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Implementation of digital technologies in Public Administration

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ABSTRACT

The direction of scientific research is determined by the global spread of the informatization process, which increases the urgency of introducing digital technologies in the field of public administration. The purpose of the study is to highlight the basics of implementing digital technologies in public administration in modern conditions of social development, taking into account the most successful and progressive practices. The methodological basis of the research is a systematic approach, which made it possible to single out the factors affecting the processes of digitalization of public administration in the spheres of state administration, regional and local self-government, public organizations, and entities providing public services. The positive externalities of the implementation of digital technologies in public administration for various levels of government and the population have been clarified. It has been proven that ensuring general accessibility to the use of public services, maximum consideration of consumer needs when providing them, active involvement of broad sections of the population in making public decisions and monitoring the progress of their implementation will contribute to increasing the efficiency of public services.

KEYWORDS: digital technologies, public administration, authorities, information, efficiency improvement.

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Implementación de tecnologías digitales en la Administración Pública

RESUMEN

La conducción de la investigación científica está determinada por la expansión global del proceso de informatización, lo que aumenta la urgencia de introducir tecnologías digitales en el campo de la administración pública. El propósito del estudio es resaltar los fundamentos de la implementación de tecnologías digitales en la administración pública en las condiciones modernas de desarrollo social. La base metodológica de la investigación es un enfoque sistemático, que permitió singularizar los factores que inciden en los procesos de digitalización de la gestión pública en los ámbitos de la administración estatal, los gobiernos autónomos regionales y locales, los organismos públicos y las entidades prestadoras de servicios públicos. Se han esclarecido las externalidades positivas de la implementación de tecnologías digitales en la administración pública para los distintos niveles de gobierno y la población. Se ha demostrado que garantizar la accesibilidad general al uso de los servicios públicos, la máxima consideración de las necesidades de los consumidores a la hora de prestarlos, la participación activa de amplios sectores de la población en la toma de decisiones públicas y el seguimiento del progreso de su implementación, contribuirán a aumentar la eficiencia de los servicios públicos.

PALABRAS CLAVE: tecnologías digitales, administración pública, autoridades, información, mejora de la eficiencia.

Introduction

Social development in modern globalization conditions is characterized by an active process of formation and use of the electronic information space, which involves all spheres of social activity. It is difficult to imagine social development today without innovative technologies, the use of the latest information technologies, radio electronics, communications, telecommunications, etc.

Digital technologies lead to transitions from the development of the service sphere to the servitization of the results of traditional spheres of production activity, and the very functions of digital technologies are changing from the accumulation of retrospective data to online technologies. That is, it is not the digitization of individual spheres of social activity, but the total digitization of society.

The spread of the informatization process increases the urgency of introducing digital

technologies in the field of public administration, which is becoming a priority for the development of all countries of the world. In accordance with the requirements of the EU countries, one of the directions of large-scale cooperation is the provision of broadband access for economic entities, the prediction of the reliability of the security of information and communication technology networks and the general development of local Internet resources, the use of online services. Currently, e-business, e-government, e-learning, e-health care, etc. are actively developing in the world.

In their development priorities, all countries of the world single out the task of forming an information society, which is why the reform of telecommunication systems, development of information infrastructure, etc. is taking place.

The purpose of the study is to highlight the basics of implementing digital technologies in public administration in modern conditions of social development, taking into account the most successful and progressive practices. To achieve the outlined goal, the authors achieved the following tasks:

- proven expediency of further scientific research in the direction of implementation of digital technologies in public administration;
- the factors affecting the processes of digitalization of public administration are singled out;
- the positive externalities of the introduction of digital technologies in public administration for various levels of government and other spheres of public administration and the population have been clarified;
- directions for intensifying the implementation of digital technologies in public administration are substantiated;
- the scientific novelty of the obtained results is highlighted, which has an applied value regarding the implementation of digital technologies in public administration.

1. Literature Review

Issues of the functioning of public administration in the conditions of the development of the digital economy, the introduction of electronic governance are becoming more and more relevant. Among the scientists who studied this issue, it should be noted: Ahn Michael J. (2022); Ana Cristina Aguilar Viana (2021); Androniceanu A. (2022); Atta Addo

(2021); Boban Marija (2021); Braun M. (2021); Cosmulese C. (2019); Derhaliuk M. (2021); Glavaš J. (2021); Kholiavko N. (2021); Klochan V. (2021); Limba Tadas (2007); Melnychenko A. (2022); Řepa Václav (2021); Scupola A. (2022); Shefali V. (2014); Siegel Urszula Anna (2021); Tulchynska S. (2022); Zhuk I. (2022) and other.

