

THE IMPACT OF DIGITALIZATION AND E-GOVERNANCE ON TRANSFORMATION OF STATE MANAGEMENT MECHANISMS OF THE REGIONAL DEVELOPMENT

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ABSTRACT

In the article, theoretical aspects of transformation of existing state management mechanisms of the regional development within digitalization and e-governance of the economy and society are researched. Priority directions to ensure effective state management mechanisms of the regional development in the conditions of the digital economy formation are substantiated. Definition of the concept of “digital transformation of state management mechanisms of the regional development” is proposed. Problems of transformation of regional management mechanisms under the digitalization impact are identified. Priority directions to carry out digital technologies by forming state management mechanisms of the regional development are considered, depending on the stages by formation of the digital society and potential of the regional digitalization. Current state of the regional digital transformation is analyzed. Formation of regional mechanisms management within digital transformations is proposed, architecture of the mechanism and results of its implementation are considered.

Keywords: *State Administration, E-Governance, Electronic Services, Mechanism, Region, Regional Administration, Digital Economy, Digital Technologies, Digitalization, Nation Security.*

1. INTRODUCTION

Modern trends in development of state administration mechanisms provide for foundations to implement the digital economy in all spheres of public life and to create conditions to achieve global sustainable development goals. Currently, digital transformations of the state administration system are a priority area by countering global threats to the national security of countries and adapting to conditions of increased socio-economic risks. Spread of terms “digital government”, “digitalization”, “e-government” is a trend of political and management discourse of this century.

However, digitalization of state administration on the global scale is uneven, depending on the potential capacity of the country, its authorities and the public, regional specifics to implement and perceive changes, which actualizes the issue of improving existing mechanisms of state administration at the regional level in the context of sustainable regional development.

Hypothesis: the introduction of digital technologies into public administration mechanisms at the regional level will contribute to increasing the efficiency of management processes, improving interaction between state bodies and the public. This will ensure a more adaptive and transparent



management system, which will ultimately lead to stimulating the socio-economic development of regions and ensuring national security.

Justifying the choice of the research topic and the main problem, it is appropriate to note that in the modern world, digitalization and the development of e-governance are becoming key factors that determine the competitiveness of regions. The growing role of digital technologies in management and economy requires a rethinking of traditional mechanisms of public administration, in particular at the regional level. Digitalization offers new tools for optimizing management processes, increasing transparency and improving interaction between state bodies and citizens. Given that traditional management models often do not meet the requirements of the modern digital environment, this study is aimed at proving the need for adaptation of state structures to new conditions caused by digitalization.

2. LITERATURE REVIEW

Theoretical and applied aspects of the impact of digital technologies on state and regional administration are considered in scientific works of domestic and foreign scientists.

The authors [1; 2] analyze peculiarities of formation of information and analytical support mechanisms for local state administrations, and also propose constitutional and legal mechanisms to ensure rights of citizens to participate in local state administration.

Within the framework of studies [3; 4], practical aspects of managing problems of competing interests of different regions in establishing boundaries of neighboring urban territories were analyzed, as well as development of rural areas and peculiarities of interaction with administration were examined.

Scientists [5; 6] consider problems of the impact of liberal policies on political decisions based on civil status in the Northeastern region, and the authors have proposed state management mechanisms to develop digital technologies in current conditions.

The purpose of research [7] is study of the environmental local state policy and development of smart cities. The authors evaluated the reality of municipalities in the neighborhood of Rio de Janeiro using the multi-criteria analysis.

The authors [8; 9] analyzed characteristics of federalism, fiscal policy and judicial practice of Italy between the state and regions, and also outlined

conceptual principles on regulating state policy of the public-private partnership development.

The basis of research [10; 11] is the analysis of the state policy of the country with occupied regions regarding internally displaced persons. The scientists analyzed the genesis of the judicial system in the public policy based on archival data and compared it with modern trends in state administration.

Articles [12; 13] emphasize study of the state policy and local sustainability, analyze the system of the active labor policy between the state and regions.

Most of the leading researchers involved in implementation of digital transformations in the state administration system determine fundamental impact of digitalization on development of territorial socio-economic systems, changes in organizational relationships at regional and municipal management. However, peculiarities of formation of state administration mechanisms at the regional level in the conditions of digitalization, considering differentiation in the regional development and peculiarities of the powers decentralization policy require further study and specification.

The purpose of the article is to study theoretical and practical foundations of transformation of state management mechanisms at the regional level by active implementation of digital technologies and e-governance.

