

DIGITAL TRANSFORMATION OF THE PUBLIC ADMINISTRATION:A  
CASE FOR ODESSA REGION

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**Abstract**

*The latest paradigm of modernization of public administration is its digital transformation. Two main issues for the success of digital transformation are identified: motivating citizens to use digital technologies and the transition from government-oriented services to meet the needs of citizens to an environment in which they will independently determine their needs and mechanisms to meet them, the study proposes indicators for assessing the process of digital transformation at the local level. The combination of qualitative assessment of the motivation of service recipients and quantitative data indicating the level of electronic readiness of the region allowed to establish the effectiveness of its digital transformation. The implementation of the prepared recommendations will help increase the efficiency of digital services and will contribute to the digital transformation of public administration in Ukraine.*

**Keywords:** digital transformation; administrative services; public administration

**1. Introduction**

Governments that seek to meet society's expectations must implement public governance systems that are convenient for citizens and able to meet their needs. Public administration has certain differences, which are that the government must meet the needs of citizens, recipients of administrative services. The government must also ensure their democratic rights and the opportunity

to participate in decision-making (Alford, 2002). According to this approach, the

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possible definition of the value added of government should be determined only by the public interest (Perry and Vandenaabeele, 2015), (Perry and Vandenaabeele, 2017).

## 2. Literature review

There is a variety of known definitions of "digital transformation". Depending on the problem, digital transformation is usually understood as the transition to the provision of administrative services in digital form or free access to public information (Silcock, 2001), (Heeks, 2005), (Spirakis, Spiraki and Nikolopoulos, 2010). An important precondition for digital transformation is also the desire to increase the efficiency of service delivery (Lemuria and Bélanger, 2005). To do this, the process of digital transformation should be based on the modernization of internal document management processes and innovations in public administration technology. A possible result of this process may also be the provision of a digital presence of the authorities, promoting their interaction with other social and political structures (Luna-Reyes and Gil-Garcia, 2014). To ensure the effectiveness of the digital transformation process, it is advisable to take into account the recommendations prepared by the (European Commission, 2016), (OECD, 2016). According to them, the precondition for the introduction of innovations in the field of public administration should be the realization that digital technologies are only a certain tool, the application of which allows to achieve the goals set by the authorities. At the same time, the evaluation of the achieved success in the implementation of the digital transformation strategy should be carried out in three main areas: efficiency, effectiveness and good governance (European Commission, 2013)

An alternative approach to defining the concept of digital transformation is a proposal to rethink the business model of government, its focus on meeting the needs of the market of administrative services (Schallmo and Williams, 2018), (Capgemini Consulting, 2011), the emergence of crisis situations, (Garcia and Ariono, 2015).

The digital transformation of the sphere of public administration requires a change in the forms of its activity so that administrative services are provided to citizens more efficiently. But before that, it is necessary to determine how motivated citizens are to turn to government websites and portals.

Citizens of all ages use government websites to obtain information. Thus, the share of citizens who reported doing so in the last 12 months was the highest among 25-34 years (56%). Between the ages of 35 and 44, they were followed by 53%. Although older people tend to use government websites less to obtain information, almost a quarter (23%) of people aged 65-74 have used government websites in the last 12 months.

Table 1 - Distribution of the percentage of visits to government websites by age

Age	16-24	25-34	35-44	45-54	55-64	65-74
Access to websites (%)	44	56	53	47	38	23

Source: ec.europa.eu/rostat

The development of e-government and access to the Internet for citizens varies considerably between EU member states, as does the share of citizens who use the Internet in general.

In 2019, a significant proportion of citizens in the Nordic countries used government websites to obtain information: 89% of Danish citizens, 84% of Finnish citizens and 79% of Swedish citizens said they had done so in the last 12 months. These shares were also high in the Netherlands (76%) and Estonia (69%). In contrast, only 9% of Romanian citizens received information from government agencies through their websites. It was also not common in Italy (19%) and Bulgaria (20%) (ec.europa.eurostat, 2019).