The results of research by scientists (Shefali V., 2014) prove that the development of the Internet as a global means of communication has opened up enormous opportunities and presented new challenges to the government, thanks to digital technologies that create new forms of community, empower citizens and reform existing power structures.

The goal of the scientists' article (Zhuk I. et al., 2022) is to find effective digitalization tools to improve public administration in the financial sector. As a result of the research, the authors determined which countries are the most advanced in the use of digitalization tools in the public administration system, outlined the most effective tools from the point of view of the feasibility of their implementation, and developed recommendations for improving the digitalization of the administration system in the field of finance.

Within the framework of the article (Androniceanu A. et al., 2022), the authors define interdependencies and differences between the multidimensional phenomena of administrative corruption and digitalization in the EU member states. The study proves that digitalization of public administration and services is a strategic goal of EU member states and should become a priority in the new technological era.

The authors (Braun M., 2021) are convinced that in order to successfully meet the demands of politicians and citizens, public administration undergoes a constant process of modernization. Scientists prove that digital transformation requires improvement of those human capabilities that machines are unable to provide.

The article (Atta Addo, 2021) investigates that despite numerous anti-corruption measures, including digitalization, petty corruption in public administrations of developing countries persists, undermining socio-economic development. Scholars have explored how information technology allows corruption to be controlled over time, reducing opportunities for corruption through socio-technical reconfiguration of work practices and organizational arrangements.

The authors of the article (Limba Tadas, 2007) analyzed the main principles of creating e-government, as well as resistance to the development of e-government from the

point of view of the public sector. The authors consider the current initiatives of legal regulation of e-government in the Republic of Lithuania.

The paper (Ahn Michael J. et al., 2022) argues that civil servants play a critical role in the adoption and use of new technologies in government, and their attitudes and willingness to use them matter for creating sustainable and meaningful digital transformation. Based on the results of the research, scientists indicate the importance of training civil servants in artificial intelligence technologies to improve their understanding and acceptance of new technologies, as well as their potential in government, which will contribute to the development of an innovative culture for a sustainable and effective digital transformation.

The authors (Scupola A. et al., 2022) investigated that public administration bodies are investing in the digital transformation of their citizen-oriented services and internal administrative processes. They use co-production approaches and involve different types of stakeholders in these transformational processes to improve service quality and create societal value.

The scientific work (Aguilar Viana, 2021) emphasizes that the digital revolution affects public administration and gradually transforms the activities carried out by the state. The authors propose to follow the path of ICT implementation in the state organizational sphere, considering from the initial concept of electronic government to the latest works that advocate digital government. The scientists presented a comparative analysis of the evolutionary process of the digital transformation of public administration.

Despite the existing publications, the specifics of the implementation of digital technologies in public administration require further study, analysis of existing problems and opportunities during implementation.

2. Methodology

The methodological basis of the study is a systematic approach, which made it possible to single out the factors affecting the processes of digitalization of public administration in the sphere of state administration, regional and local self-government, public organizations, and entities providing public services. The application of a systemic approach to digital technologies makes it possible to establish the regularities of their implementation in relation to public administration, to holistically identify the connections

that arise between the subjects of the public administration system and other subjects of social development due to the introduction of digital technologies.

3. Results

Modern globalization progress of social development determines the urgency of the search for the governments of all countries of the world to improve public administration in the direction of improving the quality of providing public services, eliminating bureaucratic procedures, reducing the costs of public administration, etc. This leads to the fact that public administration is under the influence of many heterogeneous factors that lead to a change in the vector of public administration in the direction of spreading the use of information technologies. The factors that directly affect the processes of digitalization of public administration include the following (Fig. 1):

firstly, the direct implementation of innovations and modern information technologies in all spheres of social life;

secondly, the development of social partnership and civil society in the digital environment;

thirdly, renewal of market models of competitiveness, free movement of labor, stimulation of freedom and development of entrepreneurship;

fourthly, the degree of decentralization of power, which is a general trend in most European countries, which leads to an increase in the interest and responsibility of regional and local self-government bodies (Fernández, 2020);

fifthly, the development of innovative culture in society, which affects the population's perception of the introduction of new information and communication technologies and innovations;

sixthly, the socio-economic development of the country, which makes it possible to widely introduce the latest means of using information and communication technologies and spread these processes among the population;

seventhly, compliance with the principles of social equality and justice in social development through the implementation of socially oriented projects in accordance with the principles of the digital economy.