The limitations of this study include: difficulties in obtaining up-to-date statistical data, reports or studies on the impact of digitalization and e-government on public administration mechanisms; assessment of the impact of digitalization and e-government can be subjective, as different researchers have different approaches to data analysis and interpretation of results; the rapid evolution of digital technologies and e-government can lead to rapid obsolescence of the information used in the study.

3. METHODOLOGY

The research is based on a systemic approach. The authors used general scientific and specific research methods. Methods of content analysis and systematization - generalization of theoretical aspects of transformation of existing mechanisms of state management of regional development in the context of digitalization of the economy and society. Methods of induction and deduction - substantiation of priority directions for ensuring the effectiveness of mechanisms of state management of regional development in the conditions of the formation of a digital economy. Institutional method -

determination of problems of transformation of regional management mechanisms under the influence of digitalization. Parametric and generalization methods - analysis of priority directions for the implementation of digital technologies in the process of formation of mechanisms of state management of regional development depending on the stages of the formation of a digital society and the regional potential of digitalization. Statistical and graphic methods - analysis and visualization of the current state and development trends of digitization processes in Ukraine and EU countries. Grouping and abstracting methods - analysis of the architecture of the regional management mechanism in the field of digital transformations and the results of its implementation.

4. RESULTS

Digital technologies by implementing state management mechanisms of the regional development compared to traditional models of performance of state-management functions are characterized by radical transformations. Due to digitalization, the state government focuses both on changing the ways of implementing state management of the regional development, and on changing state apparatus values, relying on openness and public involvement as an element of the mechanism. This was emphasized in 2017 by the Council of Europe by adopting a set of recommendations on reforms in the e-government sphere, noting the priority both of information technologies, and relevance of their combination with organizational changes and new skills in the context of improving public services, democratic processes and public politicians.

In the conditions of the digital economy formation, effective mechanisms are related to compliance with the policy of openness, which is ensured at the regional level in the following directions:

- providing the population with reliable and complete information about activities of state

authorities based on accountability and access to programs on social and economic development of society;

- formation of the feedback system between representatives of authorities and the public when making managerial decisions;

- development of a network of electronic resources for citizens to obtain reliable information and to provide services.

Thus, digital technologies and digital environment formation to implement state administration mechanisms create new opportunities for citizens and regional organizations, and transparency and available information stimulate regional socio-economic development and innovative activity of institutions of the public sector. The above provides for solving a number of tasks as follows:

- reducing the need for financial and labor resources to ensure effective communications between government departments, as well as local state authorities and the population;

- improvement of the services quality provided by local government institutions to the population;

- time reduction to submit administrative services to citizens, improvement of interaction between individuals, legal entities and executive authorities of the region;

- improved interaction between state authorities and representatives of local self-government;

- reduction of administrative burden on state institutions.

Under digital transformation of state management mechanisms of the regional development, it is proposed to understand a qualitative change based digitalization content of state regional management and its separate functions and procedures, stages of management cycle, a set of tools for the policy implementation of sustainable socio-economic development of the region. The goal of digital transformation of state administration mechanisms at the regional level is to improve the performance quality of various state functions.

Main indicators of the regional digital transformation of Ukraine in 2022 should be considered (Fig. 1).