In Ukraine, thanks to the government's strategy for digital transformation in all spheres of public life, the share of the population turning to digital services is growing rapidly. Thus, during 2020, more than half of citizens (53%) used at least one digital service (Report KIIS, 2021). In addition, 13% used the application or portal "Action"; 13% used e-government services to receive social benefits; 12% - in the field of personal transport; 11% applied for pension issues; 10% - to obtain public information; 9% - when dealing with issues related to business and taxation, etc. (Report KIIS, 2021).

## 2. Methods and methodology

In determining the research methodology, the main provisions and objectives of the national project "Electronic, inclusive, accessible: support for digitalization of public services in Ukraine", implemented by the Ministry of Digital Transformation of Ukraine, were taken as a basis. In line with the project objectives: administrative services reform and reengineering and digitization of public administration processes, special attention was paid to Objective 9 "Creating sustainable infrastructure, promoting inclusive and sustainable industrialization and innovation", which aims to improve access to information and communication technologies. (Report KIIS, 2021).

Considering the issue of research on digital transformation, the paper proposes to apply an approach that will answer the question:

1. the extent to which citizens and societies, users of administrative services are ready for change and the transition to communication with the use of digital technologies;
2. how to move from government-oriented services to meet the needs of citizens to an environment in which they can independently determine their needs and the mechanism for meeting them.

To obtain an assessment of problematic issues, the research methodology is proposed to determine changes in the qualitative characteristics of public administration at the local level.

A key factor in the digital transformation is the motivation of citizens to use digital services and access them through government websites. Therefore, the first step in the process of digital transformation should be to determine the attitude of recipients of services, local thunder and business to the proposal to transfer communication with them in a virtual environment.

To do this, it is proposed to use a methodology based on the tools of sociological research, the basis of which is the theory of consumer behavior. According to it, the problem of providing administrative services should be considered in terms of meeting the demand for it. The marketing approach, in contrast to the statistical one, is based in its analysis on the preferences of the "real recipient of the service". The service is a "product" offered by the "manufacturer", public authorities. According to this approach, knowledge of the mechanism of formation of the position of the recipient of the service allows to build the process of digital transformation of the public administration system with a target focus on potential consumers.

To determine the indicators that can be used to assess the demand for administrative services, the study used the recommendations presented in the methodology for assessing the state of network readiness of the Center for International Development at Harvard University: "Readiness for the information society. A Guide for Developing Countries" (Center for International Development, 2000), (Sukaina Al-Nasrawi and Saleem Zoughbi, 2014).

To ensure the effectiveness of the digital transformation process, it may also be appropriate to use a proposal to present the environment in which public authorities interact, the structure of SEED: social, economic and environmental development (Huang, Hsueh, and Reynolds, 2013). The emphasis on public-private partnerships allows the SEED structure to be used to analyze the process of digital transformation of administrative services.

According to the SEED structure, the transformation process must be represented by certain phases of its development. Taking into account the specifics of the digital transformation of the public administration system, each of the phases can be defined as follows:

Phase 1. Identifying the needs of the local community. Needs are determined on the basis of analysis of qualitative data that characterize the level of satisfaction of the local community with the administrative services provided to them.

Phase 2. Development and adoption of a strategy for modernization of public administration based on its digital transformation. Government, public administrations, stakeholders, NGOs and businesses should set up interdisciplinary groups to offer a shared vision of the priorities and results of the digital transformation.

Phase 3. Modernization based on the attraction of innovation in the field of public administration. The results obtained in phases 1 and 2 should be the basis for controlling the digital transformation process further.

Phase 4. Defining the hierarchy of the digital transformation process from the central government to the local community. Compliance with the condition of openness of the digital modernization process should take into account the specifics of local needs and development. Further generalization of the received local practices will allow moving to their dissemination to other communities and development of a national strategy for government modernization.

Phase 5. Evaluation of the effectiveness of the transformation process. Monitoring the use of phase 1 tools, adopted evaluation criteria and indicators

allows to improve the adopted strategy in the process of its implementation.

Phase 6. Distribution and dissemination. In line with the results of phases 4 and 5, the concept of digital transformation of the public administration system, created and adapted to local specifics, should be offered to other communities for adoption.