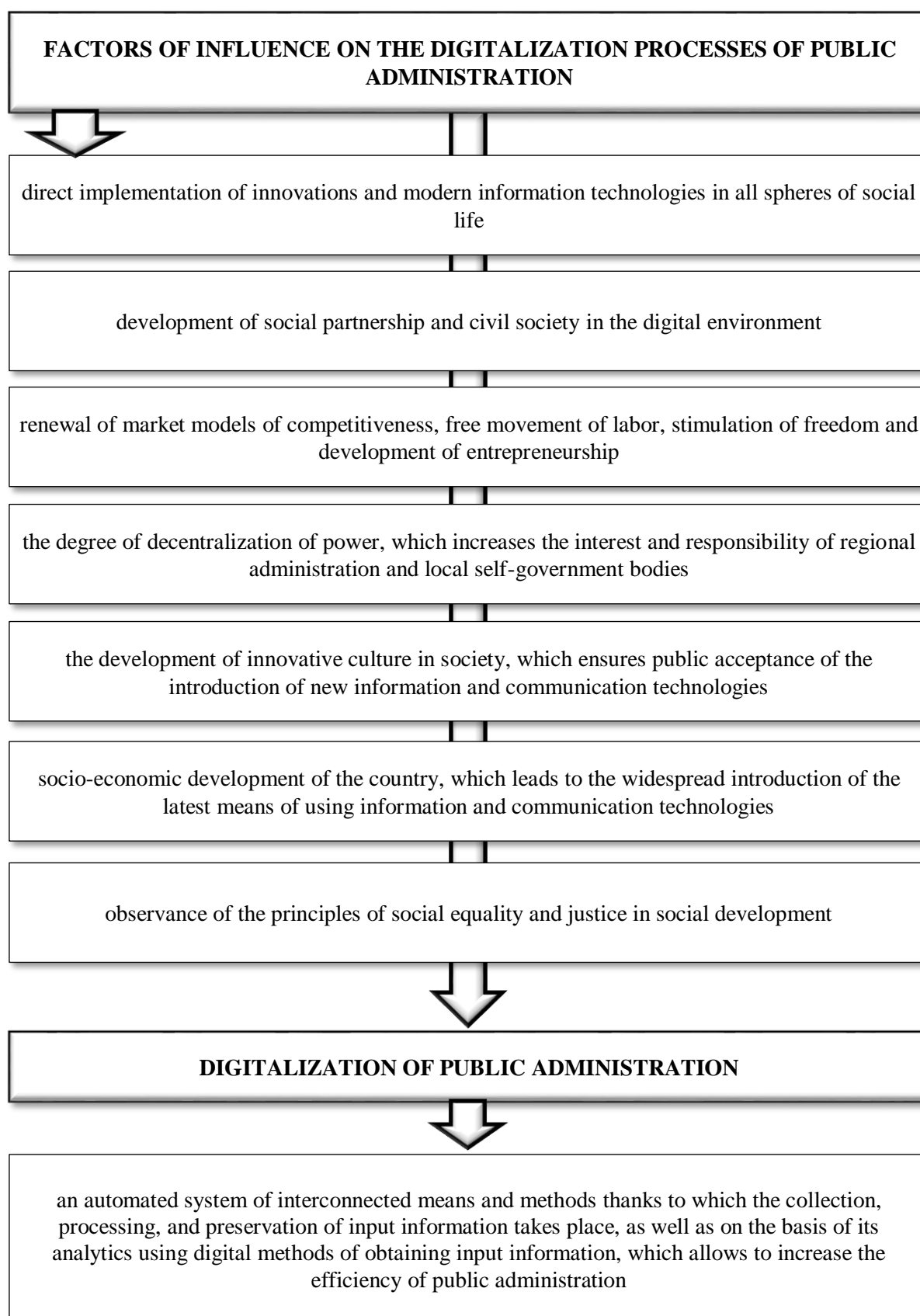


Figure 1. Factors influencing the digitization of public administration
Source: constructed by the authors

Isolated and niche factors directly affect the processes of digitization of public administration. Public administration includes the spheres of state administration, regional and local self-government, public organizations, entities providing public services. Modern challenges of the development of social relations and digitalization determine the introduction of digital technologies in public administration, since without their use it is impossible to build an effective model of modern management processes.