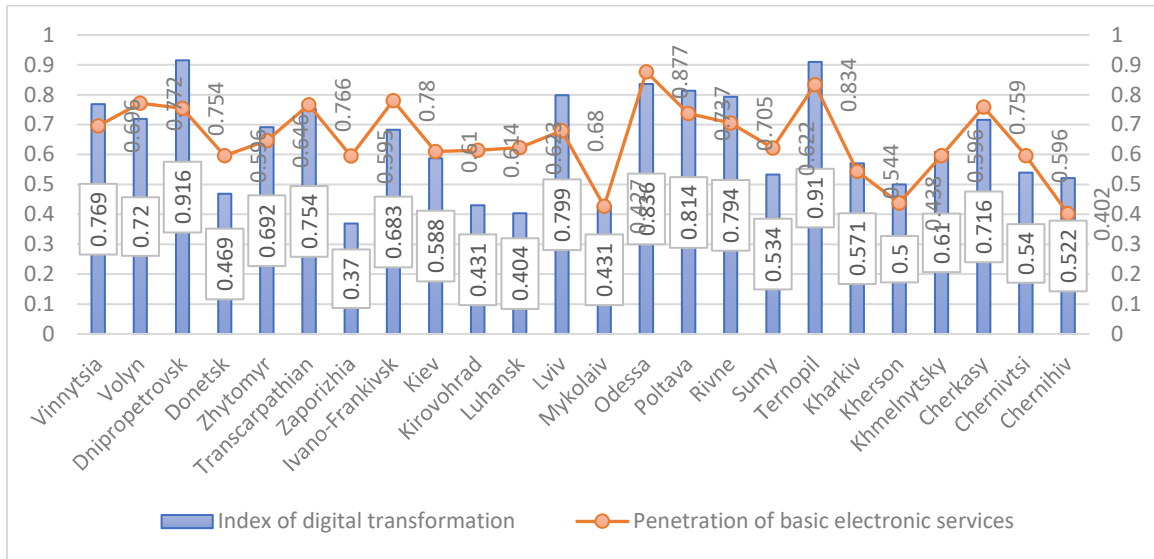
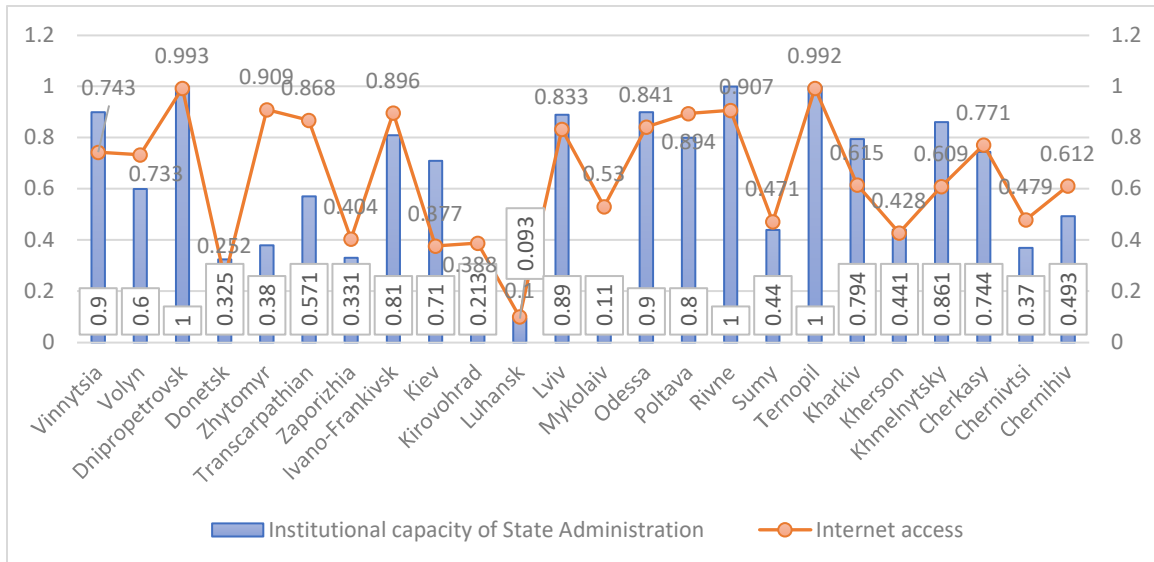


Figure 1: Digital transformation index and sub-index of introducing basic electronic services by region

Source: [14]

Dnipropetrovsk (0.916), Ternopil (0.91), Odessa (0.836), Poltava (0.814), and Lviv (0.799) regions take leading positions in the general digital transformation index. Zaporizhzhia (0.37), Luhansk (0.404), Kirovohrad (0.431), Mykolaiv (0.431) and Kherson (0.5) regions have the lowest indicators of digital transformation.

The Digital transformation index of regions includes the following sub-indices: penetration of basic electronic services, institutional capacity, access to the Internet, development of Administrative services centers (TsNAPs), “paperless” mode, digital education, business card of the region (Fig. 2).