For the practical application of the proposal to present the transformation process in certain phases of its implementation, the study proposes to use the following criteria for assessing the state of modernization of the public administration system at the local level:

Evaluation criterion 1. Information representation of administrative services corresponds to the general experience of the user and the level of satisfaction he wants to get from the use of digital representation of the service.

Evaluation criterion 2. The dynamics of implementation of digital transformation plans by local authorities meets the needs of service users, they can meet their needs using a digital form of service.

Evaluation criterion 3. Assessment of user motivation, which characterizes the attitude of citizens to receive services in digital form. This indicator also allows us to determine the growth prospects for the demand for administrative digital services.

Evaluation criterion 4. Possibility of open access to public information required by the user.

Evaluation criterion 5. Timeliness, which determines the availability of information infrastructure required to obtain administrative services over time.

Evaluation criterion 6. Expectation that determines the level of satisfaction that the user expects from the use of the service. This indicator also allows to determine the motivation of citizens to receive administrative services in digital form.

The collection of qualitative and quantitative data that will establish the compliance of the state of digital transformation with the proposed evaluation criteria was conducted as a result of a sociological study of the motivation and needs of the local community. The analysis of the collected data took into account the adequacy of the sample size and the conclusions of the experts involved in the cooperation.

### **3. Results and discussion**

There is a common understanding that the use of the concept of digital transformation will help modernize administrative services, increase their productivity, efficiency and increase transparency. Openness and trust in public administration by citizens and businesses is also a key factor in the digital transformation. The obligatory result of any digital transformation process should be a reduction in the size of the public sector. Translating its function into digital form should provide citizens with the opportunity to receive them without directly contacting public authorities.

The interconnectedness of the challenges and problems faced by public authorities and public organizations in the provision of administrative services requires innovative solutions to present them in the information environment. To

this end, public authorities should involve all stakeholders at the very beginning of the digital transformation process, phase 2. The provision of administrative services in digital form in order to increase their efficiency and productivity requires constant monitoring of the process of digital service provision phase 5.

The expediency of using the proposed approach was confirmed during the study of the process of digital transformation of public administration of Odessa region and southern Ukraine.

The study of the effectiveness of the digital transformation process was conducted in several stages (phases 1-5), which allowed to determine the level of e-readiness and e-involvement of the region.

At the first stage, a general list of all evaluation criteria was formed, which was found in various sources of secondary information. This list was further supplemented by characteristics obtained from a survey of experts, as well as characteristics that were presented to important local public authorities whose staff are familiar with the practical aspects of the digital transformation. The expert interview was conducted in the form of a free discussion without a predetermined list of issues.

As a result, a list containing about 120 characteristics was prepared. Their further processing, the essence of which consisted in the substantive generalization of similar in content and the exclusion of duplicate indicators, allowed to reduce the initial list and group them into separate groups. The final list of evaluation areas corresponds to the list of Evaluation Criteria 1-6.

Based on the proposed indicators for assessing the effectiveness of administrative services, as a result of studying the state of the process of digital transformation of public administration of Odessa region and southern Ukraine was:

- an assessment of the state of readiness of public administration bodies for the effective use of modern digital and information technologies, the transition to e-government;
- the real practice of using digital and information technologies by civil servants in everyday work is clarified;
- the estimation of needs of civil servants in improvement of their qualification in the directions connected with introduction and use of digital technologies is received.

Some results of the study of the effectiveness of the digital transformation process are given in the Annex.

The analysis of the obtained data confirmed the thesis that the digital transformation of the public administration system is a powerful tool for increasing its efficiency and meeting the needs of the local community. But in practice, this process faces various problems due to the mismatch between the growing needs for innovation and the level of existing information infrastructure, the compatibility of different management systems and the quality of service delivery. It has been proven that this hinders the implementation of necessary and adequate reforms in the field of administrative services and processes. To do this, it is first necessary to review and reengineer the target services of the authorities to make them compatible, efficient and reliable.