The use of digital technologies in public administration is an automated system of interconnected means and techniques, thanks to which input information is collected, processed, saved, as well as based on its analytics using digital methods of obtaining initial information, which allows to increase the efficiency of public administration. The creation of a single digital space through the implementation of digital technologies will contribute to obtaining reliable information for authorities, the population, businesses, and public organizations.

The implementation of digital technologies in public administration makes it possible to obtain the following positive results for authorities and other spheres of public administration (Fig. 2).

Positive results for authorities and other areas of public administration from the implementation of digital technologies in public administration:

- to increase the efficiency of public management by speeding up their adoption and publication, as well as simplifying the management procedures themselves;
- significantly reduce administrative costs;
- apply modern management methods, which makes it possible to make more optimal management decisions;
- increase the speed of providing administrative services while simultaneously improving their quality;
- to increase control over the activities of regional authorities and local self-government bodies while ensuring the principles of decentralization;
- increase the transparency of management decision-making and reduce corruption in public administration;
- ensure democratic public administration;

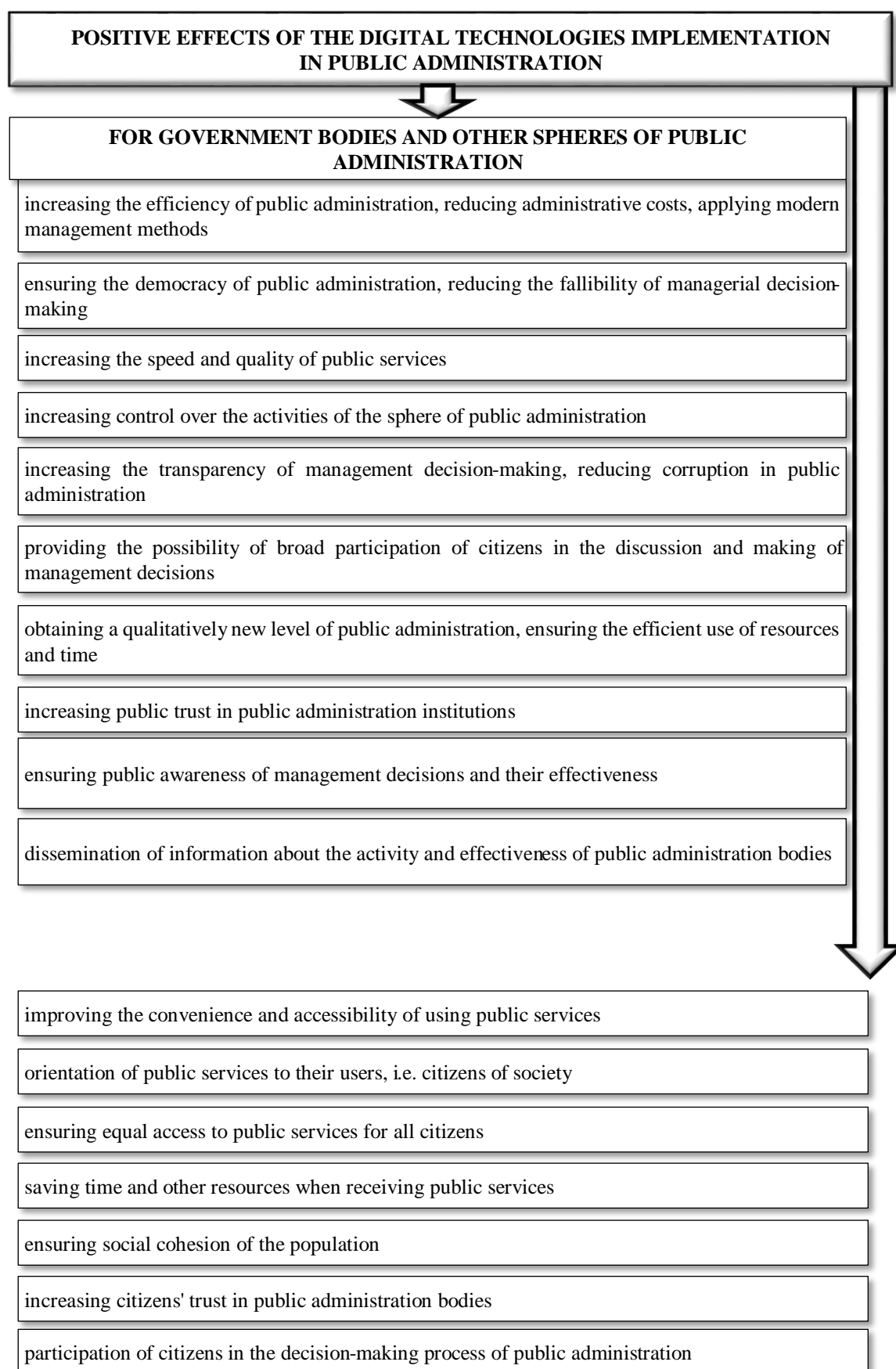


Figure 2. Positive effects of the digital technologies implementation in public administration
Source: constructed by the authors