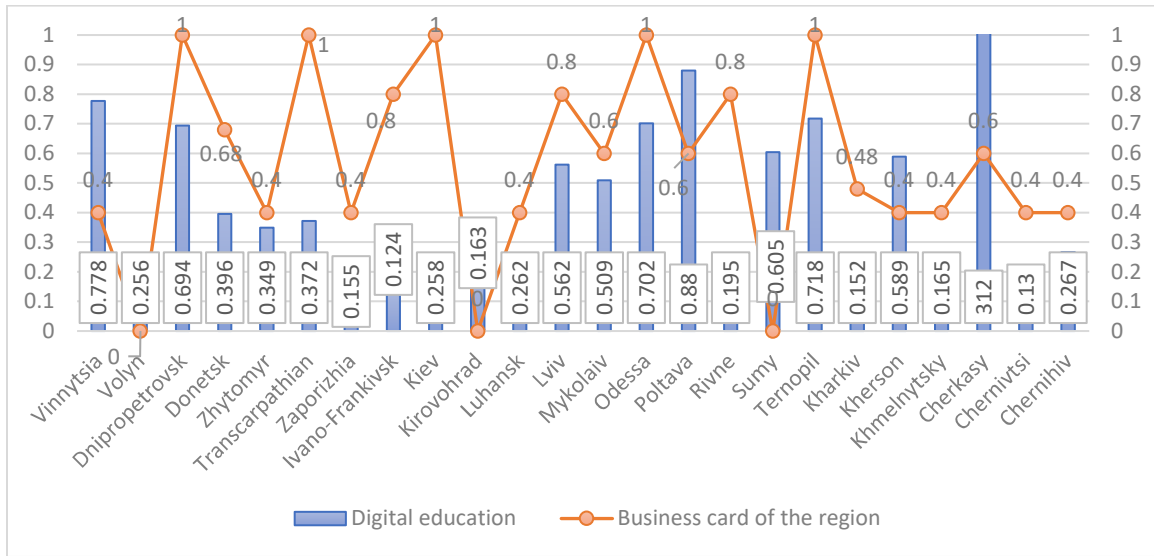


Figure 2: Development of innovative ecosystems in Europe

Source: [14]

Deserve significant attention are "Diya.Centers", which are a powerful revolutionary solution that provides a "single window" model and allows

citizens to receive services in the community and expands the availability of digital services (Fig. 3).



Figure 3: Cartographic analysis of the Diya Centers of Ukraine

Source: <https://center.diia.gov.ua/mapa-centriv-so-pracuut-pid-cas-vijni-2>

According to the results of the analysis of the level of satisfaction of visitors with the quality of administrative services in the centers, high indicators

can be observed, demonstrating more than 80% of satisfied community residents in various regions of Ukraine (Fig. 4).

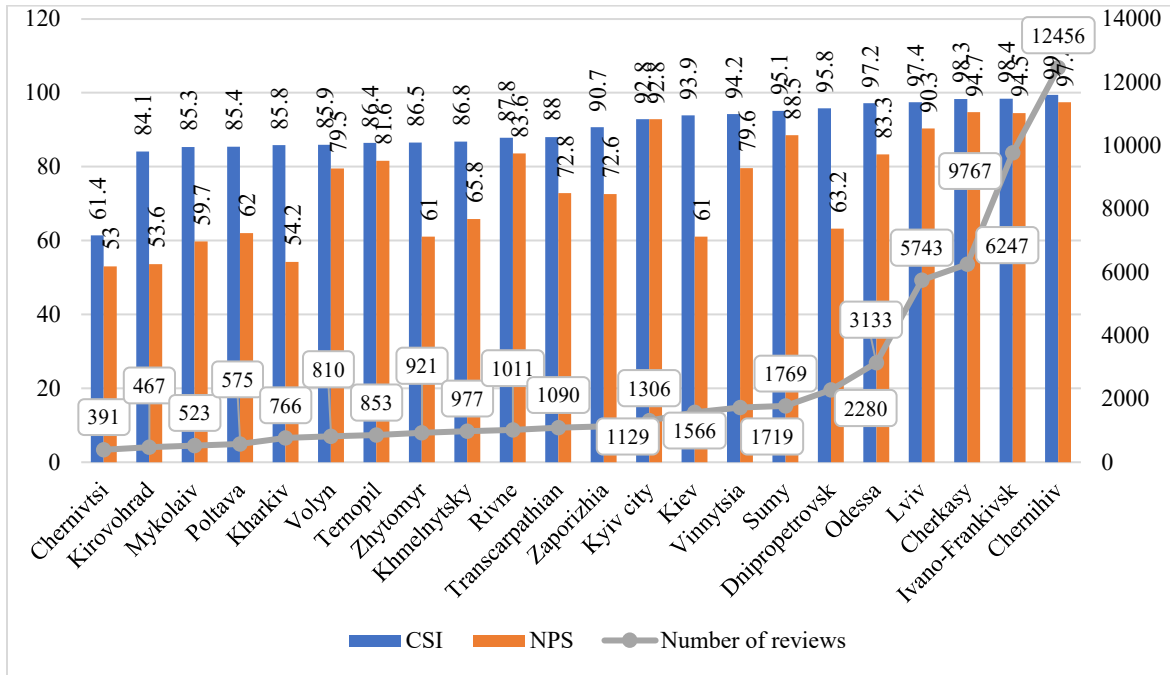


Figure 4: Results of assessing the level of satisfaction of visitors with the quality of administrative services in the centers, 2024

