

## Digital services development in Ukraine

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### Abstract

Digital technologies, electronic communications, and digital services are currently being intensively developed in all spheres of Ukrainian society. Digitalization of public services at the state level helps to meet the expectations and needs of citizens in real time and contributes to improving the quality and sustainability of the services provided. At the same time, despite the progress made in the digitalization of public services, the proper functioning of the digital state is being hampered by a significant number of citizens who, for objective or subjective reasons, cannot use digital services. In other words, there is a digital divide, which determines the strengthening of the inclusiveness of the provision of digital services based on the principles of non-discrimination, taking into account the diversity of people, effective involvement and inclusion of all its participants in the digital process to improve the quality of life and well-being.

**Keywords:** digital services, digitalization of public services, inclusiveness of the provision of digital services

### Introduction

The development of digital services is one of the key trends of the modern economy and society. Digital technologies and the Internet enable fast and efficient communication, data collection and processing, operations and transactions. The development of digital services can become a catalyst for economic growth and improving people's quality of life. It allows you to create new business models that can compete effectively on the international market. In addition, digital services provide faster and more affordable access to various types of services for the population and businesses.

The development of digital services has many directions, including e-government, e-commerce, e-payments, cloud technologies, artificial intelligence, the Internet of Things and others. It is important to provide infrastructure for the development of digital services, including access to fast and reliable Internet, development of standards and regulatory framework, development of personnel potential, etc.

In most countries of the world, including Ukraine, the government and business are actively working to create favorable conditions for the development of the digital economy. In this process, it is important to ensure cooperation between different sectors of the economy to ensure effective and sustainable development of digital services.

### **Literature review**

Digital services are services provided electronically through Internet networks and other digital technologies (Rha & Lee, 2022). These can be various online services provided on the Internet, such as e-mail, cloud storage, social networks, online shopping, online banking, online courses, online video conferencing platforms and others (Nadav et. al.,2021).

Digital services can be developed and provided by companies, government agencies, public organizations or individuals who provide certain services or products on the Internet (Savin, 2021). These services can help improve efficiency, convenience and accessibility for users around the world, as well as improve productivity and competitiveness in various business and public sectors (Fischer et. al. 2020).

The development of digital services is one of the priority directions of Ukraine's development. The government and business are actively working to create favourable conditions for the development of the digital economy in the country.

It is necessary to pay tribute and show our respect to many scientists who have devoted their research to various aspects of the development of the digital state. Among them, the works of Raki et. al. (2022), Blinova (2021), Volberda et. al. (2021), Hariguna et. al. (2020), Tronvol et. al. (2020), Chukut, and Tsipsiura (2019), Kravchenko and Troshchynsky (2018), Castells (2006) and others.

The relevance of the development of the digital state indicates the need to continue research in this area.

## Methods

The research methodology is based on philosophical principles. First of all, understanding the development of society through digital technological processes, which are adopted by the government in establishing effective communication processes between various branches of government and establishing a dialogue between the government and individual citizens regarding the receipt of state-guaranteed services.

The research uses an analysis and synthesis approach by tracing the relationships between the concept of digital government and the results of its implementation. Empirical scientific concepts of the modern digitalization process were applied, which allowed to use synthetic judgments in tracking the mechanism of further development of digitalization in Ukraine. The results of various studies on the perception of this policy by the population in Ukraine were used, and on the basis of this, the main problems of the further development of digital services in Ukraine were identified.

## Results and Discussion

Digitalization of public services at the state level helps to meet the expectations and needs of citizens in real time and contributes to improving the quality and sustainability of the services provided.

During the last decade, a certain system of basic legislation has been formed in Ukraine, which ensures the digitalization process:

- Laws of Ukraine: «On Amendments to Certain Laws of Ukraine on the Functioning of Integrated Information Systems in the Field of Education», «On electronic documents and electronic documents circulation», «On electronic digital signature», «On administrative services», «On electronic trust services», «On basic principles of ensuring cyber security of Ukraine»;

- orders of the Cabinet of Ministers of Ukraine: «On Approval of the Concept for the Development of Electronic Democracy in Ukraine and the Action Plan for its Implementation», «Some issues of reforming the state administration of Ukraine», «On approval of the Concept of the development of the system of electronic services in Ukraine», «On the approval of the Concept of the development of e-government in Ukraine», «On the approval of the plan of measures for the implementation of the Concept of the development of the system of electronic services in Ukraine for 2017-2018», «On the approval of the Concept for the Development of the Digital Economy

and Society of Ukraine for 2018-2020 and the Approval of the Action Plan for its Implementation»;

- resolutions of the Cabinet of Ministers of Ukraine: «On approval of the National Economic Strategy for the period up to 2030», «On approval of the Regulation on data sets subject to publication in the form of open data», «Some issues of electronic interaction of state electronic information resources», «Some issues of documenting management activities», «Some issues of digital development», where «Principles of implementation by executive authorities of the principles of the state policy of digital development» were approved.

