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Igor Komarnytskyy, Doctor of Economic Sciences, Professor, Department of Marketing and Management, Khmelnytskyi Cooperative Trade and Economic Institute (Khmelnytskyi, Ukraine)

Hanna Komarnytska, Doctor of Economic Sciences, Associate Professor, Head Department of Public Administration and Business Management, Ivan Franko National University of Lviv (Lviv, Ukraine)

ASSESSING THE EFFECTIVENESS OF DIGITAL TECHNOLOGIES IMPLEMENTATION IN PUBLIC AUTHORITIES IN UKRAINE

Abstract. *This research article is devoted to the assessment of the results and effectiveness of the implementation of digital technologies in public authorities in Ukraine, as well as ways to improve the digitalization processes in public authorities in Ukraine. The article includes a study of digital technologies used in public authorities in Ukraine and their impact on the efficiency of public authorities. The article examines the criteria for the effectiveness of digital technologies implementation, as well as possible problems arising in the process of digitalization in public authorities in Ukraine. To solve these problems, the authors propose ways to improve the digitalization processes in public authorities in Ukraine. The results of the study may be useful for authorities seeking to optimize their work and improve efficiency through digital technologies.*

Keywords: *e-government, e-governance, e-democracy, digitalization, innovative management technologies*

Introduction. The introduction of digital technologies in public authorities requires a systematic assessment of its effectiveness. For this purpose, various indicators and methods are used to evaluate the results achieved and identify the advantages, disadvantages and potential areas for improving digitalisation.

The Ukrainian experience of evaluating the effectiveness of digitalisation in public authorities reflects the gradual improvement of the system of evaluation and monitoring of digital initiatives. The creation of special mechanisms, the involvement of experts and the public, and the systematic assessment of digitalisation development help ensure the effective and transparent implementation of digital technologies in public institutions. Continuing to

develop and improve this experience is important for improving the quality of public services, efficient resource management, and ensuring the development of a digital state.

Digital technologies also help to improve the interaction between the government and citizens, positively influencing compliance with the principles of public administration by results. It is important to note that countries that are actively implementing digital technologies are becoming more competitive, convenient and developed, as they increase the government's capacity to develop governance in line with its level of maturity.

However, the experience gained so far shows that the country's development towards digital transformation of governance is important and in some aspects urgent. The problem of disconnected departmental management structures aimed at individual instruments (e.g., national projects or state programmes) can be solved by developing platform solutions in the field of results-based management [Piskokha, N., 2022].

When implementing such solutions, agencies should provide reports to other agencies or governing bodies and enter reporting data on a common platform. Most of the data should be generated automatically based on primary accounting documents using "Big Data". Manual entry of information into the system by the authorities is excluded. The resulting data can be used to monitor and evaluate various performance management tools. This approach reduces labour costs associated with reporting and monitoring of the results achieved, and eliminates inconsistencies in various forms of departmental reporting.

The use of digital technologies also enhances the ability to analyse and evaluate the implementation of government projects and programmes. The process of auditing the effectiveness and efficiency of initiatives (government programmes) is particularly simplified. Today, performance evaluation is often reduced to calculating the degree to which the target values of programme and project implementation indicators are achieved. For monitoring purposes, an assessment of whether key events and activities are completed on time or behind schedule is used.

In the future, predictive analytics and artificial intelligence technologies will significantly change the quality of information and analytical support for decision-making.

An important condition for the successful implementation of digital technologies in public authorities is the effectiveness of the proposed solutions in terms of the cost-benefit ratio obtained after the implementation of government digitalisation projects.

Gradual removal of legal and technical restrictions on the use of digital technologies in public administration and minimisation of risks associated with the use of certain technologies

contribute to the successful digital transformation of public administration by results [URL: https://decentralization.gov.ua/uploads/., 2021].

The active use of the latest digital technologies in public authorities at all stages of the management cycle allows expanding the range of sources of performance data used, increases the efficiency of obtaining relevant data and promotes the use of modern tools to analyse the actual impact of the implementation of state policy and the implementation of state programmes aimed at various target groups.

The digital development of society and changes in the work of government agencies have a significant impact on the development of communities formed by decentralisation in Ukraine. One of the current trends is the introduction of elements of the digital governance system in local governments. This process is more active in cities, but also extends to amalgamated territorial communities (ATCs). There are already certain problems that arise during this process.

