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## Use of Information Technology to Increase Economic Efficiency and Credibility in Public Administration in the Context of Digitization

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Tetyana V. Novachenko<sup>1</sup>, Tetiana V. Bielska<sup>2</sup>, Eduard A. Afonin<sup>3</sup>,  
Mariia H. Lashkina<sup>4</sup>, Oksana M. Kozhemiakina<sup>5</sup>, Nataliia P. Diachenko<sup>6</sup>

### **Abstract:**

**Purpose:** The article analyzes the use of information technologies to increase the level of economic efficiency and trust in public administration in Ukraine.

**Design/Methodology/Approach:** We use the concept of digital management for the purpose of integrated interaction of municipal and state structures with business, civil society institutions and the population.

**Findings:** The conducted research concludes the active digital transformation of public administration in Ukraine. The following trends in the use of information technology are identified: the development of institutional support; the creation of analytical portals for ensuring public control; the level of accountability, transparency, accountability of the activity of civil servants; the implementation of e-government projects; the changing philosophy of development of electronic services.

**Practical Implications:** The concept of state policy in the field of digital infrastructure was developed on the basis of a multi-stakeholder approach according to which the main purpose of the state bodies is to identify, prioritize, harmonize and satisfy the stakeholders.

**Originality/Value:** In this article, we show the level of individual regions in Ukraine where there is uneven implementation and use of e-learning tools management.

**Keywords:** Information technologies, economic efficiency, digitalization, e-management.

**JEL Codes:** F52, O39, R11.

**Paper type:** Research article.

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<sup>1</sup>Doctor of sciences in Public administration, Associate Professor, Professor in National Academy of Public Administration, Office of the President of Ukraine, Public Policy and Political Analytics, Kyiv, Ukraine, E-mail: [tatmov9@yahoo.com](mailto:tatmov9@yahoo.com)

<sup>2</sup>Doctor of sciences in Public administration, Associate Professor, O.M. Beketov National University of Urban Economy in Kharkiv, Management and Public Administration, Ukraine, [tanya\\_belska@ukr.net](mailto:tanya_belska@ukr.net)

<sup>3</sup>Doctor of sciences in sociology, Professor, Professor in National Academy for Public Administration under the President of Ukraine, Public Policy and Political Analytics, Kyiv, [bpafonin@gmail.com](mailto:bpafonin@gmail.com)

<sup>4</sup>Ph.D. in Public Administration, Associate Professor, Faculty of International Relations National Aviation University, Department of Advertising and Public Relations, Kyiv, [maria.lashkina@gmail.com](mailto:maria.lashkina@gmail.com)

<sup>5</sup>Ph.D., Candidate of philosophical sciences, Associate Professor, Cherkassy State Technological University, Philosophy and Political Science, Cherkassy, Ukraine, E-mail: [oksniko@ukr.net](mailto:oksniko@ukr.net)

<sup>6</sup>Ph.D in Public Administration, Associate Professor, Kyiv Institute of Intellectual Property and Law of the National University "Odessa Law Academy", Management and IT, Kyiv, [n.diachenko@ukr.net](mailto:n.diachenko@ukr.net)

## **1. Introduction**

Globalization, the growth of international competition, technological and information changes cause the transformation of forms and concepts of public administration. Public administration is becoming flexible, decentralized, market-based, and democratic. It is based on the concept of governance, public governance and new public governance, global governance and good governance, Digital Era Governance and others.

On September 20, 2017, the Decree of the Cabinet of Ministers of Ukraine No. 649-p approved the Concept of development of e-governance in Ukraine. The document defines the directions, mechanisms and terms of formation of an effective e-government system in Ukraine to meet the interests and needs of individuals and legal entities, improve the system of public administration, increase competitiveness and stimulate socio-economic development of the country. The implementation of the Concept will ensure the increase of efficiency of work of public authorities and local self-government bodies, achievement of a qualitatively new level of governance of the state based on the principles of efficiency, effectiveness, openness, accessibility, transparency, trust and accountability improving the quality of public services provided to individuals and legal entities in accordance with European requirements.

Also ensuring the necessary mobility and competitiveness of citizens and economic entities in today's economic environment, minimizing corruption risks in the exercise of power, improving the country's investment attractiveness, business climate and competitiveness by the promotion of socio-economic development in Ukraine. The implementation of the Concept is foreseen for the period up to 2020. In view of the above, the study of the development of digital governance in Ukraine is becoming more relevant.

