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The cluster approach to the digitalization of public governance in the regional strategy: international practice and Ukrainian realities

Abstract

Digitalization of all spheres of life, from the business sector to public administration, has now become a common trend in the development of Ukrainian society, one of the main drivers of the socio-economic development of the country. The *purpose of the article* is to substantiate the feasibility of the cluster approach to the digitalization of public administration in the regional strategy, taking into account international best practices. *Methodology*. The theoretical and methodological basis of the study are the provisions of institutional theory, in particular, the paradigm of evolutionary development, digital economy, regional economy, clustering theory, the concept of strategic management, decentralization, public administration. In the process of research the following general scientific methods were used: analysis and synthesis (for the analysis of scientific schools of development of cluster theories, generalization of existing theoretical approaches and provisions, scientific developments on public administration, regional strategy, management of cluster development and clarification of terminological apparatus); classification and systematic approach (identification of industry specifics of cluster structures development in different countries; determination of peculiarities of IT-clusters creation on the basis of analysis of regional development strategies); comparison and structural-logical generalization (determination of peculiarities of international practice of cluster development and possibilities of its use in Ukraine; elaboration of a number of measures on formation of regional infrastructure of digital electronic administrative services). *Results*. The study revealed the sectoral focus of cluster structures in European countries. The features of the implementation of cluster policy and the key objectives of support for the development of cluster structures in a number of EU countries were identified. It is proved that the clusterization of the national economy, cluster policies and initiatives in the last decade have become important elements of strategies and concepts of innovative and sustainable development of European countries. Based on the analysis and synthesis of sectoral trends in the creation of cluster structures in European countries, it was found that the national characteristics of existing cluster policy determine the direction of cluster initiatives; strategic cluster alternatives are determined by national characteristics and the adopted cluster concept; to assess the feasibility of the cluster strategy of development of the territory it is necessary to correlate the level of investment potential and investment activity; methodological principles of formation of a national cluster strategy need to be refined and clarified, taking into account the current challenges. *Practical implications*. Based on the generalization of best international practices, it was found that to increase the competitiveness of the regional economy it is necessary to create cluster structures in the IT industry as an effective form of partnership. However, the study showed that the current legislation of Ukraine does not pay proper attention to the formation and functioning of clusters, including in the IT sector. To this end, it is necessary to make changes and additions to the Concept of creating clusters in Ukraine, the Regional Development Strategy until 2027 and action plans for their implementation in 2021–2023 years to create cluster structures as a business entity. It is advisable to develop and approve the Concept of Cluster Policy and

Keywords

National economy, regional economy, clustering, cluster approach, regional cluster policy, IT-cluster, a form of partnership, model of cooperation, digitalization, public administration, regional strategy, decentralization, stakeholders, globalization, international practice, sustainable development

JEL: H70, L86, R58

the Target Program "The formation and development of clusters in the regions of Ukraine for 2021–2023 years", which should provide for the creation of IT-clusters as a special type of associations of enterprises in different fields, taking into account regional specificity. *Value/originality*. Author's approach to improving the legislative framework for the development of IT clusters in the regions of Ukraine, taking into account international best practices.

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1 Introduction

Digitalization of all spheres of life, from the business sector to public administration, has now become a common trend in the development of Ukrainian society, one of the main drivers of the socio-economic development of the country.

According to the World Economic Forum in Davos, only 25 countries are ready for the fourth industrial revolution. These countries already account for 75% of the added value of global industrial production. The WEF analysts put Ukraine in the group of Eurasian countries that have a certain industrial base, but weak production engines.

For Ukraine, the path of digital transformation is a necessary way to reduce the gap in economic performance with other countries. Currently, the regions of Ukraine are paying considerable attention to solving the problems of digitalization of public administration in the strategy for socio-economic development of territories and the creation of appropriate cluster structures in the IT-industry.

It should be noted that cluster formations are now recognized as one of the most effective production systems and forms of network partnerships in the era of globalization, digitalization and the knowledge economy. At the same time, globalization processes strengthen the role of clusters in the economies of different countries and contribute to their further formation and functioning. These structures have become a kind of "new wave" that sets the modern vector for the development of the global ecosystem and logistics networks.

At the same time, globalization opens up real opportunities for most international companies to move capital freely and quickly, facilitates access to the necessary knowledge, provides a choice of location depending on the convenient geographical location, availability of transport and logistics infrastructure, access to raw materials, proximity to markets, etc.