The term " Digital Community " is used to describe the organisation of local government management based on digital processes and mechanisms. This term is increasingly used in the scientific literature. The concept of a Digital Community involves the use of information technology, electronic services and online tools to improve governance processes, interact with citizens, provide electronic services and promote citizen engagement in decision-making. The digital community offers innovative solutions for effective interaction between local authorities, citizens and businesses through the introduction of electronic tools and digital platforms.

The Ministry of Digital Transformation has presented a trial version of the Diia.Digital Hromada platform, which is the basis for digitalisation officers in local authorities, known as CDTOs. These CDTOs act as digital transformation advocates who are gradually appearing in every city and community. The Diia.Digital Hromada platform contains streamlined information for local CDTOs, including recommendations for implementing digital tools, digital transformation plans, algorithms, and regulatory documents that can be useful to CDTOs in the regions for effective digitalisation.

This term requires detailed research and understanding of its potential, opportunities and challenges. The study of the digital community allows for the development of strategies, policies and tools aimed at improving local governance, ensuring citizen engagement and improving the quality of public services.

General challenges in the digitalisation of territorial communities include ensuring the availability of digital technologies and their widespread use by the majority of the population.

Municipal authorities show insufficient interest in creating a digital community due to the lack of high-speed broadband Internet access in rural settlements and small towns. One possible solution to this problem is to increase access to 3G/4G mobile networks and connectivity to the global network [Komarnytskyy, I.M. & Komarnytska, H.O., 2022].

When developing and implementing strategies for the digitalisation of districts, public authorities should cooperate with private network service providers, not replace them. The main task is to coordinate the efforts of various participants in the process of digitalisation of public life. This will help to create mutually beneficial impact and efficient use of local property that is transferred to private operators to develop the necessary infrastructure and support private initiative. Local communities can also build their own telecommunications networks, especially in areas with weak economic potential where private operators are not interested. This would ensure Internet access and competition in the Internet access market, especially where there is only one operator. Local authorities would not directly provide services to end users, but instead lease communication networks to different competing operators [Yevsiukova O. V., 2021].

The problems of creating and operating e-communities are insufficient funding and inappropriate use of financial resources intended for digital transformation. Usually, the allocated funds are used to create or update outdated information infrastructure, without taking into account the further integration of these resources into a single municipal information system and its connection to a regional, national and, in the future, global communication network. To solve these problems, it is necessary to standardise electronic interaction systems in the field of digital exchange formats and protocols. [Kvitka, S., 2020].

Many large communities in Ukraine have strategies and programmes for digital development, but their full implementation has not yet been achieved. An important factor is a proper focus on urban development that can be implemented in the future.

At the state level, the urgent tasks include reviewing and evaluating completed projects and existing systems with the help of the expert community, as well as creating a bank of "model" information systems. This will create a set of digital products, each of which will be aimed at solving a specific problem of the e-community, and local government IT specialists will be able to assemble the necessary configuration that will meet the scale and needs of the community.

In some regions of Ukraine, thanks to the support of regional authorities, digital technologies are actively used in amalgamated territorial communities. Despite the positive impact of such programmes, there is a problem that the development of digital communities is

limited by the fact that they do not have full control over information resources on their territory. They function as participants in regulated agreements, where the key role is played by the territorial bodies of the state. This violates the independence of local self-government bodies. Accordingly, at the legislative level, it is advisable to enshrine the possibility of equal interagency digital information exchange, in which local governments are equal participants [Komarnytska, H.O., Stanasiuk, O.A., 2022].

Thus, in order to further develop digital transformation in public authorities, it is necessary to focus on improving coordination and cooperation between agencies, as well as on conducting educational activities to increase the level of user competence. Only by addressing these issues can the maximum benefit from the use of digital technologies in the public sector be achieved.

An analysis of the legal framework governing digitalisation in Ukraine is an important step in the research, as it defines the legal basis and framework for the introduction of digital technologies in public authorities. It is worth analysing the key aspects of the legal framework and their impact on the digitalisation process in Ukraine.

First, it is worth paying attention to the laws and regulations governing digitalisation in Ukraine. In particular, these acts include the Law on Electronic Trust Services, the Law on E-Governance, the Law on Access to Public Information, and others. An analysis of these laws allows us to determine the legal framework for the introduction of digital technologies in government agencies.