## **2. Literature Review**

The study of the use of information technologies to improve the level of economic efficiency and trust in public administration is devoted to the work of Emelianenko (2019), Ishchenko (2019), Petroye (2019), Korovyak (2018), Orlov (2018) and Kuzhda (2019). It is worth highlighting the research of Ishchenko (2019), where the specifics of using various methodological techniques before aggregation and normalization of indicators of the state of development of electronic management, which can be used during the formation of the integral index, are analyzed. The paper also provides data for calculating the e-government development index for the regions of Ukraine, taking into account the national specifics and availability of source data for the formation of aggregated indicators.

### **3. Methodology and Data**

The article uses general theoretical and special research methods, in particular, the dialectical method of scientific knowledge made it possible to trace the current trends in the development of the concept of digital management in Ukraine, compliance with the principles of digital management, the epistemological method is the basis for the formulation of the term “e-government”, that is the subject of the study, the comparative method allowed us to determine the level of public confidence in the government in Ukraine, the analytical method was used in the formulation of generalized and detailed conclusions based on the results of the study.

Based on a survey conducted by the Razumkov Center's sociological service in October 2019, November 2019, December 2019 and February 2020, the level of public confidence of the authorities in Ukraine was drawn. A total of 2018 respondents, aged 18 and over, were interviewed in all regions of Ukraine, with the exception of Crimea and the occupied territories of Donetsk and Luhansk oblasts, by sample, which represents the adult population of the country by major socio-demographic indicators. The sample of the survey was constructed as a multi-stage random sample of respondents at the last stage. The theoretical sampling error (excluding the design effect) does not exceed 2,3% with a probability of 0,95%.

### **4. Results and Discussion**

Today, more and more democratic countries are moving to a government model based on the use of modern information and communication technologies. According to the United Nations Department of Economic and Social Affairs, e-government and technology innovation can provide significant opportunities for public administration to become a sustainable development tool. Electronic government refers to the use of computer technology to provide information and public services to the public. In a broader sense, e-government can be seen as a model for the use and application of information technology in public administration.

E-government allows to integrate workflows to effectively manage data and information, increase public service delivery, and expand communication channels for citizen participation life of the country. Opportunities provided by digital technologies include internet services, big data processing, social media, mobile applications or cloud computing – all are expanding the view of e-government. Political communication in this case involves the electronic interactions of three actors; the government-to-government (G2G), government to business (G2B), government to consumer (G2C). Through innovation and e-government, public administration can be more efficient, provide better services and meet transparency and accountability requirements, which can lead to social integration and capacity building for sustainable development between countries.

One of the innovative tools of good governance in Ukraine can also be considered Prozzorro, E-data, Open City platform, which ensure the development of institutional support for public administration in Ukraine. Therefore, the Prozzorro system was established to create an open mechanism for public procurement. E-data is also created, the official state information portal on internet, which publishes information on the use of public funds and implements the idea of *"Transparent Budget"*. It should be noted that the *"Transparent Budget"* platform has several disadvantages, there is no information about the approved amount under the budget article and the balance on the article, that is, with the help of this informative resource it is not possible to track the turnover of revenues and expenditures simultaneously on the approved budget items.

Also, an effective software product operating in Ukraine is the Open Budget Portal, created by the Center for Policy Studies and Analytics with the participation of the Delegation of the European Union to Ukraine, the International Renaissance Foundation and the United Nations Development Program in Ukraine. These analytical portals provide public control over the activities of executive authorities, a certain level of accountability, transparency, and accountability of civil servants.

E-government projects are implemented in cooperation with all state structures, local self-government bodies with the support of international partners. The most important area of e-government is e-services, as they are a concern for every citizen. One of the main tasks was the implementation of 100 e-services by the end of 2018. The list approved by the Government included the most priority services for business and citizens. Services that would minimize corruption risks. This has been achieved, and there are currently 118 e-services available on the Government Portal, which serves as the "single window" to access all online services. These are socially important, such as childbirth assistance, business registration services, land and construction services (Unified Web Portal of Ukrainian Authorities, 2019).

Last year, important sets of e-services for drivers and carriers were also launched, available in the e-offices of the carrier and the driver respectively. These services are already in high demand (Unified Web Portal of Ukrainian Authorities, 2019). Also, the first fully automatic service appeared in Ukraine, which is not decided by an official namely, the beginning of construction work for the CC1 class.

The Government approved on January 30, 2018 a resolution approving the Action Plan on the implementation of the concept of development of the electronic services system in Ukraine for 2019-2020. It is also important that the philosophy behind the development of e-services is changing. The Ministry and the Committee on Digital Transformation of Ukraine will not only create new electronic services, but also optimize them in the light of life and business situations (Ministry and Committee of Digital Transformation of Ukraine, 2020).