The results of analytical processing of the obtained data allow us to draw

conclusions that indicate the level of electronic readiness and electronic involvement in the target area:

1. In the south of Ukraine and in Odesa region there is a clearly defined trend of development of the process of digital transformation of the public administration system. It is in line with the strategy proposed by the Government of Ukraine and the Action portal. However, it should be noted that there is a lack of systematic work in this direction, which may be due to the lack of stable funding and inadequate qualifications of civil servants in this area.

2. The main shortcomings of the process of digital transformation of local public administration bodies include:

- lack of uniform, adapted to national standards, regulations for the functioning of the electronic document management system;
- lack of strategic documents (concepts, strategies and programs for the development of the information society and e-government);
- limited access of legal and natural persons to public information resources;
- Insufficient professional level of training of civil servants and citizens, necessary for the transition to the provision of administrative services in digital form;
- electronic document management systems of public authorities and public administration have limited functionality.

The study paid special attention to the existing practice of supporting government websites. The monitoring of their use and support revealed a number of weaknesses in the use of these tools in the process of digital transformation by public authorities:

- imperfection of the existing websites of the authorities, which does not allow to provide an interactive mode of operation and provision of administrative services in a "single window";
- the use of services of interaction between the government and the community is limited;
- there is a lack of Internet access in remote settlements;
- There is a lack of specialists in the field of web design and information technologies on the ground.

These problems indicate the priorities for local public administration in the direction of further development of the digital transformation process.

Particular attention was paid to the issue of e-involvement, which is the basis for the development of the information society. Provided the appropriate infrastructure is created, citizens will be able to use modern information technologies as an alternative to traditional methods of communication, formal and informal interaction.

World practice shows that the best option for implementing a digital transformation strategy is to present it on the basis of a certain sequence of measures. A possible example of such an approach is the proposal to present the process of digital transformation at the local level in phases 1-6.

#### 4. Conclusion

Modern information technologies are an effective way of digital transformation of administrative services, which allows to create a more open, innovative and transparent system of public administration. To do this, the process of digital transformation of the public administration system must focus on the needs of citizens and users of administrative services. First of all, this means that citizens who have certain skills can find the public information they need or make a transaction to receive an administrative service. The level of provision of such a service, its efficiency should not be lower than in the private sector. To do this, the model of digital transformation of the public administration system should be focused on:

- reintegration of bureaucratic structures with simultaneous alignment of horizontal ties both within the governmental levels of government and with their external environment. Such reintegration must take place using modern digital and new administrative mechanisms created by governments. The result should be cost reduction, elimination of duplicate administrative functions and simplification of the organization of the public administration system on the basis of unification of service regulations;
- Orientation of the public administration system to the needs of the population and implementation of the concept of "one window" or e-queue services in the practice of providing administrative services. This should ensure the work of the authorities in real time and feedback;
- digital transformation of the public administration system based on the introduction of electronic delivery of services and technologies. Excluding civil servants from the service process will create the preconditions for a transition to a more open government and access to public information.

The results of the study generally show that in the practical context, the development of the process of digital transformation depends on two main factors: e-readiness and e-involvement. But their definition requires an understanding of many factors that are specific to the target area and have an impact on the processes of digital transformation. Therefore, a special case study aimed at establishing the current state of the digital transformation process at the regional level is appropriate not only to address the problem of improving the efficiency of administrative services at the local level, but also to modernize the public administration system in general.

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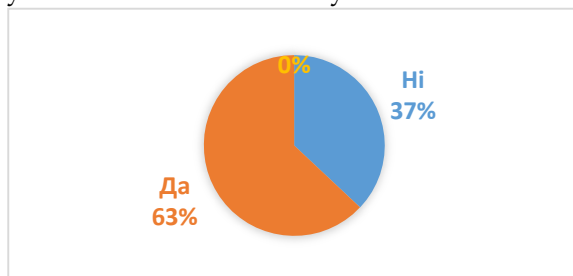
### ADDITION

Graphic 1 - 7 shows the distribution of data collected during the study of the effectiveness of the process of digital transformation in the Odessa region of Ukraine according to Criteria 1 - 6.

#### Evaluation criterion 1. Information presentation of public services.

It is established that the existing processes of digital transformation meet the needs of most users to receive public services in digital form, Graphic 1.