The second aspect of the analysis concerns the identification of competent authorities and responsible structures that ensure the implementation of digitalisation in Ukraine. These may include the Ministry of Digital Transformation, the State Service for E--Governance, the National Communications Commission, and others. An analysis of the roles and functions of these bodies will help to identify which specific structures are responsible for implementing digitalisation and what powers they have.

The third aspect of the analysis is to assess the level of harmonisation of the legal framework with international standards and best practices in the field of digitalisation. This includes a comparison of Ukrainian legislation with European directives, recommendations of international organisations and other international standards. The harmonisation analysis will help identify potential gaps or advantages in the legal framework for digitalisation.

The fourth aspect of the analysis is related to the identification of legal gaps and obstacles that may arise during the implementation of digital technologies in public

authorities. These may include gaps in legislation, conflicts between laws, lack of clear regulation of certain aspects of digitalisation, etc. An analysis of these obstacles will help identify problematic issues and offer recommendations for improving the legislative framework.

The conclusion of the analysis of the legal framework will be an assessment of the effectiveness and adequacy of the laws governing digitalisation in public authorities in Ukraine. This analysis is an important step towards improving the legislative framework and creating favourable conditions for the successful implementation of digitalisation in public authorities in Ukraine.

The factors of successful digitalisation in public authorities are crucial for achieving positive results and effective implementation of digital technologies. Given the complexity and importance of the public sphere, it is key to consider the following factors:

1. Human resources and organisational aspects. First and foremost, successful digitalisation requires the availability of qualified personnel and the transformation of the organisation's culture. Employees must have the necessary skills and knowledge to use digital tools. In addition, organisational changes, such as the introduction of flexible structures, facilitate rapid adaptation to new technologies.
2. Technological requirements and infrastructure. Effective digitalisation requires the availability of the necessary technological solutions and infrastructure. Public authorities should have access to modern data management systems, cloud platforms, cybersecurity and other necessary tools to ensure uninterrupted and secure operation.
3. Ensure data security and cybersecurity. Data processed by public authorities is of particular importance and confidentiality. Preventing cyber attacks, protecting against unauthorised access and ensuring confidentiality are critical factors for successful digitalisation. Implementing robust cybersecurity systems and data protection policies are essential elements to ensure trust and security in the use of digital technologies.
4. Interaction with the public and stakeholders. Successful digitalisation requires active engagement with the public, civil society organisations and other stakeholders. Involving the public in the decision-making process and taking into account their needs helps to create an inclusive and trusting digital sphere.

Overall, successful digitalisation in public authorities requires a comprehensive approach that combines human capital, technology, cybersecurity, and public engagement. Only through a reasonable combination of these factors can effective and successful

digitalisation be ensured, which will improve service delivery and ensure openness and transparency in the activities of public authorities.

In addition, a digitalisation strategy involves analysing the current state and potential of government agencies in the field of digital technologies. This means identifying the specific goals that government agencies want to achieve through digitalisation, such as improving the quality of service delivery to citizens, ensuring efficient use of resources, and increasing transparency and openness in governance. It will also identify weaknesses and limitations that may affect the successful implementation of digital initiatives. Based on this analysis, specific strategic steps and tasks are developed to address these constraints and develop the necessary resources.

One important aspect of strategy development is to engage stakeholders and build partnerships between government agencies, civil society and the private sector. This facilitates the mutual exchange of knowledge and resources, the creation of innovative solutions and the effective use of experience and best practices. This collective approach ensures the sustainable implementation of digital initiatives and supports their successful implementation.

A digitalisation strategy involves the development of an action plan and mechanisms for monitoring and evaluating performance. This allows you to monitor the progress of digital initiatives, identify problems and adjust the strategy if necessary. Regular monitoring and evaluation of the results helps to support the sustainable development of digital initiatives and ensure that they meet the strategic goals and needs of public authorities.

Strategy development in Ukrainian public authorities is a key stage in the implementation of digital transformation. It allows to clearly define goals, development directions and specific steps to achieve success in the digital space. Important elements include analysing the current state, engaging stakeholders, and developing mechanisms for monitoring and evaluating performance. This strategy will form the basis for the sustainable development of public authorities and ensure their effective work in the digital age.