Source: <https://center.diia.gov.ua/dasbord-iz-rezultatami-ocinki-rivna-zadovolenosti-vidviduvaciv-akistu-adminposlug-v-centrah>

A key aspect of the digital transformation of communities is the integration of electronic document management into the work of local government bodies. However, in rural areas of Ukraine, serious challenges are observed in its implementation, which arise due to technical shortcomings and insufficient preparation of employees for such changes. These difficulties require active intervention by the state and the creation of specialized training programs for officials to ensure the effective implementation of electronic document management and increase the level of transparency and effectiveness in local government.

In order to address the personnel challenges in local government bodies and strengthen their organizational capacity to implement digital projects, the Ministry of Digital Transformation has introduced a new role of CDTOs - deputies responsible for digital transformation and development. Initially, these positions appeared in ministries and regional state administrations, but now their role is expanding to city, village and settlement councils. The role of CDTO includes not

only technical aspects, such as the development and implementation of digital solutions in communities, but also focuses on the comprehensive development of local communities, improving interaction with residents and increasing economic potential by introducing digital technologies into various areas of community life.

Ukraine became the first country in the world to introduce a position aimed at training specialists capable of implementing innovative digital solutions on the ground, and to support those involved in digitalization in communities, the CDTO Campus educational project was initiated.

In 2024, the Ministry of Digital Transformation introduced a pilot project of the Digital Transformation Index of Territorial Communities of Ukraine. The calculation of the Digital Transformation Index of Territorial Communities is based on tracking the level of digitalization of communities, digital skills of the community population, the state of digital infrastructure in the community, the level of digitalization of public services, and the digital transformation of the local government body (Fig. 5).

and proved reasonableness of actions regarding public functions performed.

Considerable attention is also paid to the issues of digital transformation in the EU countries. The

overall maturity of e-government of European countries and the score for each country according to the DESI indicator Digital public services for citizens is presented in Figure 6.

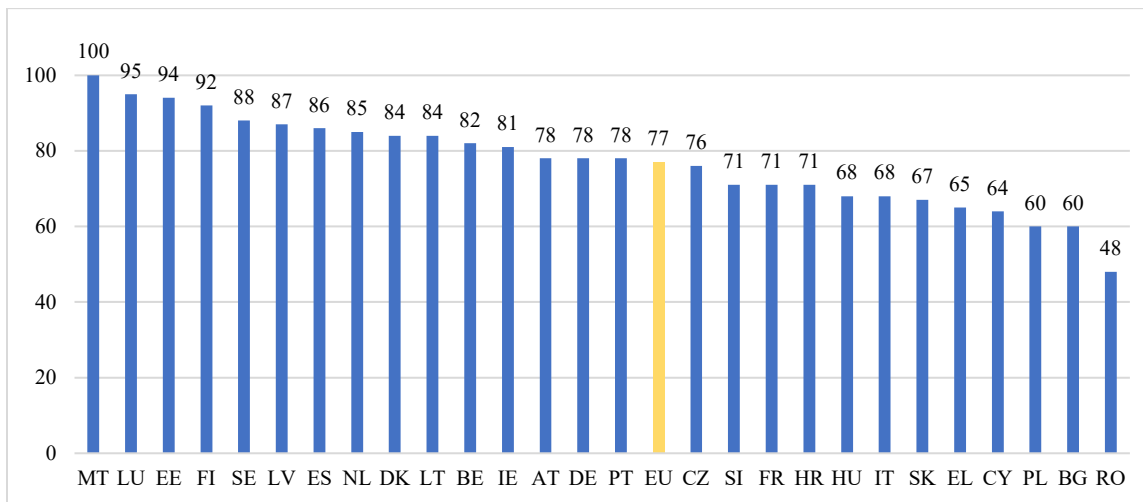
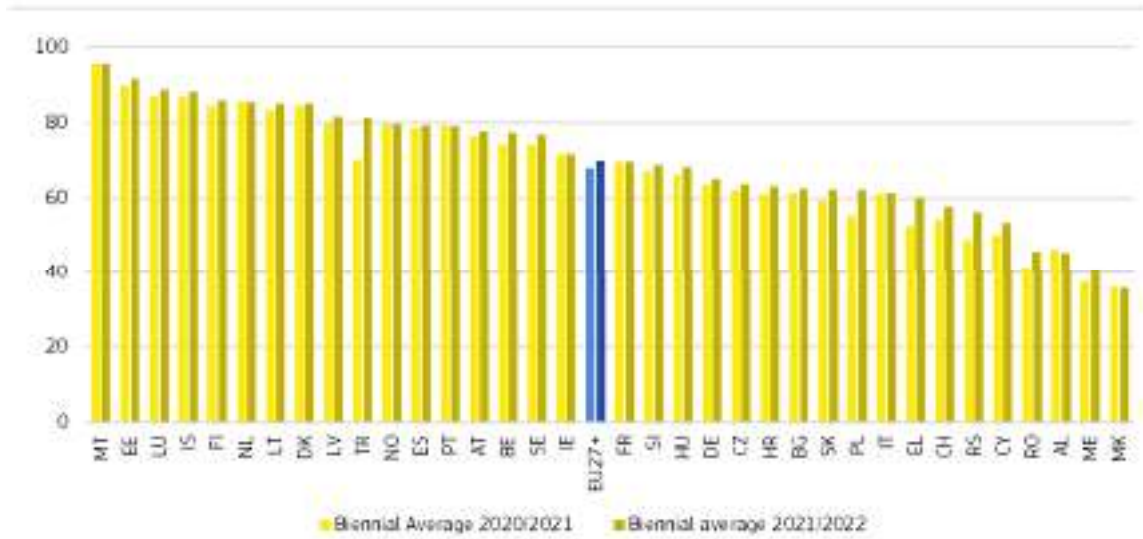


