basis of information and communication technologies |
| 2 | End-to-end digitalization in all spheres of life, including the real sector of the economy, business development, transport, environmental protection, healthcare, education, poverty alleviation, public administration, etc. |
| 3 | Ensuring economic growth through digital drivers and the use of digital technologies |
| 4 | Promoting the development of the information society, accelerating scientific and technological progress, supporting digital innovation |
| 5 | Increasing the level of digital security and trust in ICT, ensuring cyber security, protecting the confidentiality of personal information, ensuring the protection of privacy and digital rights and freedoms |

World practice shows that the effectiveness of e-governance is provided by the National Interoperability Framework - a legal document of an organizational and technical nature that establishes and describes clear organizational and technical requirements for projects and systems of authorities in the field of e-governance [10].
Among the areas of digital transformation of public administration, the most promising, in our opinion, are the following [11]:
– development of digital competencies of public servants;
– digitalization of territorial communities;
– digital transformation of municipal government;
– development of digital interaction between government and business;
– introduction of digital technologies in the electoral system.
The benefits of digitalization in community management can only be realized by ensuring the availability of digital technologies and the maximum involvement of the majority of the population in them. That is, the lack of interest of municipal authorities in creating a digital community is due to the low level of high-speed broadband Internet access in small towns and rural settlements. A possible solution to this problem is to expand the possibilities of 3G / 4G mobile access to the global network.
Only a change in the content of the entire management system in the country can be recognized as a digital transformation of public administration in the field of interaction between government and business. First of all, this concerns improving the quality of public administration: reducing unreasonable public interference, increasing the effectiveness and efficiency of the activities of state and local governments. Of course, this requires changes in both individual management procedures and public administration functions [12].

An important aspect of the digital transformation of public administration is changing the relationship with business as a public actor that is ahead of the authorities in the assimilation and application of digital technologies. In this situation, one should focus on the possibility and necessity of using digital technologies to ensure that public administration is result-oriented when interacting with business. There is a certain risk that the digitalization of the economy and society, which is now actively declared at various political levels, will

become an end in itself and will be limited to only some changes in the processes of interaction between authorities and business as the most interested driving force of digital progress.

In foreign practice, the digital transformation of public administration is not limited to changes in the provision of administrative services. The possibilities of modern digital technologies are significant for transforming the development of state policy and rule-making, administration of revenues, management of state property, control and supervisory activities. At the same time, digital technologies are used for the purposes of planning, monitoring and evaluating the performance of government bodies. All these are the most important issues for successful business in the legal field of the state [13].

The effect of digitalization can be assessed by the impact of digital technologies on these results. In other words, digitalization can become the basis for further development by public authorities of the principle of management by results, since it allows to overcome its previously identified limitations. In Tab.2. the most successful mechanisms for the use of digital technologies for the economic development of the region in the system of digitalization of public administration are depicted [14].

Table 2: The most successful mechanisms for the use of digital technologies for the economic development of the region in the system of digitalization of public administration

| *№* | *The most successful mechanisms* |
|---|---|
| 1 | The use of "big data" allows you to receive information about the results achieved in a mode close to real time; |
| 2 | Artificial intelligence is not limited in perception by a few indicators and helps to process thousands of parameters and choose the best solutions; |
| 3 | The Internet of Things allows you to collect data and correct actions automatically, without the need to contact an official; |
| 4 | Distributed registry technologies eliminate the possibility of distorting data on the results achieved. |

In our opinion, in the new digital transformation strategy, it is necessary to provide for a set of tasks and measures for the digitalization of public administration with a focus on the result of their activities, in particular:

– transition from the responsibility of departments for the preparation and submission of reports on the results achieved to their responsibility for posting data on the results achieved, which are generated mainly automatically on a single platform, and making decisions based on this data;

- expanding the use of "big data" for the purposes of developing economic policy, compiling official statistics, administering revenues, auditing the effectiveness of budget expenditures and implementing other government functions, taking into account the proposals of business associations;
- expansion of methods for assessing the effectiveness of state bodies: the transition from the binary assessment "completed - not fulfilled" to the use of predictive analytics, selective controlled checks, and other analytical methods based on artificial intelligence technologies;

using digitalization as a tool for optimizing budget spending: introducing the practice of calculating transaction costs and assessing their reduction due to digitalization.
The implementation of these proposals will help remove technological, personnel, organizational and legal restrictions on the digitalization of interaction with business and the transition of public administration bodies to results-oriented activities.
Therefore, we consider digitalization as a public management innovation, which is introduced into public practice by the mechanisms of the information society and acts as a security link for the entire complex of public management relations. For Ukraine, this is an extremely new, but at the same time, an urgent problem, designed, in our opinion, to reset the nature of public relations between the state and society and bring the issue of satisfying the interests of citizens, including social ones, to a new qualitative level, and give a chance to prove themselves to non-governmental institutions.

The digitalization policy is aimed at facilitating public interaction between citizens and the state. Therefore, in our opinion, this is rather a public technology, since it is aimed at a person. In fact, this is the area of the information society, therefore, the synergistic effect of public interaction between the state and society should be aimed at ensuring the interests and services of citizens through the timeliness and efficiency of the use of appropriate technologies [15]. At the same time, we consider this a tool for public management innovation, since it is aimed at providing a quality support for the process of solving urgent problems of citizens, related in this case to the sphere of social services.

What role can a public organization play in this process? In our opinion, it can successfully adopt the procedural nature of the latest technologies and present itself as a service provider of social services, try on the role of an intermediary / executor of orders for both citizens and public authorities. We believe that an important task of a public organization is not only the need to master the basics of innovation (technological function), but also a clear understanding of the needs of citizens (social function), skillful and efficient use of its resources to ensure public, business reputation and relevance in public management processes.

