Key aspects of e-government and digital technologies in Ukraine

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Abstract

Objectives: To explore opportunities and challenges regarding the development of e-government and digital technologies in Ukraine during the war with the aim of their further improvement. The research objectives refer to the systematization and definition of automation of processes in electronic governance; description of the main types of administrative online services in public administration; analysis of digital technologies in the public administration of Ukraine. The development of digital technologies is important for Ukraine as an influencing factor in stimulating innovation and improving support for Ukraine's strategic industries both during the war and during the country's recovery. **Prior work:** The research is focused the study is based on the concept of the development of electronic governance in Ukraine; studies of Ukrainian and foreign scientists regarding the process of providing administrative online services and the application of foreign experience in providing administrative services in Ukraine. **Approach:** To collect practical evidence, such approaches as observations on the properties of providing administrative online services are used. For research evidence, a case study approach to qualitative data collection and analysis is used. **Results:** An analysis and generalization of digital technologies in Ukraine, a comparison of the best practices of smart management abroad with electronic governance of Ukraine, and the application of foreign experience in Ukrainian realities. **Implications:** The study has practical and theoretical significance regarding the development of e-government and digital technologies for researchers, scholars and practitioners. **Value:** It consists in the original experience of the development of Ukrainian electronic governance and digital technologies before the war and during the legal regime of martial law.

Keywords: electronic state, information and communication technologies, public services, innovations in public administration.

1. Introduction

Today, under the conditions of digitization and globalization, e-government is an important tool for the modernization of public administration. In Ukraine, as in other countries, the introduction of electronic governance is a key task for increasing the efficiency, transparency and accountability of state institutions. The development of this system has such problems as uneven access of the population to digital technologies, insufficient development of legal regulation, low level of cyber security and slow integration into the international digital space [1].

The tasks of the research relate to the systematization and definition of automation of processes in the e-government of Ukraine. It is automation in electronic governance that contributes to the development of the information society and the new economy. Digital technologies help in improving resource management.

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2. Research methodology

Approaches such as observing the characteristics of the provision of administrative online services are used to collect practical evidence. A case study approach to the collection and analysis of qualitative data is used for research evidence.

3. E-government and digital technologies in Ukraine

3.1. The concept of "Smart city"

The concept of a "Smart city" is considered as a system where information technologies, urban communications and the Internet of Things are interconnected (Internet of Things).

C.-L. Pau identified the key components of smart management: e-government, data analytics, citizen participation, transparency and accountability, digital services and innovation, interoperability and integration, sustainability and resilience, education and capacity building. Regarding digital services and innovation, the implementation of innovative digital services is a cornerstone of smart governance. This may include mobile applications for public services, smart city solutions such as intelligent traffic management systems, and Internet of Things applications for efficient resource management [2].

Kh. Mkhitaryan, A. Sanamyan, M. Mnatsakanyan, E. Kirakosyan explored the concept of the "Smart city" as an innovative framework for promoting efficiency, sustainability and improving the quality of urban life. Researchers have explored global trends in smart urban development and assessed their application in the context of Armenia, providing a road map – the "Smart Yerevan Model" [3].

M. Namysłowska, A. Olbryk explored smart governance in Poland, using the example of the city of Lodz, which embodies new trends in smart governance through its innovative digital initiatives, contextualized within the legislative framework for algorithmic transformation under Polish law [4].

C. Codreanu analyzes Ukraine's Diia platform and addresses the cybersecurity challenges the country faces in supporting online e-government services and protecting them from the myriad of cyber operations and malware targeting them, both from cybercriminals and state actors [5].

The main Ukrainian scientists who research the digitization of administrative services are N. Likarchuk, V. Mykytenko, who note the improvement in the accessibility and speed of service provision due to the introduction of the "Diia" system. As the researchers note, digitalization reduces corruption and increases the transparency of the activities of state bodies [6].

3.2. Development of electronic governance in Ukraine

The development of electronic governance is aimed at increasing the efficiency of state institutions, guaranteeing transparency in decision-making and improving the quality of interaction between the government, citizens and business. The introduction of electronic governance requires thorough legal support that will meet the modern challenges of digitization and integration into the European digital space [1].