Graphic 1 - Distribution of answers to the generalized question "To what extent does the current level of administrative services meet your needs and the ability to obtain them digitally? ».



Source: author's contribution

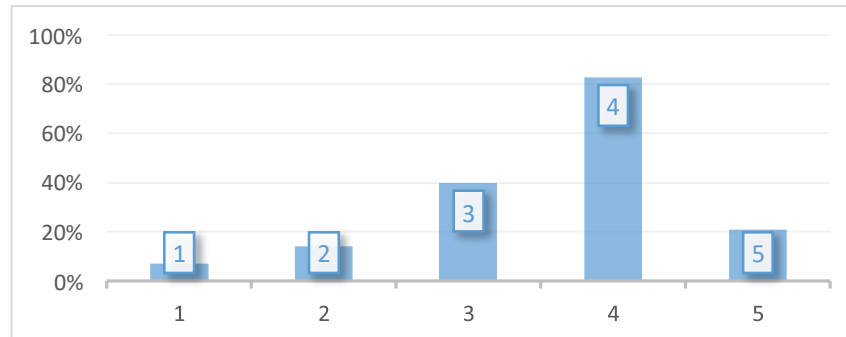
#### Evaluation criterion 2. Dynamics of implementation of digital transformation plans by local authorities

The results of the study showed that, despite the lack of a formal system for monitoring the digital transformation of local governments, 83% of surveyed service users and officials in general have the opportunity to meet their needs through digital technology. This indicates the gradual introduction of a result-oriented approach, Graphic 2.

The assessment was based on the following responses from civil servants:

1. The local public administration body has developed and used a guide to evaluate the results of the digital transformation program.
2. The local public administration body has implemented a system for evaluating the results of the digital transformation program, which is integrated into the system of providing services in digital form.
3. The local public administration body has implemented a system for evaluating the process of digital transformation, which is consistent with the existing list of indicators for the overall assessment of the effectiveness of the authorities.
4. The local public administration body regularly provides reports on the development of information systems and dissemination of the list of administrative services provided in digital form.
5. The local public administration body does not have any system for the development of the process of digital transformation and evaluation of the effectiveness of administrative services.

Graphic 2 - Distribution of answers to the generalized question "To what extent does the implementation of plans for digital transformation of government functions correspond to the established directions and allow to obtain the necessary services in digital form? ».



Source: author's contribution

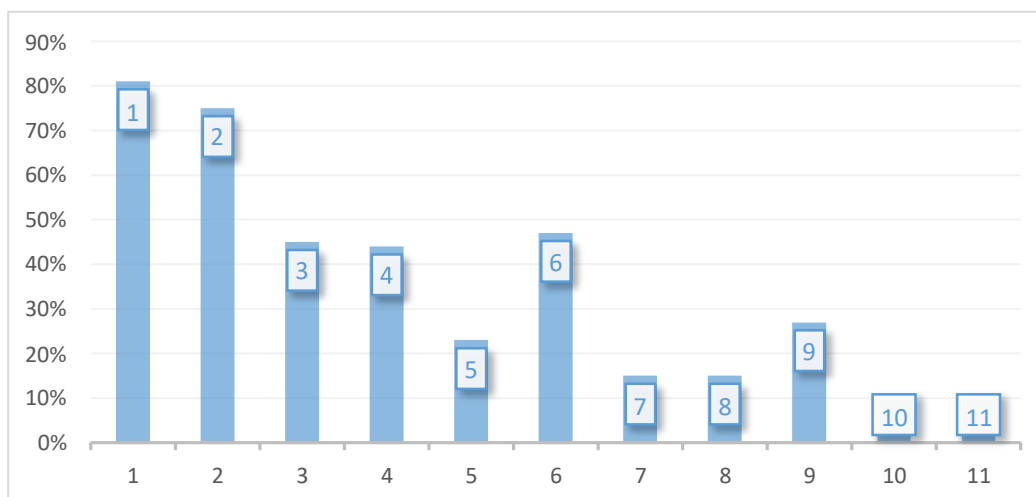
Evaluation criterion 3. Assessment of user motivation, which characterizes the attitude of citizens to receive services in digital form.