In 2019, the new government proposed the concept of «government in a smartphone», which provides the possibility of receiving up to 100% of government services online, and for this the user only needs a digital signature. The Ministry of Digital Transformation of Ukraine (Ministry of Digitalization) has been created under this project. The regulation on the activities of the Ministry stipulates that the Ministry of Digitalization provides (Ministry of Digital Information, 2023):

- formation and implementation of state policy in the field of digitalization, digital economy, digital innovations, e-government and e-democracy, development of the information society;

- formation and implementation of state policy in the field of development of digital skills and digital rights of citizens;

- formation and implementation of state policy in the field of open data, development of national electronic information resources and interoperability, development of the infrastructure of broadband access to the Internet and telecommunications, electronic commerce and business;

- formation and implementation of state policy in the field of providing electronic, administrative services and electronic trust services;

- formation and implementation of state policy in the field of IT industry development.

Considering this, one of the main goals of the Ministry of Digital Transformation of Ukraine is to digitize all public services within three years. The challenge is to make e-services more efficient, inclusive, flexible, and accountable. It is also important to show the visionary and leadership necessary to forecast and develop those services that will become relevant in the future, namely, to create new products for the benefit and comfort of citizens.

The result of the activity of the Ministry of Digitalization is the project of digitalization and informatization of administrative services – creation of the single portal for the provision of public services online – «Diia» (<https://diia.gov.ua/>).

«Diia» (short for «The State and I») is a mobile application, web portal and brand of the digital state in Ukraine, developed by the Ministry of Digital Transformation of Ukraine. «Diia» was first presented in 2019 and officially launched in 2020. The peculiarity of this service is that it allows getting government services free of charge, quickly, simply and conveniently.

The application allows citizens to store Ukrainian and foreign passports, driver's license and other documents in their smartphones, as well as transfer their copies when receiving banking or postal services, checking into a hotel, and in other life situations. Administrative services, which are provided for citizens and businesses in many areas through the single portal for the provision of public services online - «Diia», include:

- family («e-Baby» is a complex service that includes up to 10 state services related to the birth of a child, with only one application (register the birth of a child, his/her place of residence, issue financial assistance, etc.));
- pensions («e-Pension» is a project of electronic interaction with state registers for the appointment, calculation of pensions, supplements, compensations), benefits and assistance;
- e-work; health;
- references and extracts; licenses and permits;
- security and law and order; transport; land, construction, real estate;
- environment; documents and citizenship; entrepreneurship.

In «Diia», citizens can register a business online, pay taxes and submit declarations, sign any documents, change the place of registration, etc. In addition, many public services are provided through the Centers for the provision of administrative services (<https://www.cnapr.gov.ua/>).

By 2024, it is planned to transfer 100% of public services to Diya (Ministry of Digital Information, 2023). 72 services are already available on the portal, and 9 services and 15 digital documents are available in the application (Government services online, 2023).

In 2021, the Ministry of Digital Transformation of Ukraine presented more than 10 new services within the «Diiia» application. Among them are a change of place of registration, payment of taxes, replacement of a driver's license, business registration, digital signature and electronic petitions. In 2022, new electronic government services appeared online in «Diiia», including «e-Help», where citizen can apply for receiving additional financial assistance from international organizations, and «Adoption».

Ukraine, like the leading countries of the world, has created electronic public services related to the pandemic on its national portal: in the «Diiia» application, a Ukrainian and international COVID vaccination certificate with a QR code for an adult and a child can be generated. The certificate is created after the first dose, if the correct data is entered in the register. A certificate of recovery from COVID-19 and a COVID-certificate of a negative PCR test can be obtained as well. These digital state tools have proven to be vital for citizens and the country as a whole.

In 2022, new electronic government services appeared online in "Action", including "e-help", where you can apply for additional financial assistance from international organizations, and "Adoption".

The electronic service for adoption of children by the citizens of Ukraine has created an opportunity to submit an online application for consultation and application for adoption.

The consultation, which can be conducted online or offline, will allow a potential adopter (one person or family) to assess their readiness to adopt a child, understand the details of the procedure, and choose a form of family upbringing (tutelage, guardianship, foster family or a family-type orphanage).