In accordance with the Decree of the Cabinet of Ministers of Ukraine "On Approval of the Concept of Development of Electronic Government in Ukraine" dated 13.12.2010 No. 2250-p, it is noted that «e-governance is a form of public administration organization that promotes efficiency, openness and transparency of the activities of state authorities and local self-government bodies with the use of information and telecommunication technologies for the formation of a new type of state focused on meeting the needs of citizens» [7].

Electronic government significantly changes the relationship between the state and citizens, considering them as clients who are worthy of respect and trust. Electronic government makes it possible to establish an equal partnership between the state and citizens. The client-centric governance model provides a one-stop shop for service delivery and a transition from a closed ministry model to a fully integrated government. This requires appropriate leadership potential, its development and support through specialized training programs and well-thought-out motivation systems for civil servants and citizens. This is important in the context of e-leadership to build a network of change agents in government and society.

The transition to a citizen-based government built on information and communication technologies is a long-term process and predicts the solution of technological, organizational and administrative problems. Implementation of the state model, which is based on the "single window" principle, which guarantees a complete structure and emphasizes on improving the quality of providing services to the population. The effectiveness of electronic services in real time is marked by the quantitative introduction of services according to the basic levels: 1st and 2nd levels where information about the service is provided and the service application is downloaded in pdf format; III level as submitting an application and paying for the service in real time; level IV is already a fully integrated service [8].

The main goals of electronic governance are: improving the quality and availability of public services for businesses and citizens; simplification of procedures and reduction of administrative costs; improving the quality of management processes, control over the effectiveness and efficiency of the activities of state authorities and local self-government bodies; guaranteeing the openness of information regarding the activities of state authorities and local self-government bodies, and providing the opportunity and participation of citizens and civil society institutions in the processes of preparation and examination of projects of political and administrative decisions [8].

The work of the electronic government in Ukraine has the following main directions: 1) Regulation of information communications between authorities – the formation of centralized databases and the use of distributed data processing technologies to automate document flow and improve interaction between state structures; 2) Provision of electronic services – provision of access to public services for citizens and businesses without time and territorial restrictions, which make it possible to receive documents and services quickly and conveniently; 3) Development of the electronic market – introduction of electronic procurement and tenders to increase transparency, reduce bureaucracy and increase competition among suppliers; 4) Electronic democracy – guaranteeing transparency and openness in the interaction between the state, citizens and business, which provides the possibility of active involvement of citizens in the decision-making process and public control; 5) Improvement of social services – electronic services in the fields of education, health care, ecology, which ensure equal access to services and improve the process of obtaining them; 6) Electronic justice – introduction of online justice to increase the efficiency of the judicial process, reduce the cost of time and resources; 7) Electronic voting – guaranteeing a convenient and safe voting process that will increase voter turnout and the accuracy of vote counting [1].

Actual state e-governance projects are: a single state portal of administrative services, and the transfer of administrative services to electronic form; system of electronic interaction of executive authorities and interdepartmental electronic document flow; open data and open data portal; electronic procurement – Prozorro system; interoperability standards and electronic interaction of state information systems; infrastructure of electronic identification: electronic digital signature and alternative mechanisms of electronic identification (BankID, MobiliID) [1].

The Ministry of Digital Transformation of Ukraine has been operating in Ukraine since 2019, which provides electronic services with other state authorities and international partners. First, it is the Government portal with the "Services" section.

Secondly, this portal "Diia" is a state mobile application, a web portal and a brand of the digital state of Ukraine. With the help of the Action, it is possible to receive such public services eMalyatko (at the time of the birth of a child), register a business and Individual entrepreneur online, submit declarations, pay taxes, sign documents, change the place of registration, receive National cashback, check the housing mortgage rate eOselya [9]. Electronic services include: business registration, filing declarations, obtaining certificates, issuing passports and driver's licenses.

