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THE DEVELOPMENT OF DIGITALIZATION AS A FACTOR OF PUBLIC MANAGEMENT SYSTEM TRANSFORMATION

Summary. *The research is aimed at studying the impact of digitalization on changing the structure of the public administration system, explaining the principles of forming a digital mechanism of public administration, and determining the directions of interaction between public authorities and the population in electronic format. The research methodology was based on the use of the generalization method, comparative analysis, and aggregation of types of public administration digital transformation. The results of the survey were: highlighting the principles of forming a digital mechanism of public administration, identifying signs of interaction between public authorities and the*

population in electronic format, as well as determining the conditions for the further digital transformation of public authorities. Determining the principles of forming a digital mechanism for public administration and disclosing their content is an element of the scientific novelty of the research given that it allows developing strategic directions for creating a system of electronic interaction between the authorities and citizens on the basis of the described principles. The practical significance of the obtained research results is to bring certain theoretical regulations to the level of their practical application. In particular, the identification of signs of interaction between state authorities, local self-government bodies, the population, and NGOs in electronic format allows monitoring the formation of e-governance in Ukraine and other countries. It is noted that in the near future a number of transformations in the construction of digital public administration should be implemented, in particular: consolidation of public and business storage with the expansion of information exchange between them; expanding the possibilities of using broadband Internet tools to provide public services in electronic format; duplication of documents on paper media to ensure information security, despite the increase in the volume of electronic communications. These trends allow us to affirm the prospects for further research in the direction of developing a model of electronic interaction between public authorities and the population.

Key words: *public administration, digitalization, transformation, electronic interaction, principle, electronic public service.*

Statement of the problem. Digitalization or reorganization of anything with the help of digital communication and automation [1] creates conditions for the qualitative transformation of the public management system, especially given the possibility of providing public services in electronic format. Digitalization allows optimizing the use of public administration resources as well as using informational channels to create «electronic government». However, the

construction of appropriate infrastructure and the availability of modern computer and technical information processing tools are necessary for ensuring the proper public administration transformation. It will enable to digitalize the processes of providing public services and give public authorities and local self-government bodies access to electronic resources with the help of mobile devices. Therefore, the issue of defining the principles of public administration digitalization, the reasoning of public administration functions in new conditions, and the identification of forms of public electronic interaction have become crucial.

Analysis of recent research and publications. Given that digitalization affects almost all aspects of public administration (creation of material and technical base, software development, staff training, management technologies, etc.), this process generates interest in scientists who are exploring the transformation of public management caused by different determinants. Thus, Lakhyzha M.I. considers the problems and prospects of public administration development in Ukraine under the influence of digitalization, determining several meanings of this concept [2]. Studying the digital transformation of the public sphere, Yu. Pihareiev and N. Kosteniuk pay attention to the fact that this process affects the digitalization of all public life in Ukraine, especially when it comes to providing public services to the population, [3]. To explain the peculiarities of modern mechanisms of public administration, scientists are using such terms as «e-governance» [4; 5; 6]; «digital governance» [7] with increasing frequency, the content of which indicates rapid changes in management in social systems. The peculiarities of management changes are monitored by individual authors, referring to the possibilities of using digital methods in the management of certain industries, in particular the economy [8]. Nevertheless, the development of the fundamentals of the transformation of public administration under the influence of digitalization is still an urgent scientific task.

Formulation purposes of article (problem). The purpose of the article is to substantiate the principles of forming a digital mechanism of public

administration and determine the directions of interaction between public authorities and the population in electronic format.