## 4. Conclusions

So, the issue of regulating the sphere of digital transformations for the economic development of the region in the system of digitalization of public administration and the process of developing the digital economy, the uncertainty of the nature of the interaction of participants in this process, which, in turn, hinders the formation of legislation in a different direction, in particular, regarding strategic planning documents, - issues of development of digital technologies. for the economic development of the region in the system of digitalization of public administration should be presented in state programs, especially those related to public services, small and medium-sized businesses, the consumer market, healthcare, the creation of information and analytical systems for their provision, etc. The role of public administration in ensuring digital development should be significantly strengthened through the implementation of an active state policy and the real effective work of all state institutions. Following global digital trends in the processes of digital development of society at the regional level will make it possible to make a technological breakthrough and ensure equal positioning of the country in world economic processes. The key imperatives of public management of digital development are end-to-end digitalization in all spheres of life, promoting the development of the information society and accelerating economic growth through digital technologies, stimulating international digital cooperation, providing all segments of the population with information and communication technologies, building digital skills, ensuring digital security and protection. digital rights and freedoms of people.

## References

[1] Huateng M., Zhaoli M., Deli Y., Hualei W. Digital Economy as a New Driver for Growth. In: Kaitian G., Xiao S. (eds) The Chinese Digital Economy. Palgrave Macmillan, Singapore. 2021. https://doi.org/10.1007/978-981-33-6005-1_2

[2] Kryshtanovych, M., Dzanyy, R., Topalova, E., Tokhtarova, I., & Pirozhenko, N. Challengers to Conceptual Understanding of Sustainable Development Regarding Decentralization of Power and Responsibility in the Conditions of the

Postmodern Society. Postmodern Openings, 2020, 11(3), 257-268. https://doi.org/10.18662/po/11.3/212

[3] Davidescu, A., Simona A., Andra M., and Bogdan F. Romania's South-Muntenia Region, towards Sustainable Regional Development. Implications for Regional Development Strategies. Sustainability, 2020, 12(14) 5799. https://doi.org/10.3390/su12145799

[4] Palvia, P., Baqir, N., & Nemati, H. ICT for socio-economic development: A citizens' perspective. Information & Management, 2018, 55(2), 160–176. https://doi.org/10.1016/j.im.2017.05.003

[5] Zachosova, N. Innovative approach in the estimatology of financial institutions economic security: possibilities of use in management and regulatory activity within the means of provision of the state financial security. Baltic Journal of Economic Studies, 2019, 5, 45. https://doi.org/10.30525/2256-0742/2019-5-2-45-56

[6]Kryshtanovych, M., Ortynskyi, V., Krasivskyy O., Maziy, N., & Pasichnyk, V. Methodical approach to countering threats of economic security in the context of ensuring the protection of national interests. Financial and Credit Activity: Problems of Theory and Practice, 2021, 4(39), 202–208. https://doi.org/10.18371/.v4i39.241309

[7] Hanna, N. A role for the state in the digital age. J Innov Entrep **7,** 5 2018. https://doi.org/10.1186/s13731-018-0086-3

[8]Goncharenko L.P., & Sybachin S.A. Digitalization of national economy. Vestnik Universiteta, 2019 8, 32-38. https://doi.org/10.26425/1816-4277-2019-8-32-38

[9] Kryshtanovych M., Akimova L., Gavkalova N., Akimov, O., Shulga, A. 2022. Modern Technologies for Ensuring Economic Security in the Context of Achieving High Efficiency of Public Administration. IJCSNS International Journal of Computer Science and Network Security. 2022, 22 No. 2 pp. 362-368. https://doi.org/10.22937/IJCSNS.2022.22.2.42

[10] Tsindeliani, I.A., Proshunin, M.M., Sadovskaya, T.D., Popkova, Z.G., Davydova, M.A. and Babayan, O.A., "Digital transformation of the banking system in the context of sustainable development", Journal of Money Laundering Control, 2022. 25 No. 1, pp. 165-180. https://doi.org/10.1108/JMLC-02-2021-0011

[11] Rahma H, Fauzi A, Juanda B, Widjojanto B. Development of a Composite Measure of Regional Sustainable Development in Indonesia. Sustainability. 2020. 11(20):5861. https://doi.org/10.3390/su11205861

[12] Kryshtanovych, S., Prosovych, O., Panas, Y., Trushkina N., Omelchenko, V. Features of the Socio-Economic Development of the Countries of the World under the influence of the Digital Economy and COVID-19. IJCSNS International Journal of Computer Science and Network Security. 2022, 22, 2, 9-14. https://doi.org/10.22937/IJCSNS.2022.22.2.13

[13]Vasconcelos, V. Social justice and sustainable regional development: reflections on discourse and practice in public policies and public budget, Insights into Regional Development. 2021, 3(1): 10-28. https://doi.org/10.9770/IRD.2021.3.1(1)

[14]Pradhan, Rudra P., Girijasankar Mallik, and Tapan P. Bagchi. Information communication technology (ICT) infrastructure and economic growth: A causality evinced by cross-country panel dana. IIMB Management Review. 2018. 30: 91–103. https://doi.org/10.1016/j.iimb.2018.01.001

[15] Cai, X., Wang, W., Rao, A., Rahim, S., Zhao, X. Regional Sustainable Development and Spatial Effects From the Perspective of Renewable Energy. Front. Environ. Sci.2022. 10:859523. https://doi.org/10.3389/fenvs.2022.859523