The introduction of innovative technologies and digital solutions has benefits that are manifested in various areas of life. In today's world, digital technologies are developing rapidly and are becoming an essential tool for success in any industry, including public authorities. The introduction of innovative technologies and digital solutions in these bodies can have a significant impact on the efficiency, accessibility and quality of public services, as well as on the interaction between the state and citizens.

One of the most important aspects is the development of e-government. This involves the transition from traditional paper-based processes to electronic systems and platforms that

simplify interaction between government agencies and citizens. E-governance allows for quick access to information, electronic submission of applications and documents, online consultations and payments, which reduces bureaucratic barriers and facilitates interaction with the state.

Public involvement in decision-making is another important aspect. Digital technologies provide the means to engage a wide range of citizens in discussions, public consultations, surveys and civic monitoring. This allows for the collection of diverse views, the consideration of public interests, and more balanced and effective decisions. In addition, electronic platforms and social media create opportunities for active communication between government agencies and the public, facilitating mutual understanding and problem solving.

In general, interaction with the public and the development of e-governance open up new opportunities for improving the dialogue between the state and the public, ensure more transparent and efficient work of public authorities, and contribute to building a democratic society.

The research results showed that the effective implementation of digital technologies in public authorities depends on many factors, such as proper planning and coordination of the process, sufficient financial support, establishing interaction between different authorities, and others. It has also been found that successful implementation of digital technologies is possible provided that competent specialists are involved and their information literacy level is increased. In addition, the support and participation of the public in the process of developing and implementing new technologies plays a significant role in the introduction of digital technologies in public authorities. Thus, the successful implementation of digital technologies in public authorities requires a comprehensive approach and consideration of various factors that affect its effectiveness.

As a result of the study to assess the results and effectiveness of the implementation of digital technologies in public authorities in Ukraine, the following conclusions can be drawn:

As for the positive aspects:

– The introduction of digital technologies has improved access to public services for citizens and businesses. Electronic services have made it possible to apply and receive information online, which has saved time and effort.

– Automation of processes and the use of electronic document management helped to reduce bureaucratic procedures, speed up document processing, and ensure more efficient interaction between government agencies.

– The introduction of digital technologies for financial and budget management has increased control over the use of public resources, prevented corruption schemes and ensured transparency in spending.

About challenges and problems:

– Inadequate infrastructure and internet access in some regions of Ukraine makes it difficult to realise the full potential of digital technologies.
– Data security and cybersecurity issues pose a serious threat when implementing digital solutions. Effective measures to protect information and personal data need to be in place.
– Digital inequality can be an obstacle for some groups of people. It is necessary to ensure that digital services are accessible and inclusive to all categories of citizens.

Our recommendations for improving the efficiency of digitalisation in public authorities in Ukraine:

– Develop infrastructure and ensure broad access to the Internet in all regions of Ukraine, including rural and remote areas.
– Pay due attention to cybersecurity and data protection measures, implement effective encryption and data protection systems.
– Pay special attention to the needs and interests of all groups of the population, ensure accessibility and inclusiveness of digital services.

In general, the introduction of digital technologies in public authorities in Ukraine has a positive impact on the quality and efficiency of public services, but requires attention to security, accessibility and inclusiveness. The further development of digitalisation of public authorities requires constant monitoring, evaluation and improvement to achieve optimal results and provide benefits for citizens and the country as a whole.

An analysis of international experience in implementing digitalisation in public authorities has shown that digital technologies play a key role in improving the performance of government agencies and governing bodies. The benefits of using digital tools include providing efficient and quick access to public services, automating processes, and saving time and resources.

The key to successful digitalisation in public authorities is the development of a strategy that takes into account the specifics of public institutions, the needs of citizens and stakeholders. To do this, it is necessary to strengthen the human resources and competencies of employees through training and retraining. In addition, the introduction of innovative

technologies and digital solutions will help improve the quality and efficiency of public services.

Taking into account the proposed ways of improvement, it can be concluded that digitalisation in the public authorities of Ukraine is a relevant and necessary process that will help improve the quality of public services, ensure effective management and increase public trust in government. Implementation of the proposed ways of improvement will require joint efforts by government agencies, professionals and the public, but as a result, it will be an important step towards a digital society and improved public administration.

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