The main material. The procedure for technological transformations in the functioning of public administration and local self-government systems with the distribution of powers between public administration bodies and their further implementation based on the use of electronic technologies should be formed on a set of principles that reflect the expectations of the population and the desire of the authorities to improve public relations. The study of foreign experience in the transformation of public administration allows us to conclude that the main focus in the process of transformation was on rationalization and optimization of budget expenditures aimed at investing and providing administrative services and social assistance. In addition, the digitalization of public administration created opportunities for citizens to access public information and a system for providing administrative services from any place at any time and from any device [9; 10]. Governments of other countries of the world form models of electronic interaction with citizens and expand the list of services provided in digital format. The formats of electronic interaction between governments and citizens are the basis for ensuring a qualitative change in the implementation of two main social functions by the authorities:

- implementation of social welfare of citizens and providing them with social assistance in electronic form;
- ensuring employment of the population with the possibility of using electronic systems for job search and remote employment.

There are three main directions of further digitalization of public administration:

- structural change of public authorities with the expansion of digital communications between them and the creation of electronic document management systems;

- integration with digital technology developers (up to their involvement in the civil service) to develop and improve software for performing public administration functions in a digital format;
- development of standards of electronic services and electronic interaction, which allow maintaining the level of quality of service of the population in electronic format.

The systematization of research results of domestic and foreign scientists and their scientific researches allows us to distinguish the principles of the formation of a digital mechanism of public administration in Ukraine, which are universal (table 1).

Table 1

Offered principles for forming a digital mechanism of public management in Ukraine

Principles	The essence of principles
1. Algorithmization of the digital transformation process	The development of a set of measures and procedures aimed at modernizing management based on the use of digital technologies
2. Updating electronic formats	Bringing electronic management technologies in line with the possibilities of modernization of mobile communication tools, computer technologies, and software
3. Ensuring the security of the electronic system of public services	Identification of risks and threats to the functioning of the electronic system for the provision of public services and the development of measures to prevent and eliminate them
4. Digitalization of document flow	The development of samples of electronic documents, which consolidate the actions of public administration and local self-government bodies, improvement of electronic documents accounting systems, accumulation, use, storage, etc.
5. Expanding possibilities for getting feedback	Simplifying access to public information and forming convenient channels for receiving feedback from the public regarding the conditions and quality of public services.

Source: developed by authors based on processing data [2; 3; 7; 9].

The high level of public services quality based on the use of digital technologies is relevant, first of all, for such areas as education, health care, and

law enforcement, where it is necessary to ensure close interaction between state authorities, local governments, the population, business, and NGOs. To establish such interaction, it is recommended to use «large databases» (open data), which allow you to search for the best options for cooperation, and the development of appropriate interaction in electronic format can be monitored by a range of features (table 2).

To simplify electronic interaction, it is necessary to create single internet access points for citizens and public administration bodies of various levels, which will help prevent duplication of electronic communications with excessive use of information resources. The system of electronic interaction overcomes the shortcomings of traditional forms of communication between citizens with public authorities, and public institutions.

Table 2

Indications of interaction between public authorities, local governments, the population and public organizations in electronic format

Indications	The essence of indications	The development of indication in Ukraine
1. The availability of the strategy of digital government functioning	Scientifically well-grounded long-term plan for the transformation of the executive branch with the definition of measures, their cost, deadlines, list of digital services, the creation of an appropriate institution (if necessary).	In Ukraine, in particular, the Concept of e-government development was adopted [11] and a special ministry was created - the Ministry of Digital Transformation of Ukraine.
2. The usage of participatory electronic technologies	Electronic platforms for public-private partnerships, public procurement, competitions, involvement of citizens in decision-making on the use of budgets, online services, the use of online learning technologies, e-medicine, etc.	In Ukraine, there are several indications: the provision of electronic services on the principle of «unified window»; introduction of open data technology; development of e-democracy based on the use of electronic appeals and electronic petitions; use of the participation budget tool; use of electronic identification of citizens (ID-passports); use of the ProZorro platform for e-procurement and many other features, such as

		external independent examination or accreditation of educational programs.
3. Ensuring privacy and security of data use	Prevention of unauthorized access to confidential information and personal data	The range of laws was adopted: «On Protection of Information in Automated Systems», «On State Secret», «On Protection of Personal Data», «On Access to Public Information». Many technical and industry standards for information security have been adopted. Complex information protection systems have been created, e. x., a protection system for ProZorro is situated in cloud Data Processing Center «De Novo», which is created for state institutions and enterprises.