- provision of the possibility of broad participation of citizens in the discussion and adoption of management decisions at all levels of power structures;
- to obtain a qualitatively new level of public administration and increase the public's trust in state, regional and local self-government bodies and institutions of public administration as a whole;
- to ensure that the population is informed about the adoption of management decisions and their effectiveness;
- disseminate information about the activity and effectiveness of public administration bodies;
- to reduce the error rate of management decision-making due to the unreliability of the input information on the basis of which analytical conclusions and foresight of multi-vector processes were built;
- ensure efficient use of resources and time.

At the same time, the implementation of digital technologies in public administration gives positive results directly for all segments of the population, namely:

- improving the convenience and accessibility of using public services;
- orientation of public services to their users, i.e. citizens of society;
- ensuring equal access to public services for all citizens;
- saving time and other resources when receiving public services;
- ensuring social cohesion of the population;
- increasing citizens' trust in public administration bodies;
- participation of citizens in the decision-making process of public administration.

That is, it can be noted that the implementation of digital technologies in public administration has positive benefits both for the administration itself and for the citizens of society. Such conclusions determine the activation of the process of digitization of public administration.

In order to intensify the implementation of digital technologies in public administration, it is necessary to ensure (Fig. 3):

Firstly, the organization of "digital" workplaces means staffing of public administration bodies with appropriate digital competencies, as well as full provision of "digital" workplaces for employees of public administration bodies with appropriate means

of communication. "Digital" workplaces prove the effectiveness of their existence, which is manifested in the reduction of the costs of maintaining the management apparatus, the reduction of the use of office premises, the costs of employee travel, etc. Employees working at "digital" workplaces prove the efficiency and timeliness of their work. The routine work of a civil servant becomes more dynamic, interesting and attractive and forms a new creative and corporate culture.

Secondly, awareness of the population and its involvement in the activities of public administration bodies, which involves the use of the participatory management model. Multi-channel awareness makes it possible to identify the urgency of public socio-economic needs of citizens and, thanks to the use of various communications, to activate their involvement in solving these urgent problems and making management decisions. Receiving feedback from citizens makes it possible to evaluate the perception of the adopted decisions by the community, to find out the necessary reform vectors, etc.

Thirdly, publicity and openness of data, which provides an opportunity to evaluate the work of public authorities. Open data can be accessed through software interfaces thanks to the Internet. The concept of openness of public administration data presupposes compliance with attribution rules.

Fourthly, the introduction of electronic identification of citizens, which provides citizens with secure access to basic resources and services during identification. The introduction of the "single window" model makes it possible to receive services, submit reports, etc.

Fifthly, monitoring and evaluation, which involves a continuous, dynamic process of data collection and analysis, structuring of information and its analytics. Such monitoring of information and data makes it possible to build balanced strategic plans and optimize already outlined plans for social development. The implementation of data monitoring and analytics using modern information technologies will contribute to the use of new opportunities of analytical databases, to use these data in making management decisions.