International practice shows that one-third of companies operating within clusters tend to increase employment steadily. Innovative industries also develop faster in regions with developed clusters. The successful experience of Austria, Germany, France, Finland, the Netherlands and other countries shows the prospects of automation and digitalization of industry through the creation of digital regional and interregional clusters (Yurchak, et al., 2020).

It should be emphasized that regions with more developed clusters demonstrate a high level of profitability. Thus, clustering is a powerful tool and opportunity for structural institutional changes in the national and regional economy. It is a strategic priority for the implementation of strategies of smart specialization and the concept of sustainable development of the regions of Ukraine in modern conditions. Consider this on the example of the Dnipropetrovsk region.

2 Literature review and problem statement

The problems of clustering of the regional economy, development of cluster structures, formation of cluster policy are actively considered by economists. Cluster as an economic category reflecting new trends in the formation of competitive structures in the world economy was introduced into scientific turnover by M. Porter (1998). He conducted a study of spatial competitiveness in the context of the world economy and substantiated the historical and intellectual prerequisites of cluster theory.

In modern conditions, the application of the cluster approach is considered one of the most effective mechanisms of structural development of the economy (Pyatinkin, Bykova, 2008). The cluster approach is based on the concept of "cluster", which is a network structure of geographically adjacent interconnected companies (suppliers, producers and buyers) and related organizations (educational institutions, state and regional authorities, infrastructure companies) that work in a particular area and complement each other (Yasheva, 2009).

Cluster as a conceptual device and market organizational and structural institution has a broader meaning because, in addition to production and technological characteristics, it concentrates socio-economic, institutional and cultural-mental parameters that give this formation high potential for mobility, stability and high competitiveness. Clusters are groups of interconnected companies in a particular territory, their vertical and horizontal ties strengthen social relations and create stably integrated networks (Egorov, Chigarkina, 2006).

Some foreign scholars (Devlin & Bleackley, 1988; Marshall, 1993; Swann & Preveser, 1996; Feser, 1998; Bergman & Feser, 1999; Feldman & Audretsch, 1999; Dussauge, Garrette & Mitchell, 2000; Pentikäinen & Luukkainen, 2000; Sölvell,

Lindqvist & Ketels, 2003) argue that clustering is a process that consolidates disparate elements of the social system at the local level and reveals the internal regional potential of vertical and horizontal integration. Thus, the regional cluster is recognized as a spatial economic form that emerged in the informal association of several organizations, which achieves the necessary concentration of production, management, information infrastructure to ensure a high level of competitiveness in the regional product (Prokopenko, 2016).

The cluster model of national economic development is a conceptual approach that involves the use of clusters as strategic elements of the modern market economy, allowing to realize the country's competitive advantages in the international economic space (Pankova & Potapenko, 2018).

S. Sokolenko (2004) and M. Voynarenko (2018) made a significant contribution to the development of the clustering system in Ukraine. They considered the cluster approach from the perspective of institutionalism, justified and implemented cluster models in the regional economy. L. Ryneyska (2016) studied the role of clusters in the development of national and regional economies (e.g., EU economies), which are components of the modern global economic space.

In recent decades, a number of leading domestic scientists (Heyets, 2008; Zahorskyi, Kyzym & Khaustova, 2010; Tishchenko, 2010; Kyzym, 2011; Mamonova, Kuts & Makarenko et al., 2013; Komar, 2014; Oskolskyy, 2014; Nochvina, 2016; Voynarenko & Dubnytskyi et al., 2019; Bilyk, 2019; Shashyna, 2020; Tsyplitska, 2021) have been conducting research on cluster issues, considering the cluster as fundamentally new institutions of the economic system, which appear under the influence of the institutional environment and the development of global competition.

It is worth noting that changes in the organizational aspects of the functioning of business entities associated with the digital transformation have recently been actively discussed in academic circles. This issue is being investigated by O. Amosha, H. Dzwigol, A. Kwilinski, V. Liashenko, R. Miskiewicz, D. Tapscott, O. Vyshnevskyi, and other researchers.

However, despite the wide range of research on the subject, the methodological issues of clustering public administration in the regional strategy of Ukraine, taking into account international best practices in accordance with modern challenges associated with smart specialization and digitalization of organizational and management processes remain underdeveloped both scientifically and practically.