An adoption application, whether online or offline, gives the right to register as an adoption candidate and learn about next steps, required documents, common questions, etc. Submitting an application takes up to 5 minutes, the application is processed within 15 days, all services are provided free of charge.

The innovative electronic service allows citizens immediately receive answers to the most typical questions that arise on the issue of adoption. The answers are presented in the corresponding tab. They include, in particular, the following: what are the forms of family upbringing? Is separation of brothers and sisters allowed during their placement in family forms of upbringing? Is the child's consent required for placement in a family? How long do children stay in the families of citizens? Who supervises children, arranged for family forms of upbringing?

The user-friendly interface makes it possible to view current laws and other legal acts related to adoption.

If a person has made a final decision to adopt, he/she can register as a candidate. Submission of the application takes place within 30 minutes, application processing - within 5 working days. This procedure is also free of charge. It clearly spells out how a potential adopter can get the service online or offline, presents typical questions with answers, and laws and regulations related to adoption. Further actions of the adopter are determined in one click.

Such a digital innovation in the provision of public services online in «Diia» not only speeds up and formalizes the process from the moment of adoption decision to the final processing of documents, but also creates an electronic register of potential adopters.

It is safe to say that the digitalization of the adoption process makes it as simple, convenient, and fast as possible for future parents.

The electronic service «e-Help» through the portal for the provision of public services online «Diia» allows to apply for additional financial aid from international organizations. Ukrainians, who are in the territories where active hostilities are taking place, as well as internally displaced persons, will be able to receive such financial aid.

As in the previous electronic service, the requirements for potential aid recipients are clearly stated there and the necessary documents are listed, including a passport of a citizen of Ukraine, an ID card, a permanent or temporary residence permit, a child's birth certificate; addresses of registered and actual residence; telephone number; IBAN (required for payment of the aid to the account), etc.

Applicants must fill out an online application form, indicating their social status and other required information. After one or the other international organization decides to provide aid to a certain category of applicants, lists of applicants for the aid will be transferred through the «Diia» portal. Next, the international organization will process applications in accordance with its internal regulations and make payments. The status of application can be checked on the platform's website. Aid recipient can find out about the receiving of the payment by checking the account, IBAN of which was specified in the application.

The following functions have recently been made available in the Diia application:

- a statement of residence can be generated through the Diia application, and to change the place of residence of internally displaced persons, they need to physically be at the place of temporary residence to confirm their geolocation;
- e-Document will work without the Internet, and Diia will work with minimal mobile connection.
- e-Diplomas and school certificates will be available. The Cabinet of Ministers of Ukraine has adopted the relevant resolution, and the team of the Ministry of Digital Transformation is already working on this experimental service.

The Ministry of Digitalization plans further digitalization of the state services through the «Diia» service, in particular, to develop accessible voting via the Internet both in Ukraine and abroad, and automated vote counting («e-Election»), as well as to create a «Developer's Cabinet», where information about the start of preparatory and construction works, making changes to the notification about their start, putting the facility into operation, etc will be automatically provided to the developer.

In addition, 289 public services can be obtained through Administrative Service Centers (2023). Online administrative services include services introduced by:

- Ministry of Justice of Ukraine (registration of a legal entity or individual entrepreneur, state register of real rights to immovable property, state register of civil status acts, unified register of enterprises subject to bankruptcy proceedings, electronic reporting system of insolvency officers, electronic court);
- The State Migration Service of Ukraine (checking the status of a passport for travelling abroad);
- The State Service of Ukraine for Geodesy, Cartography, and Cadastre (ordering an extract from the State Land Cadastre on a land plot, ordering an extract from technical documentation on the normative monetary valuation of a land plot);
- State Inspection of Architecture and Urban Development of Ukraine (online services in the field of construction and architecture);
- e-Declaration (declaration of economic activity during martial law).

We can say with confidence that digitalization is simplifying the lives of millions of people. To communicate with the state, you only need a smartphone or a laptop. This means no queues and no bureaucracy.



According to a nationwide survey conducted by the Kyiv International Institute of Sociology, «Opinions and Views of the Ukrainian Population on State Electronic Services», every second Ukrainian now uses Diia. In 2022, the number of respondents using the Diia app and portal increased to 52%, meaning that 6 million users joined. In 2021, the number of such people was 30%, in 2020 - 13%. The app is already used by 18.5 million users and the portal is used by 22 million. Thus, we can record a steady increase in the popularity of e-services among Ukrainian (UNDP, 2022).