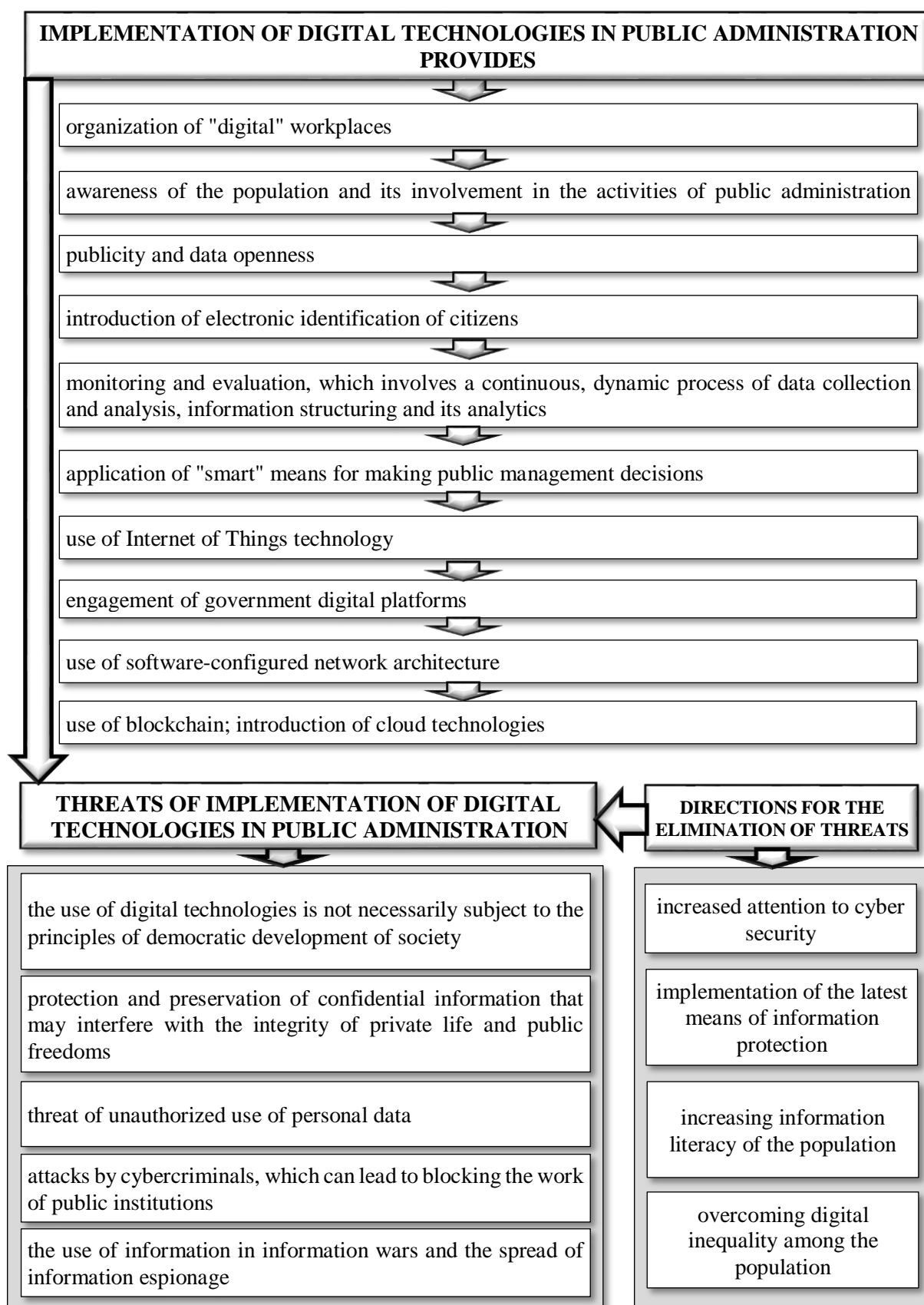


Figure 3. Implementation of digital technologies in public administration
 Source: generated by the authors

Sixthly, the use of "smart" means for public administration decision-making. Of course, "intelligent" machines and tools are currently unable to replace a person, but the combination of various digital technologies makes it possible to improve and optimize existing methods of management and decision-making, as well as to offer new services and means of providing them. So, for example, one of these modern new services is the notification of the population through smartphones about emergency situations and dangers. On the example of Ukraine, on the territory of which military operations are currently taking place as a result of aggression by the Russian Federation, such a public administration service proves its timeliness and usefulness.

Seventhly, the "Internet of Things", which represents the interconnection of physical devices with software that provides transmission, exchange of data between the physical state of things and computer systems. In public administration, such models of Internet of Things application as payment for use or subscription taxation, "smart" garbage collection, and much more are possible. The use of the Internet of Things can be very diverse, depending on the specifics of the activity of the public administration institution.

Eighthly, the use of digital platforms of the government, which contributes to the improvement of the quality of services, the reduction of employees and the optimization of administrative costs. Today, there are already effective digital platforms of the ERP and CRM class, which allow you to radically change the quality of services and increase their efficiency hundreds and thousands of times. Digital government platforms can be created and used in any sphere of public activity, as well as in other spheres of social development. Digital platforms can perform a variety of functions, including: user admission to the platform according to certain criteria, quality control of public services, collection and analysis of information, etc.

Ninthly, the use of software-configured network architecture, which makes it possible to quickly adapt to constant changes and needs of services and traffic due to the adaptation of the data transmission level (Data Plane), management level (Control Plane) and application level (Application Plane) software-configured network architecture. Virtualization of networks provides efficient use of information and communication systems and allows state institutions to work out projects of "Internet of things", etc.