Figure 6: The overall maturity of e-government of European countries and the score for each country according to the DESI indicator Digital public services for citizens

Source: <https://ec.europa.eu/newsroom/dae/redirection/document/98708>

Mechanisms of regional management rely on the entire ecosystem, namely governmental and non-governmental institutions, enterprises, public associations, which are involved in digital data exchange and receive services by interacting with authorities. Thus, digitalization of public administration forms new relations between governments and the public, promoting participation

of citizens by carrying out state administration mechanisms. As a consequence, a new philosophy of government-society relations is formed.

Implementation of digital technologies by forming state management mechanisms of the regional development, considering the existing digital potential of the region, is carried out in the following directions (Fig. 7).

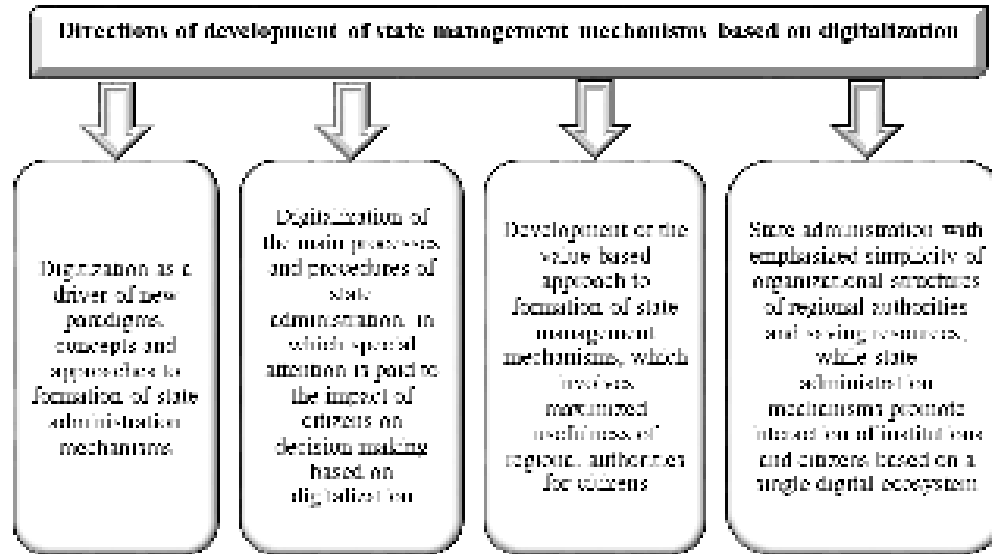


Figure 7: Directions of development of state management mechanisms based on digitalization

Source: developed by the authors

In this context, digital transformation and implementation of state administration mechanisms is based on the following principles, which should ensure effective managerial decisions and proactivity of public services providing:

- digitalization of the economy and social sphere of the region;
- comprehensive approach to solve problematic situations of individuals and legal entities based on digital services;
- multi-channel interaction between subjects and objects of the regional state system;

- limited use of paper media in the regional management system and by providing public services.