Source: developed by authors according to data [3; 4; 7; 11] and provision of the regulatory legal acts

In the nearest future, a range of transformations in the construction of digital public administration should be implemented, in particular:

- consolidation of public and business repositories with the expansion of information exchange between them;
- expanding the use of broadband Internet for public services providers in electronic format;
- duplication of documents on paper to ensure information security, despite the growing volume of electronic communications.

Implementation of projects for the electronic transformation of public administration structure will determine the nature of administrative and other public services providers that can be ensured:

- with the modernization of unified electronic services for providing services to the population;
- with the creation of electronic registers of citizens for personalization public electronic services;
- application of a set of measures to maintain cybersecurity.

Overall, the transformation of the public administration system according to digitalization has to contribute to the establishment of constructive interaction between public authorities and local governments with various social groups, by involving representatives of business and the public in the development of regulations projects, in particular, thus ensuring the protection of their economic interests. Within such interaction, the prospects of development on certain territories, local problems, natural and ecological characteristics are more quickly considered.

Insights from this study and perspectives for further research in this direction. Hence, the transformation of the public administration system according to digitalization is based on certain principles and ensures the formation of electronic interaction between public authorities, the population, public organizations, and businesses. The modern mechanism of digitalization of public administration in the system of public-private partnership is expressed in the functioning of stable information channels with access to private companies and individuals to electronic portals of public administration at all levels.

Transformations in the structure of public administration determine the transition from traditional forms of communication between public authorities and local self-government bodies with the population to a united system of e-government. Such a system is used primarily to provide electronic public services to the population, optimize budget expenditures and deregulate business activities.

Literature

1. Словник сучасної української мови та сленгу «Мислово». URL: <http://myslovo.com/?dictionary> (дата звернення 12.10.2021).
2. Лахижа М. І. Диджиталізація в Україні: поняття, проблеми, перспективи та завдання публічного управління. *Державне управління: науковий вісник*. 2020. №2 (4). С. 202-213.

3. Пігарєв Ю., Костенюк Н. Діджиталізація публічного управління як чинник цифрової трансформації України. *Актуальні проблеми державного управління*. 2021. № 2 (83). С. 92-96.
4. Гапєєв Л. Електронне урядування: проблеми, пріоритети, завдання. URL: <https://i.factor.ua/ukr/journals/ds/2018/march/issue-3/article-34920.html> (дата звернення 19.10.2021).
5. Чукут С. А., Дмитренко В. І. Сумісність як необхідна умова впровадження електронного урядування: досвід Європейського Союзу. *Публічне урядування* : збірник. 2017. № 5 (10). С. 303-313.
6. Дніпров О. С. Електронне урядування на місцевому рівні. *Науковий вісник Херсонського державного університету*. Серія: Юридичні науки. 2018. Вип. 1. Том 1. С. 149-153.
7. Куйбіда В. С., Карпенко О. В., Наместнік В. В., Цифрове врядування в Україні: базові дефініції понятійно-категоріального апарату. *Вісник НАДУ. Серія «Державне управління»*. 2018. № 1. С. 5-11. URL: <http://academy.gov.ua/infpol/pages/dop/2/files/974f8478-cfe8-4d31-971b-d5116efff458.pdf> (дата звернення 19.10.2021).
8. Lozinska T., Dorofyeyev O., Ponochovniy Y., Vlasenko T. Linear regression model for substantiation of sustainable state policy in a digital economy. *Proceedings 2020 IEEE 11th International Conference on Dependable Systems, Services and Technologies. DESSERT*. Ukraine, Kyiv, May 14-18, 2020. P. 399-403.
9. Anderson J. E. Public policymaking: An introduction. Boston: Houghton Mifflin Company. 2003, P. 26.
10. Данилин И. В. Развитие цифровой экономики США и КНР: факторы и тенденции. *Контуры глобальных трансформаций*. 2019. Том 12. № 6. С. 246-261. URL: <https://www.ogt-journal.com/jour/article/view/553/470> (дата звернення 20.10.2021).