When collecting the answer to the generalization of the question, "What results have been achieved in your region as a result of digital transformations of public administration functions?" Most experts identified such effects as: reduction of time for information collection and processing (81%); the statement that in their region the transparency of government activities has significantly increased (76%), Graphic 3.

The assessment was based on the following responses from civil servants:

1. Increased efficiency of information processing.
2. Reduced time for collecting and processing information.
3. Availability of information and transparency of decision-making has increased.
4. It is possible to automatically process information and identify problem situations.
5. The quality of the analysis of the public administration process has increased due to the reliability and relevance of the obtained data.
6. The document flow of paper documents decreased.
7. The efficiency of administrative services has increased.
8. The convenience of receiving administrative services was improved.
9. Waiting time for receiving administrative services decreased.
10. The number of documents required to receive services decreased.
11. The cost of providing administrative services decreased.

Graphic 3 - Distribution of answers to the generalized question "What effects have been achieved in your region as a result of digital transformations of public administration functions?"



Source: author's contribution

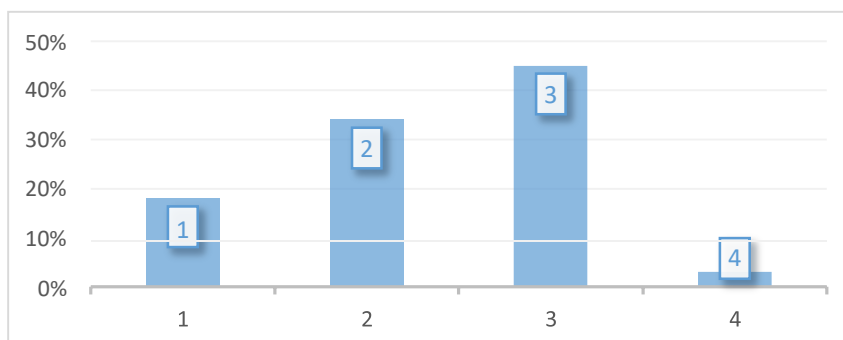
Evaluation criterion 4. Possibility of open access to public information required by the user.

When collecting the answer to the generalized question "Does your district have access to information or provide applications from citizens and organizations in electronic form?", Most experts noted that: only a third of districts (45%) have electronic forms for citizens, and the processing of appeals is carried out manually; in only 34% of districts is the application processing procedure automated, and the results of the review are published on the website, Graphic 4.

The assessment was based on the following responses from civil servants:

1. Yes, online conferences are held on the use of websites with the participation of government officials, there are forums.
2. Yes, the website provides an opportunity for citizens to participate in the discussion of decisions to be made.
3. The website has application forms or the opportunity to apply.
4. The website does not provide the opportunity to work with citizens' appeals.

Graphic 4 - Distribution of answers to the generalized question "Does your district have access to information or provide applications from citizens and organizations in electronic form?".



Source: author's contribution

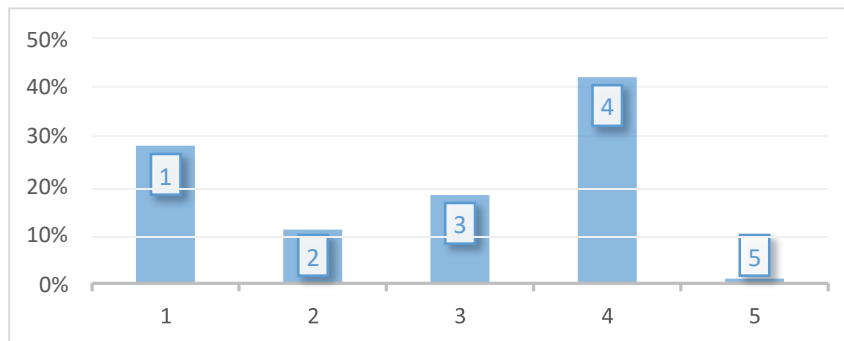
An important feature of assessing access to public information is the ability for citizens and organizations to receive administrative services in electronic form. 42% of respondents said that they can download electronic forms of

documents, fill them in manually or bring on physical media to the department. 28% of respondents have the opportunity to contact the agency via the Internet, Graphic 5.