Considering the above, formation of the regional management mechanism in digital transformations deserves special attention, which allows shifting the emphasis from the state level to the inter-municipal and regional level, and is one of the important directions of the regional development policy (Fig. 8).

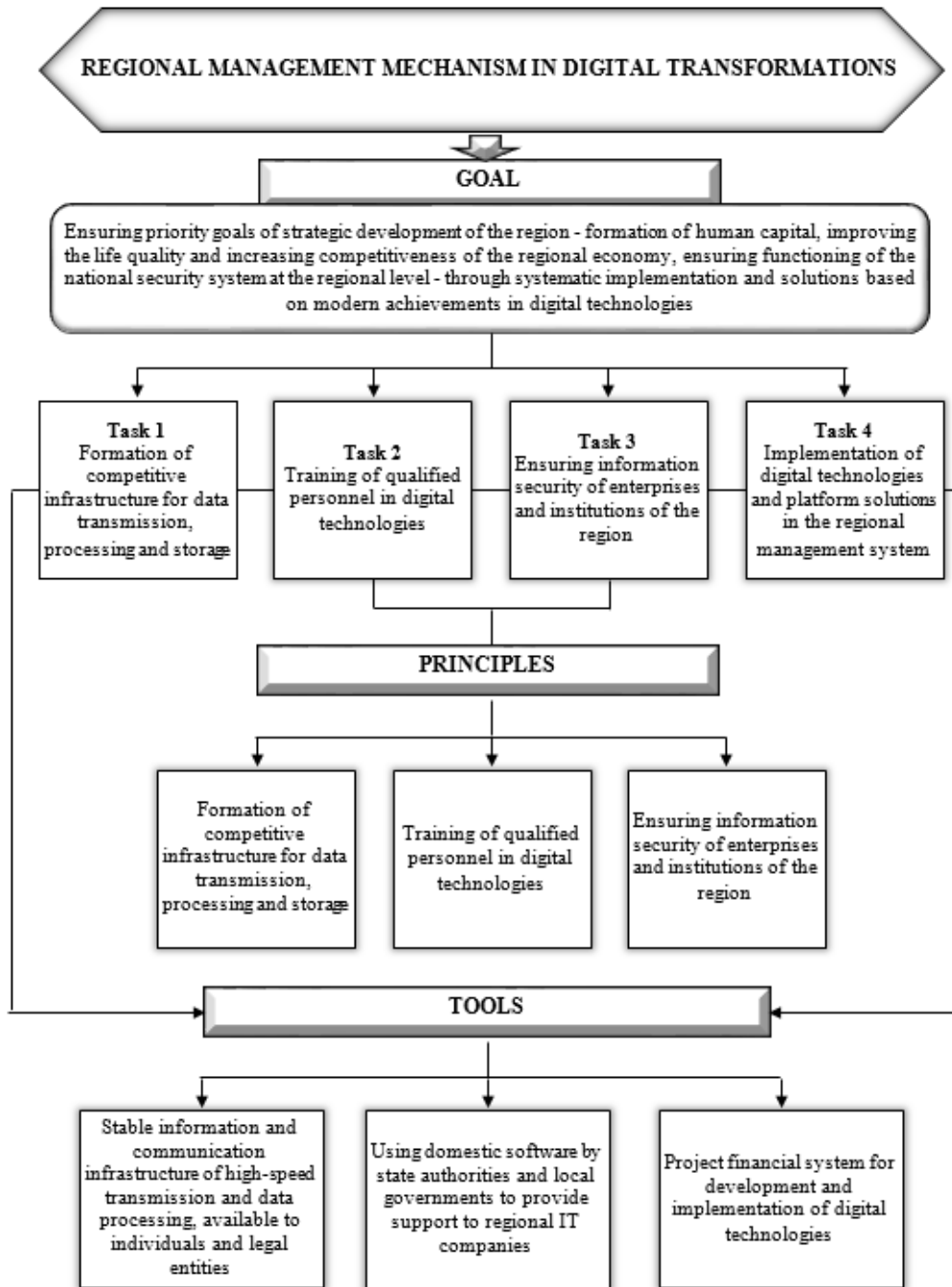


Figure 8: Architecture of the regional management mechanism in digital transformations