3 Research methodology and purpose of the article

The theoretical and methodological basis of the study are the provisions of institutional theory, in particular, the paradigm of evolutionary development, digital economy, regional economy, clustering theory, the concept of strategic management, decentralization, public administration.

The following general scientific methods were used in the research process: *analysis and synthesis* (to analyze scientific schools of development of cluster theories, generalization of existing theoretical approaches and provisions, scientific developments on public administration, regional strategy, management of cluster development, clarification of terminological apparatus); *classification and system approach* (to identify the industry specifics of the development of cluster structures in different countries; determine the peculiarities of IT clusters based on the analysis of regional development strategies); *comparison, structural and logical generalization* (to determine the features of international practices of cluster development and opportunities for its use in Ukraine; development of a series of measures to form a regional infrastructure of digital electronic administrative services).

In view of this, the ***purpose of this paper*** is to justify the feasibility of the cluster approach to the digitalization of public administration in the regional strategy, taking into account international best practices.

4 Empirical results and discussion

According to the DESI 2020 (The Digital Economy and Society Index), which tracks the evolution of EU member states in digital competitiveness, the level of digitalization has increased over the past year in all EU member states. The leaders remain: Finland, Sweden and Denmark. The last places: Romania, Greece, Bulgaria (Figure 1).

World Bank analysts classify national economies into four income categories based on GNI per capita (in current U.S. dollars): high income, upper middle income, lower middle income, and low income. Ukraine falls into the penultimate category (Table 1).

Development Strategy of the Dnipropetrovsk region until 2027, approved by the decision of the Dnipropetrovsk regional council from 07.08.2020 № 624-24/VII (hereinafter – the Strategy) provides a smart specialization and cluster model of economic development of the region. Clusters are recognized as one of the mechanisms for implementing priority areas of innovation to ensure the development of local communities, for the implementation of seven clusters in major sectors of the economy, including the IT-cluster under Strategic Goal 3. Provision of quality living conditions.

This corresponds to the main provisions of the European Cluster Memorandum (2008) and the Vienna Cluster Manifesto (2012), which state that cluster development is a key mechanism for increasing the competitiveness of priority national programs of EU

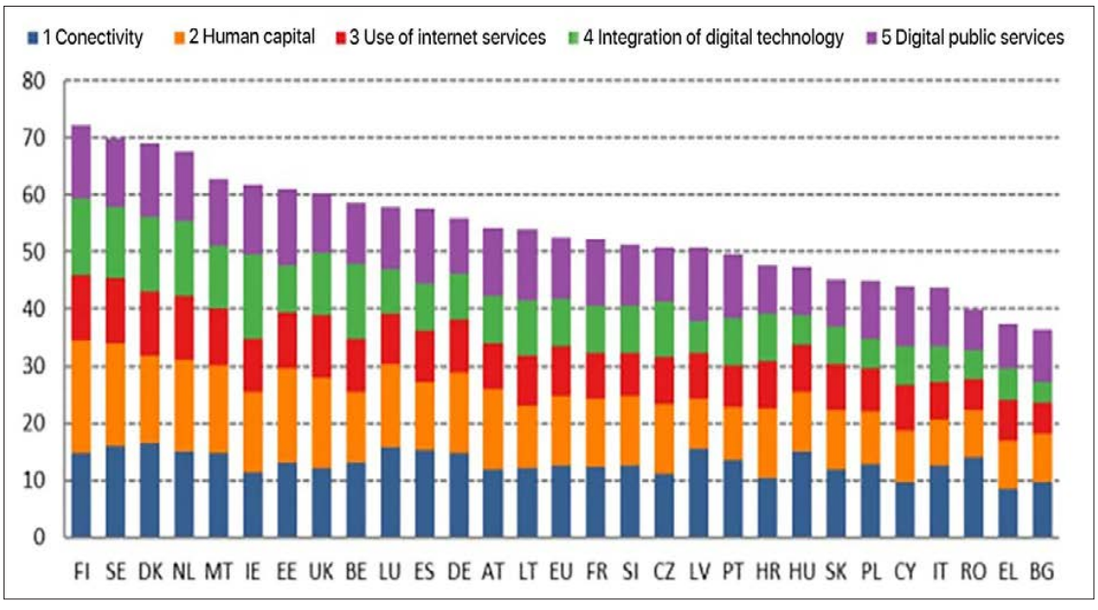

FIGURE 1 The Digital Economy and Society Index for 2020
Source: The Digital Economy and Society Index (DESI)