According to qualitative data on the subject of the study, today the Diia e-government platform already has more than 23 million users in Ukraine. Over the past 5 years, the most popular public services have been digitized and dozens of innovative projects have been launched. Recently, Ukraine presented the world's first AI assistant on the state portal, which assists users in obtaining services.

Today, Diia offers: more than 70 public services; 33 digital documents. The next stage is the launch of more than 100 new services and the integration of artificial intelligence into all government processes. Currently, Diia is the new norm for Ukrainians, as a digital state, where every service is created with transparency, convenience and efficiency in mind [10].

The Ministry of Digital Transformation of Ukraine, together with local self-government bodies, state authorities and international partners, is working to ensure interoperability - the principle when different information resources can interact with each other on the basis of unified interfaces and protocols. The introduction of the "Trembita" system is a national system of interaction between state information resources, information systems and electronic registers. In this direction, Ukraine applies the experience of Estonia, which has the world's most perfect e-government system.

Electronic democracy in Ukraine is used at the national and local levels, these are: electronic petitions, electronic consultations, electronic appeals, participatory budgets (public budgets) [11]. The role of e-governance in the modernization of public administration is quite significant today.

The main digital technologies in Ukraine during the war are concentrated on the Unified portal of public services "Diia". This is the eRecovery program as assistance from the state for owners of housing damaged or destroyed due to hostilities [12]. It is possible to single out the key areas of implementation of the "Diia" portal. Social stability: the "Diia" portal provides access to social benefits, including the eRecovery program. Digital documents such as the ID card and driver's license at Diia facilitate the identification of citizens in times of crisis. Economic development: The IT sector that supports Diia creates jobs and attracts foreign investment. Export of IT services in 2023 amounted to 8 billion dollars. Digitization of business processes is carried out through "Diia", which helps the development of small and medium-sized businesses – taxes, registration of Individual entrepreneur. International image: the "Diia" portal positions Ukraine as an innovative state, strengthening its diplomatic position. As an example, these are the EU accession negotiations, which were partly based on the successes of digitalization. Resilience in war: it is during combat that digital technologies ensure the continuity of public services [13].

3.3. Application of foreign experience of digital technologies in Ukrainian realities

The application of foreign experience of digital technologies in Ukrainian realities is carried out in the field of education and services, digitalization of the economy, including online services, e-commerce, interactive educational platforms and e-government.

In international practice, the digital transformation of public administration involves not only the transformation of mechanisms for the provision of administrative services, but also creates potential for the use of the latest digital technologies in order to transform the procedures for making public policy. These technologies are used for the purpose of planning, evaluating and monitoring the effects of the activities of authorities. Foreign states present the state sphere as directed at innovative technologies, capable of being a catalyst for economic development, stimulating the growth of new markets and innovative ideas. To realize this, political will, interest and entrepreneurial initiative are necessary.

There is no single model of success, so the city's strategy must be flexible and provide for solving certain problems in any case. Examples of the successful introduction of Smart management in other countries testify that the achievement of the specified goals and the formation of an innovative society are the same for everyone, despite the differences in economic, political models and the national nature of the states [14].

Smart city technologies include the Internet of Things, energy conservation, energy efficiency and improved public safety. In the world, the best practices of a smart city are presented in Amsterdam, Chicago, and Singapore. In Ukraine, an example of a smart city is the Kyiv Smart City mobile application, which was replaced by the updated "Kyiv Digital" application, which combines Kyiv residents, business, city authorities and activists in the development of smart city infrastructure.

4.Conclusion

The study has practical and theoretical implications for the development of e-government and digital technologies for scholars and practitioners. It consists in the original experience of the development of Ukrainian e-government and digital technologies before the war and during the legal regime of martial law. The introduction of electronic services helped to increase transparency, reduce corruption risks and simplify business processes [1].

Digitization in Ukraine is about a change between the state and the citizen. Through the "Diia" platform, millions of Ukrainians gained access to public services, regardless of region, social status or age. The war showed that digital tools can be not only effective, but also just [13].

Opportunities and challenges regarding the development of e-government and digital technologies in Ukraine during the war were studied with the aim of their further improvement.

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