The Ministry of Digital Transformation of Ukraine (Ministry and Committee on Digital Transformation of Ukraine, 2020) ensures the formulation and implementation of state policy in the field of digitization, digital innovation, digital economy, e-government, e-democracy and the development of the information society by:

- formulation and implementation of state policy in the field of development of digital skills and digital rights of citizens;
- formation and implementation of public policy in the field of open data, development of national electronic information resources and interoperability, development of infrastructure of broadband internet access and telecommunications, e-commerce and business;
- formulation and implementation of state policy in the field of providing electronic and administrative services;
- formation and implementation of state policy in the field of electronic trust services; formation and implementation of state policy in the sphere of IT industry development;
- performing the functions of a central certifying authority by ensuring the creation of conditions for the functioning of legal entities in the field of electronic trust services.

By 2024, the Ministry of Digital Transformation of Ukraine plans to ensure 100% accessibility of public services to citizens and businesses online, to provide high-speed internet access to 95% of transport infrastructure, settlements and their social facilities, to involve 6 million Ukrainians in the digital skills development program, provide a 10% share of IT in Ukraine's GDP.

The Ministry is currently working on the following projects: e-health, e-cabinet, mobile app, e-baby, passport together with IDN, child registration online, e-pension, smartID, mobileID, digital identity credentials, state without certificates, e-residence, trembita, developer's office, online banking, e-elections, e-census, electronic signature, ID card, work automation of CASPs, branding of the "sction" service (Ministry and Committee for Digital Transformation of Ukraine, 2020).

"Action" service within the Digital State project is: 1) a portal, an online service of public services where you can get a service at any time; 2) mobile application with electronic documents and data about the person from the registers; 3) a portal with online courses: basic digital literacy for teachers and parents; small and medium business aid portal; 4) CASPs – centers for providing administrative services in every region of Ukraine.

The concept of state policy in the field of digital infrastructure of the Ministry of Digital Transformation of Ukraine was developed on the basis of a multi-stakeholder approach, according to which the main purpose of the state bodies is to identify, prioritize, harmonize and satisfy the interests of the stakeholders. The stakeholder

interests are extremely large and often they conflict with each other. In order to ensure the sustainable development and reconciliation of the interests of different stakeholders, the Ministry and the Committee on Digital Transformation of Ukraine (2020) have identified the following priority interests for implementation:

- introduction of the latest technologies;
- access to the infrastructure of non-operators;
- increase of the radio frequency resource available for mobile communication of Ukraine;
- obtaining high quality services;
- development of e-governance and connection of social objects;
- development of broadband internet access;
- minimum price of service;
- access to the infrastructure of operators;
- reducing costs;
- reducing the cost of equipment;
- security of activity;
- getting the service everywhere;
- distribution of optical networks.

The development of e-gov provides for the provision of all administrative services online. The number of administrative services provided online will be an indicator of efficiency. In developed countries, public authorities are both large clients of digital service providers and facilitators of such services to the public. The ability to interact with the state online stimulates the demand for other electronic services among citizens. Digitization of processes within the state apparatus will also facilitate interaction and increase efficiency. Therefore, the development of electronic administrative services is one of the priorities of the Ministry of Finance.

A prerequisite for effective use of digital infrastructure is the availability of digital skills. In their absence, even the availability of coverage and equipment will not allow the benefits of advanced infrastructure. On the other hand, lack of skills reduces the demand for digital services, which hinders the development of the industry. Therefore, the development of digital skills is one of the priorities of the Ministry of Finance, which is set aside in a separate direction. According to the ministry's goals, more than 6 million Ukrainians will be enrolled in the Digital Skills Development Program, and 70% of citizens will have to complete the program and have basic skills.

Adaptation of the Ukrainian legislation to the processes of digitization is important for accelerating the pace of e-government implementation. An important step has been taken in this direction - the Cabinet of Ministers adopted a decree providing for the implementation of the digital by default principle. According to him, the priority way of implementing the process described in the document by default will be

determined by electronic means in all acts of the Government. To this end, the Government's regulations will be subject to digital examination.

Another important area of activity in the field of e-government is the introduction of electronic document flow in the authorities. In 2018, 193 authorities, institutions and organizations were connected to the system of electronic interaction of executive bodies. Therefore, electronic interagency interaction has been implemented in 673 organizations today. About 5,400 electronic documents are sent to the system daily.