TABLE 1 Classification of Countries by Gross National Income (GNI)

Low income ***(US$ 1,005 or less)***	**Below-average income** ***(US$ 1,006-3,955)***	**Above-average income** ***(US$ 3,956-12,235)***	**High income** ***(US$ 12,236 or more)***
Ethiopia	Armenia	Argentina	Australia
Senegal	Bangladesh	Albania	Austria
Tanzania	Cambodia	Algeria	Bahrain
Uganda	Cameroon	Azerbaijan	Belgium
	Egypt	Bosnia and Herzegovina	Canada
	El Salvador	Brazil	Chile
	Georgia	Botswana	Cyprus
	Ghana	Bulgaria	Czech Republic
	Guatemala	China	Denmark
	Honduras	Colombia	Estonia
	India	Costa Rica	Finland
	Indonesia	Croatia	France
	Jordan	Dominican Republic	Germany
	Kenya	Ecuador	Greece
	Kyrgyz Republic	Kazakhstan	Hong Kong SAR
	Moldova	Lebanon	Hungary
	Mongolia	Malaysia	Ireland
	Morocco	Mauritius	Israel
	Nigeria	Mexico	Italy
	Pakistan	Panama	Japan
	Philippines	Paraguay	Korea Republic
	Sri Lanka	Peru	Kuwait
	Tunisia	Romania	Latvia
	Ukraine	Russian Federation	Lithuania
	Viet Nam	Serbia	Netherlands
	Zambia	South Africa	New Zealand

Source: The Readiness for the Future of Production Report 2018

member states (Liashenko, Ivanov & Trushkina, 2021; Trushkina, Dzwigol & Kwilinski, 2021; Trushkina & Shyposha, 2021a; Trushkina & Shyposha, 2021).

An online survey conducted in 2018 by the European Observatory on Clusters and Industrial Change identified tools and areas of support for cluster formations in national and regional programs. These include: support for the participation of small and medium-sized businesses; support of international cluster cooperation in one sector; support of inter-industry cooperation; financing of meetings and networking (i.e. events aimed at exchange of information between people united by common professional or personal interests; building long-term trust relationships based on the social network principle); support of access to other markets; promotion of environmental efficiency; creation of qualitatively new cluster infrastructure, etc.

According to the European Commission, funding for regional and cohesion policies from 2014–2020 amounted to 351.8 billion euros, budgeted by the European Regional Development Fund and the Cohesion Fund. Poland, the Czech Republic, Spain and Italy received the largest allocation for cluster policies (mainly from the ERDF). The least developed countries received the least allocations, namely Austria, Belgium, Denmark, Finland, Ireland, Luxembourg, the Netherlands, and Sweden.

Between 2021 and 2027, the European Union's investment resources for regional policy and cohesion amount to 392 billion euros. Thanks to national co-financing, about 0.5 trillion euros will be available for financing programs in regions and EU countries.

The strongest regions and specializations receive funding of up to 1 million euros per year, with private companies, research institutes, and the public sector involved. Based on the analysis of cluster policies pursued by European governments, it can be argued that higher rates of economic prosperity are currently observed in countries where funding for cluster programs is less and regional specialization is already quite developed, namely in the UK, Luxemburg, Sweden, Belgium, Germany, France, Italy, Spain, Portugal. More active financing, greater allocation of appropriate funds are coming to relatively less developed countries, where the processes of regional specialization of clusters are active, namely Poland, Romania, Serbia, Bulgaria, Greece, Lithuania, Hungary.

However, stakeholders and annual budgets vary from one European country to another. For example, funding for the development of cluster structures in France is 144 million euros. The Polish government implements 4 cluster programs, including "Key National Cluster" and "Internationalization of Key Clusters," for which 5 million euros are allocated. Hungary has a cluster development program with 3 million euros in direct funding (cluster management organizations) and 65 million euros in indirect funding (for cluster members). Slovakia has implemented a EUR 5 million support scheme for industrial cluster organizations. In the Czech Republic, 10 million euros have been allocated for the implementation of cluster cooperation (Yurchak, et al., 2020).

Among the main sources of funding for cluster development are state budgets, company membership fees, local government funds, alternative private funds (crowdfunding, venture capital), trust funds, and NGOs.