The assessment was based on the following responses of respondents:

1. No, this possibility is absent.
2. Yes, it is possible to fill in the form and provide it in printed form or on physical media.
3. Yes, it is possible to contact the department via the Internet and obtain certificates.
4. Yes, it is possible to fill in electronic forms and make an appointment in person at a local public administration body.
5. Yes, there is a possibility of remote communication with employees of the local public administration body.

Graphic 5 - Distribution of answers to the generalized question "Whose citizens and organizations have the opportunity to receive public services in electronic form?"



Source: author's contribution

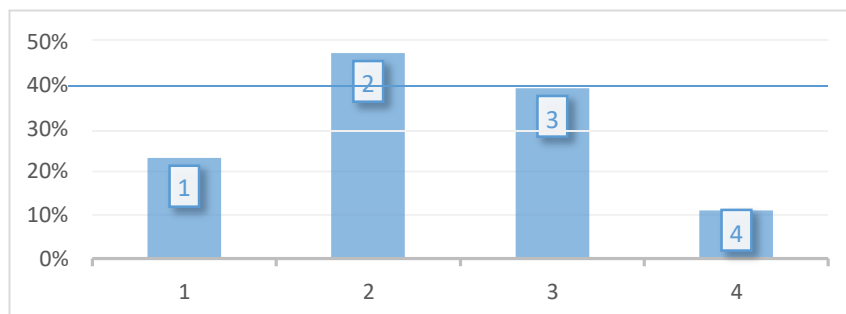
Evaluation criterion 5. Timeliness, which determines the availability of information infrastructure required to obtain administrative services over time.

When answering the question, "To what extent is it possible to communicate with citizens and institutions in digital form in your district?" most respondents were generally positive about the level of digital representation of local government activities, Graphic 6.

The assessment was based on the following responses of respondents:

1. On the website of the local public administration body, online conferences are held with the participation of government officials, there are forums.
2. Website design provides an opportunity for participation of citizens and organizations in the discussion of problematic issues (forums, polls).
3. The website has application forms or provides the ability to submit applications in electronic form.
4. The website does not provide the opportunity to work with citizens' appeals.

Graphic 6 - Distribution of answers generalized question "To what extent is it possible to communicate with citizens and institutions in digital form in your district?"



Source: author's contribution

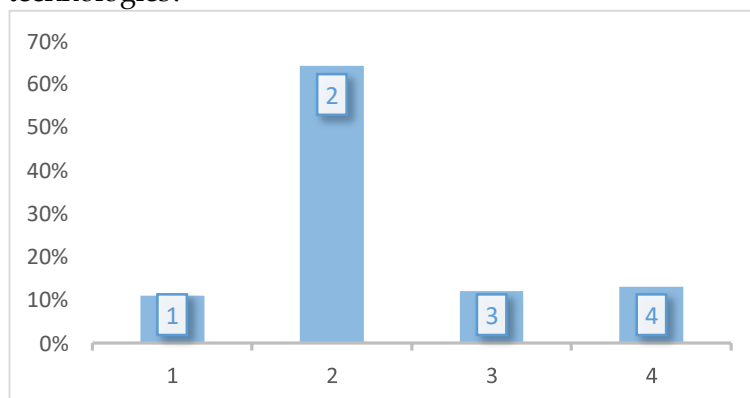
Evaluation criterion 6. Expectation that determines the level of satisfaction that the user expects from the use of the service.

The results of the survey on the question "How satisfied are you with the current level of representation of public administration of digital technologies?" indicate that the pace of digital transformation of public administration in Ukraine, according to respondents, currently does not correspond to existing opportunities and the European level. are at a low level. But they can be improved by overcoming the main problems that hinder the creation of e-government at the regional level, Graphic 7.

The assessment was based on the following responses of respondents:

1. completely satisfied.
2. rather dissatisfied.
3. rather satisfied.
4. completely dissatisfied.

Graphic 7 - Distribution of answers to the generalized question "How satisfied are you with the current level of representation of the sphere of public administration of digital technologies?"



Source: author's contribution