11. Про схвалення Концепції розвитку електронного урядування в Україні: Розпорядження Кабінету Міністрів України від 20.09.2017 № 649-р.
URL: <https://zakon.rada.gov.ua/laws/card/649-2017-%D1%80> (дата звернення 20.10.2021).

References

1. My word. 2021. *Dictionary of modern Ukrainian language and slang «Myslovo»*. [ONLINE] Available at: <http://myslovo.com/?dictionary>. [Accessed 12 October 2021].
2. Lakhyzha, M.I., (2020) “Digitalization in Ukraine: concept, problems, prospects and tasks of public administration”. *Public administration: scientific bulletin*. №2 (4). pp. 202-213. Available at: <https://nvdu.undicz.org.ua/index.php/nvdu/issue/view/4/4> [Accessed 10 October 2021].
3. Pigarev, Yu. and Kosteniuk, N. (2021) “Digitalization of public administration as a factor of digital transformation of Ukraine”. *Actual problems of public administration*. № 2 (83). pp. 92-96. Available at: <http://uran.oridu.odessa.ua/article/view/237257> [Accessed 10 October 2021].
4. Hapiev, L. (2018) “E-governance: problems, priorities, objectives”. *Civil servant*. №3. Available at: <https://i.factor.ua/ukr/journals/ds/2018/march/issue-3/article-34920.html> [Accessed 19 October 2021].
5. Chukut, S. and Dmytrenko, V. (2017) “Interoperability as a necessary condition for the implementation of e-governance: experience of the European Union”. *Public governance : collection*. № 5(10). pp. 303-313. Available at: http://vadnd.org.ua/app/uploads/2018/01/Публічне-урядування-5-10_укр.pdf [Accessed 14 October 2021].
6. Dnirov, O. (2018) “Electronic governance at a local level”. *Scientific Bulletin of Kherson State University*. Series: Legal Sciences. Issue. 1. Book

1. pp. 149-153. Available at: <https://lj.journal.kspu.edu/index.php/lj/article/view/57> [Accessed 16 October 2021].
7. Kuybida, V. *et al.* (2018) “Digital governance in Ukraine: basic definitions of the conceptual categorical apparatus”. *NAPA Bulletin*. Series: Public Administration. № 1. pp. 5-11. Available at: <http://academy.gov.ua/infpol/pages/dop/2/files/974f8478-cfe8-4d31-971b-d5116efff458.pdf> [Accessed 19 October 2021].
8. Lozinska, T. *et al.* (2020) “Linear regression model for substantiation of sustainable state policy in a digital economy”. *Proceedings 2020 IEEE 11th International Conference on Dependable Systems, Services and Technologies. DESSERT*. Ukraine, Kyiv, May 14-18. pp. 399-403. Available at: <http://dspace.pdaa.edu.ua:8080/handle/123456789/10281> [Accessed 18 October 2021].
9. Anderson, J. (2003) *Public policymaking: An introduction*. Boston: Houghton Mifflin Company.
10. Danilin, I. (2019) Development of the Digital Economy in the USA and China: Factors and Trends. *Global Infrastructure in the Digital Age*. Book 12. №6. pp. 246-261. Available at: <https://www.ogt-journal.com/jour/article/view/553/470> [Accessed 20 October 2021].
11. On approval of the Concept for the development of e-governance in Ukraine: *Ordinance of the Cabinet of Ministers of Ukraine of 20.09.2017 № 649-p*. Available at: <https://zakon.rada.gov.ua/laws/card/649-2017-%D1%80> [Accessed 20 October 2021].