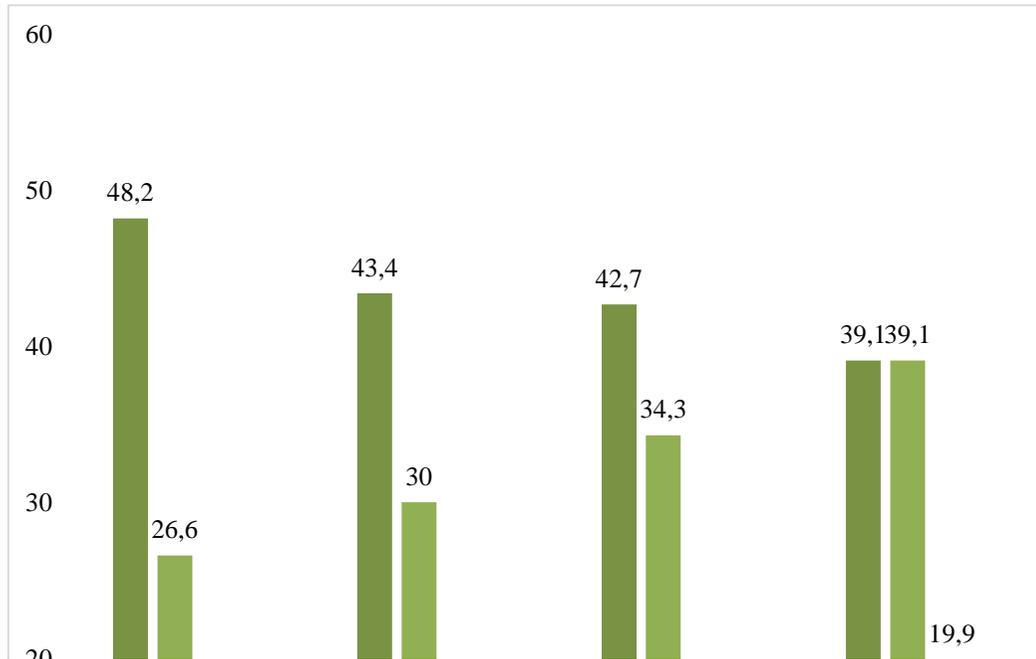
The field of open data has been actively developing for four years in a row in Ukraine. And every year, the importance and popularity of this field in society is only growing. In 2018, Ukraine ranked 17th in the world in the field of open data, and second place in terms of development over four years. This is evidenced by the open data barometer world rankings report. In 2018, the most anticipated datasets for Ukrainians have been opened, starting with the transportation sector and ending with local budget data.

It is possible to estimate the level of trust in the authorities on the basis of sociological research conducted by the Razumkov Center (2019) (Figure 1). Thus, from October 2019 to February 2020, confidence in the new government dropped significantly. In October, 48.2% of those polled thought the current government was better than the previous one, in February 2020 it was 39.1%. At the same time, they considered in October 26.6% that the current government is not much different from the previous one, in February, 39.1% adhere to this opinion.

Among state and public institutions, the most frequently expressed confidence is expressed in the Armed Forces of Ukraine (75% of respondents), the President of Ukraine (70%), the volunteer organizations (69%), the State Emergency Service (64.5%), and the National Guard of Ukraine (64%), the State Border Service (63.5%), the Church (61%), volunteer battalions (61%), and the Ukrainian media (56%).

Another important indicator of E-government assessment is the UN E-government Survey, which results in the E-government development index (hereinafter EGDI). Therefore, in 2014, Ukraine ranked 83rd in the ranking, in 2018 - 82 with an EGDI of 0,6165: on the Online Services Component (OSI), the score was 0,5694, on the ICT (TII) component, 0,4364, for the human capital component (HCI) - 0,8436. There is an uneven implementation and use of e-government tools and telecommunication system development at the level of individual regions in Ukraine.

**Figure 1.** Distribution of answers to the question "If you talk about your impression of the new government as a whole, how would you evaluate it compared to the previous government?"



Source: Razumkov Center, 2019

## 5. Conclusion

The conducted research makes it possible to conclude on the active digital transformation of public administration in Ukraine. The following main trends in the use of information technology in public administration can be identified:

- the development of institutional support for public administration in Ukraine;
- creation of analytical portals for ensuring public control over the activity of executive bodies, a certain level of accountability, transparency, accountability of the activity of civil servants;
- implementation of e-government projects takes place in cooperation with all state structures, local self-government bodies with the support of international partners;
- changing the philosophy of development of electronic services, namely the creation of new electronic services, optimizing them in light of life and business situations; open data is actively developing.

The concept of public policy in the field of digital infrastructure of the Ministry of Digital Transformation of Ukraine was developed on the basis of an approach with the involvement of many stakeholders.

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