Source: developed by the authors

Despite potential use of digital technologies in state administration, internal administrative processes do not fully utilize all advantages of the digital approach in managing the region. Researchers indicate the main problems of transformation of regional management mechanisms within digitalization as follows:

- lack of a single strategy on reforming that would unite all levels of government and ensure optimal integration of interdepartmental interaction at one level;
- imperfect connection between digital reforms and changes in the management system based on openness and transparency;

- significant differentiation between implementation of digital technologies in state administration in different regions and territorial communities, difficult digitalization of border and frontline communities;

- differences in the achieved stage of the e-government development between different types of services and authorities;

- lack of effective system to monitor and evaluate implementation of digital technologies in state administration and local self-government;

- insufficient digitization by state administration with a perfect regulatory and legal framework.

Introduction of the specified mechanism is important to accelerate evolution of regional institutional systems. The impact of digital technologies on the potential of regional governance is influenced by quality of existing institutions, which means possible structuring of rules, powers and resources as to enable representatives of state authorities and local self-government to carry out actions meeting public needs. In the future, available wide access to shared information data will contribute to citizens' ability to seek accountable local authorities

At the regional level, it is expedient to develop cooperation between participants of the state administration system, to initiate and implement inter-municipal projects in development of smart solutions. Thus, at the regional level, it is necessary to form trajectories of digital development of the links of the state administration system and relevant territorial entities. Relevant expert councils and strategic development councils should foresee this as part of the strategy of the regional socio-economic development.

Implementation of regional management mechanisms in digital transformations requires compliance with the following stages:

- 1) Use of tools adapted to information collection, processing and storage systems of state institutions;

- 2) Implementation of technologies contributing to coordinated processing and storage systems of decentralized data at state institutions;

- 3) Stimulated use of digital platforms ensuring accountability of regional authorities to the public.

Using the feedback principle when building mechanisms for the regional management of digitalization processes will provide opportunities for citizens for direct interaction with regional authorities making a civil society a stakeholder in managing state data storage and processing systems.

5. DISCUSSION

Supporting scientists Strnad Michal [15] and Zhukovska A. et. al. [16], it is advisable to pay attention to their research, which examines how regional policy affects EU regional support and current trends in this direction. Scientists have analyzed financial and legal instruments to promote the state's sustainable development policy.

Noting the relevance of research [17-19], we draw attention to the impact of digitalization on economic systems in the context of ensuring economic security, the features of public management of regional development.

Considering relevant studies [20-21], it is advisable to pay attention to the analysis of capabilities of governments, study state administration mechanisms and the corresponding regulatory policy, as well as how the regional state innovation is being implemented in peripheral regions to promote the green policy.

Of practical importance are studies [22-23], which analyzed contractual relations between the state and regions in France, examined the role of the state and regions in the implementation of green policy in the era of high technology, and also examined the role of speech cycles in policy mutation. Also, scientific works [24-25] are devoted to the different development of regions and the peculiarities of the transformation of economic systems.

Unlike existing studies, this article focuses on detailing the impact of digitalization on regional governance in the context of decentralization and the specifics of the development of different territories. The authors' approach is distinguished by taking into account regional characteristics and variations in the implementation of decentralization policies under the influence of digitalization.

6. CONCLUSIONS

Due to implementation of the specified mechanism, the following results could be obtained:

- creation of modern information infrastructure in the region based on wide access to public services for individuals and legal entities;

- increased work efficiency of executive authorities and local self-government bodies by ensuring effective interaction in decision-making;

- transformation of priority sectors of the economy and social sphere of the region, including the health care system, education, industry, agriculture, transport and energy infrastructure, communal economy etc.

According to research from the Index of Digital Transformation of Regions, 77% of territorial

communities in Ukraine have implemented electronic appeal tools, while 66.1% utilize electronic petition tools. However, the adoption of electronic consultation options for online communication between government representatives and community residents remains low, with only 11.1% of communities implementing such opportunities. The highest rates of e-democracy tool implementation are observed in the Ternopil, Vinnytsia, and Volyn regions, respectively, within their territorial communities.

Using digital technologies by local state authorities and local self-government bodies increases motivation and is an effective tool to improve the quality of services provided to residents of the region. In addition, digitalization and transition to active use of digital data will contribute to implementation of organizational, legal, and financial mechanisms of state administration, since transparent and available information form a new social paradigm and contribute to strengthening communications between the state and the public by reducing information asymmetry.

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