Thus, the portal for the provision of public services online «Diia» has important advantages for consumers of this model of performing administrative activities (Kravchenko and Petkun, 2020):

- transformation of all public services into convenient online services,
- citizens have equal rights to access public services, information and knowledge provided on the basis of digital technologies,
- the level of trust of citizens in state authorities that provide high-quality digital services is increasing,
- citizens do not waste time in state authorities, but receive the necessary service at any time with the help of their gadgets,
- availability of automated personalized state services to every person 24/7 at any place,
- the speed and quality of the provision of public services,
- the transfer of public services to an electronic format contributes to the rationalization of the public servants' activities, the «paperwork» associated with the collection of information, requests to other institutions, etc., disappears,
- automation of the provision of public services significantly increases productivity, which makes it possible to free up resources for other priority tasks,
- significant reduction of time and costs compared to the traditional method of interaction in public administration,
- the workload on employees, who consulted citizens in the offices, is reduced,
- an opportunity to obtain the necessary state services without a corruption component due to the automation of processes.

Therefore, the single portal for the provision of public services online «Diia» has a positive effect on the effectiveness and efficiency, quality, and cost of public and personal activities.

At the same time, despite the progress made in the digitalization of public services, the proper functioning of the digital state is being hampered by a significant number of citizens who, for objective or subjective reasons, cannot use digital services. In other words, there is digital inequality.

Digital inequality (or the digital gap) is an inequality in access to opportunities in the economic, social, cultural, and educational spheres that exist or are exacerbated by incomplete, uneven, or insufficient access to computers, telecommunications, and digital technologies (Decree of the Cabinet of Ministers of Ukraine 2018).

The most vulnerable are people with disabilities, the elderly, low-income citizens, children, and people from different groups who need to meet their individual needs and interests, i.e. those categories of people who have certain social or other barriers to accessing and using electronic services.

The survey has found that among socially vulnerable groups the most likely to use the Internet are respondents who are veterans, internally displaced persons, and those raising children alone (81% of regular users and only 6-7% who do not use it at all). Parents of children with disabilities use the Internet somewhat less (75% of regular users and 13% who do not use it at all). Among respondents with disabilities, 50% use the Internet every day, and 31% do not use it at all. Elderly people are the least likely to use the Internet: 32% do it every day, while 48% do not use it at all. Among those aged 70 and older, 22% use the Internet every day and 59% say they do not use it (UNDP, 2022).

The main reasons for not using state e-services include lack of need (reported by 71% of respondents); lack of necessary skills (47%); and lack of an internet-connected device (32%). At the same time, 43% of respondents who reported a lack of skills do not want to develop them at all, 30% say they would like to develop them with the help of children/grandchildren, and 11% - with the help of short videos with instructions (UNDP, 2022).

## **Conclusions**

Thanks to the intensive government policy, Ukraine is steadily following the course of digitalization despite the threatening challenges in the international situation. The

government is actively working to create favorable conditions for the development of the digital economy in the country.

One of the most effective initiatives in the field of digital services is the "Action. Digital State" program. This program directed the development of e-government. It intensified the implementation of electronic services for the population and business, significantly improved the infrastructure of electronic services, etc. As part of the "Action. Digital State" program, a system of electronic document circulation between authorities, public organizations and authorities has been implemented in Ukraine, a central database of public services is being created, a mobile application is being developed for access to public electronic services, etc.

However, despite the intensive development in Ukraine, the problem of digitization remains, which scientists define as digital inequality. By nature, digital inequality is a consequence of non-acceptance of government initiatives to introduce digital services. Certain categories of the population are not interested in such introductions and are ineffective. Thus, they form a hidden challenge to political initiatives against the background of not solving a large number of ordinary social problems and guarantees provided for by the Constitution of Ukraine.

Regarding the further development of digital services in Ukraine, it is necessary to solve the primary problems:

- Lack of effective legislation on digital services. Ukraine lacks a legislative framework for the development of digital services, which delays the development of the industry and hinders the attraction of investments.
- Lack of a state strategy for the development of digital services. The Government of Ukraine should develop a clear strategy for the development of digital services, which would include various sectors of the economy and promote their development.
- Lack of national digital infrastructures. Ukraine should develop its own digital infrastructures, such as data processing centres, which will ensure reliable and fast data transmission.

At the same time, there are digital inequalities among different categories of citizens and socio-demographic groups at the level of use and at the level of skills, which leads to increased inclusiveness of digital services based on the principles of non-discrimination, consideration of human diversity, effective engagement and inclusion of all participants in the digital process to improve the quality of life and well-being.

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