Tenthly, the use of blockchain, which provides storage of information on all actions of

system participants, such as transactions, transactions, etc. Blockchain is undoubtedly important in areas such as justice, notary, exchange activity and others. Blockchain stores data on a permanent basis without the possibility of its changes, which increases the security of this distributed peer-to-peer public network technology. Due to the high degree of information protection, blockchain can be used for conducting referendums at various levels, signing e-petitions, e-governance, e-budgeting and many other public management processes that require maximum protection of information and confidentiality.

Eleventhly, the widespread adoption of cloud technologies, which makes it possible for public administration bodies due to the joint use and maintenance of such digital infrastructure to reduce financial costs due to the duplication of certain functions, to provide consolidated databases between different departments, to create new platforms for qualitative satisfaction of consumer needs, expanding the possibilities of implementing new projects, as well as reducing the cost of implementing digital technologies.

Therefore, the indicated directions regarding the multi-vector use and introduction of a variety of digital technologies will contribute to the activation of the implementation of digital technologies in public administration and, as a result, to increasing the efficiency of its activities. Namely at the expense.

It should be noted that the use of digital technologies in public administration, like any process, carries certain dangers, which should include:

- the use of digital technologies is not necessarily subject to the principles of democratic development of society;
- protection and preservation of confidential information that may interfere with the integrity of private life and public freedoms;
- threat of unauthorized use of personal data;
- attacks by cybercriminals, which can lead to the blocking of the work of public institutions; the use of information in information wars and the spread of information espionage.

Such threats to the introduction of digital technologies in public administration require increased attention to cyber security, the introduction of the latest means of information protection, increased information literacy of the population, and overcoming digital inequality among the population.

4. Discussion

We support the opinion of the authors (Boban M. et al., 2021) that in the context of the COVID-19 pandemic, digital transformation is not only desirable, but also absolutely necessary for an efficient and functional public sector. The researchers explored the best practices of digital transformation as a step towards improving existing processes and systems, the rapid implementation of innovative solutions to overcome this and future crises, the use of technology to generate positive solutions and strategies for the successful digitalization of government, the economy and the digital society as a whole.

In modern conditions, public administration uses relevant results, increasing efficiency and effectiveness both in the public sector and in the private sector. We consider the research of the authors (Glavaš J. et al., 2021) to be practically justified, proving the importance of digital transformation in the public sector. We support scientists in the necessary additional efforts to stimulate the process of digital transformation, acquire new skills, exchange knowledge, manage business processes and other segments.

It is useful to consider the research of the authors (Siegel Urszula Anna et al., 2021), which examines the main streams of value creation that contribute to the digital transformation of public administration, as well as the success factors critical to the promotion of digital transformation. The authors believe that the obtained results significantly contribute to the development of today's understudied issues and form the basis for the practical operational implementation of digital transformation plans with the aim of successful implementation in the public administration system.

The study of scientists (Řepa Václav, 2021) is worth paying attention to, within the framework of which the main business factors of public administration were analyzed and ways of applying the idea of digital transformation in public administration were proposed based on the idea of process-controlled management as a representative of the essence of digital transformation.

We believe that the research of scientists (Klochán V. et al., 2021) is worth practical implementation. The authors have developed a model for the use of consulting services in the state administration system. Scientists analyzed the criteria for the effectiveness of project management consulting in the public sector based on digital platforms.

The reviewed articles prove the relevance of the scientists' research, which determines

the further analysis of the features of the implementation of digital technologies in public administration.

Conclusion

The scientific novelty of the research lies in the fact that, based on the proof of the positive consequences of the introduction of digital technologies in public administration for various levels of government and the population, directions for the activation of the introduction of digital technologies in public administration are substantiated, which include: the organization of "digital" workplaces; awareness of the population and its involvement in the activities of public administration bodies; publicity and openness of data; introduction of electronic identification of citizens; monitoring and evaluation, which involves a continuous, dynamic process of data collection and analysis, information structuring and its analytics; application of "smart" means for making public management decisions; use of Internet of Things technology; engagement of government digital platforms; use of software-configured network architecture; use of blockchain; introduction of cloud technologies.

Issues related to monitoring the implementation of digital technologies in public administration and evaluating the effectiveness of their use require further research.

References

- Aguilar Viana, Ana Cristina (2021). Digital transformation in Public Administration: from E-Government to Digital Government. *International Journal of Digital Law*, 2(1), 29-46.
- Ahn, Michael J., Chen, Yu-Che. (2022). Digital transformation toward AI-augmented public administration: The perception of government employees and the willingness to use AI in government. *Government Information Quarterly*, 39(2), 101664.
- Androniceanu, A., Georgescu, I., Kinnunen, J. (2022). Public administration digitalization and corruption in the EU member states. A comparative and correlative research analysis. *Transylvanian Review of Administrative Sciences*, 65, 5-22.
- Atta, Addo. (2021). Controlling petty corruption in public administrations of developing countries through digitalization: An opportunity theory informed study of Ghana customs. *Information Society*, 37(2), 99-114.
- Boban, Marija, Klarić, Mirko. (2021). Impact of Covid 19 Pandemic on Digital Transformation of Public Administration in European Union. 44th International Convention on Information, Communication and Electronic Technology (MIPRO) (pp. 1312-1317).

Braun, M. (2021). Impulse einer präventiven Arbeitsgestaltung zur Digitalisierung der öffentlichen Verwaltung. *Zentralblatt für Arbeitsmedizin, Arbeitsschutz und Ergonomie*, 71(2), 75-80.

Cosmulese, C. G., Grosu, V., Hlaciuc, E., & Zhavoronok, A. (2019). The Influences of the Digital Revolution on the Educational System of the EU Countries. *Marketing and Management of Innovations*, 3, 242-254. <http://doi.org/10.21272/mmi.2019.3-18>.

Derhaliuk, M., Popelo, O., Tulchynska, S., Mashnenkov, K., Berezovskyi, D. (2021). State policy of the potential-forming space transformation in the context of the regional development intensification. *CUESTIONES POLÍTICAS*, 39(70), 80-93. DOI: 10.46398/cuestpol.3970.04.

Fernández Llera, R. (2020). Local good governance and accountability in Spain. *Retos Revista de Ciencias de la Administración y Economía*, 10(19), 29-43. <https://doi.org/10.17163/ret.n19.2020.02>

Glavaš, J., Uroda, I., Mandić, B. (2021). Managing Digital Transformation in Public Administration. 44th International Convention on Information, Communication and Electronic Technology (MIPRO) (pp. 1466-1469).

Kholiavko, N., Popelo, O., & Tulchynska, S. (2021). Priority Directions of Increasing the Adaptivity of Universities to the Conditions of the Digital Economy. *Revista Tempos E Espaços Em Educação*, 14(33), e16383. <https://doi.org/10.20952/revtee.v14i33.16383>.

Kholiavko, N., Popelo, O., Melnychenko, A., Derhaliuk, M., & Grynevych, L. (2022). The Role of Higher Education in the Digital Economy Development. *Revista Tempos E Espaços Em Educação*, 15(34), e16773. <https://doi.org/10.20952/revtee.v15i34.16773>.

Klochán, V., Piliaiev, I., Sydorenko, T., Khomutenko, V., Solomko, A., Tkachuk A. (2021). Digital Platforms as a tool for the transformation of strategic Consulting in Public Administration. *Journal of Information Technology Management*, 13, 42-61.

Limba, Tadas. (2007). Implementation of electronic governance: The case of society interaction with public administration in Lithuania. *Transformations in Business and Economics*, 6(2), 235-249.

Popelo, O., Tulchynska, S., Revko, A., Butko, M., Derhaliuk, M. (2022). Methodological Approaches to the Evaluation of Innovation in Polish and Ukrainian Regions, Taking into Account Digitalization. *Comparative Economic Research. Central and Eastern Europe*, 25(1), 55-74.

Řepa, Václav. (2021). Digital Transformation of Public Administration. *Intelligent Systems Reference Library*, 188, 99-117.

Scupola, A., Mergel, I. (2022). Co-production in digital transformation of public administration and public value creation: The case of Denmark. *Government Information Quarterly*, 39(1), 101650.

Shefali, V. (2014). Innovations in Information and Communication Technology Platforms for Public Administration: Consulting the British Public in the Digital Age. *Human Factors in Software Development and Design*, 23-43.

Siegel, Urszula Anna, Gabryelczyk, Renata. (2021). Exploring value streams and CSFs to foster digital transformation in public administration. *AMCIS 2021 Proceedings*, 10.

Zhuk, I., Khaletska, A., Stepura, T., Shchepanskiy, E., Sadova, U., Pyla, V. (2022). Public Administration System in the Field of Finance Under the Influence of Digitalization. *Economic Affairs*, 67(3), 22-231.