However, despite the widespread use of the cluster approach in foreign economies, there is a serious differentiation in the principles, forms and methods of cluster policy, the degree of state regulation of cluster formations, industry advantages in the organization of clusters. Thus, the greatest influence on the implementation of cluster initiatives in the EU countries has supranational regional and industrial policy, as well as the differentiation of member countries by the level of development of the national innovation system. Japan has historically developed a system of subcontracting in corporations, small and medium-sized businesses. The U.S. is characterized by a developed venture capital market and a high role of specialized cooperation institutions. In China, foreign direct investment and free economic zones play a decisive role.

It should be noted that within the European Union cluster policy in the vast majority of countries is not an independent policy, because there are no documents regulating it. Instead, it is implemented as part of innovation, industrial or regional policy. Approximately 70% of countries consider cluster policy to be an innovation policy, 25% – to the regional one.

Most clusters operate in the field of biotechnology (in 13 European countries), the IT sector (in 10 countries), and mechanical engineering (in 9 countries). At the same time, innovative agricultural clusters successfully operate in 8 European countries (Table 2).

Analysis shows that a number of countries around the world are developing clusters through state programs to support SMEs. Where there are national cluster strategies, public authorities pay special attention to the conditions and organizational process of clustering; coordinate the activities of governing bodies at the regional and local levels for the effective development of clusters. In this case the state can act as a regulator determining the rules of interaction of all elements of the triple helix (state – business – scientific and educational institutions); guarantor of preservation and development of favorable institutional conditions for investment, innovation and development of horizontally oriented network business communities; entrepreneur, that is the owner of enterprises and a direct participant of cluster structures.

Thus, there are different approaches to clustering strategies in the world. This is due, first, to different levels of socio-economic development and the business

TABLE 2 Sectoral orientation of cluster structures in foreign countries

Country	The main types of economic activity												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Poland	+		+	+	+	+		+	+	+	+		
Hungary	+	+	+		+			+	+	+		+	+
Estonia	+				+				+				+
Romania	+	+	+		+		+			+	+	+	+
Slovakia	+	+		+	+					+	+		+
Czech Republic	+	+	+	+	+		+		+	+	+	+	+
Lithuania	+	+		+	+	+	+		+	+		+	+
Latvia	+	+					+			+	+	+	
Switzerland	+			+			+			+			
Finland	+		+		+			+	+			+	
Netherlands			+				+	+	+	+			
France			+							+			
Germany				+			+			+			
UK										+			
Denmark									+	+			
Italy			+				+						
Norway					+		+		+				

Notes: IT-sector and cybersecurity (1); smart specializations (2); agricultural sector (3); chemical industry (4); energy and eco-energy efficiency (5); metalworking (6); mechanical engineering and engineering (7); construction (8); transport (usually aviation and maritime industry) and logistics (9); biotechnology and medicine (10); tourism and recreation (11); woodworking (12); creative industry (13)

Source: compiled on the basis of the National Cluster Development Program until 2027 (Yurchak et al., 2020)

environment, institutional and cultural characteristics, and systems of state regulation. Second, foreign countries use different approaches to the definition of clusters. For example, Sweden, Portugal, the Netherlands, France, Denmark, and, partially, Great Britain initially supported clusters at the regional and national levels, while Belgium and Spain – only at the regional level. Other countries (Austria, Germany, Italy, Norway, and Finland) use cluster development measures as tools for implementing regional and innovation policies.

Currently, the development of the IT-sector is regulated in the Regional Development Strategies for 2021–2027. On the basis of their generalization on the example of 24 regions, it was found that all documents refer to the creation of clusters (industry, territorial, innovation, tourism, agro-industrial, energy, etc.). The strategies of 11 regions emphasize the feasibility of implementing the mechanism of clustering, which involves the development of the concept of regional clusters, measures of financial incentives for cluster initiatives, as well as existing clusters in the regions. And only in the documents of 7 regions it is about the application of the cluster approach (Table 3).

According to the analysis, only 5 regional development strategies indicate the need to create an IT cluster. The documents mainly use such terms as "information and communication technologies and systems" (22 regions); "digitalization" (14 regions); "digital technologies" (13 regions); "digital transformation" (11 regions); "IT technologies" (11 regions) (Table 4).

It should be noted that in the materials of the Development Strategy of Dnipropetrovsk region until 2027 there are no specific issues of e-government regulation, e-democracy and digitalization of public administration. The appropriateness of the allocation and development of the IT cluster, in particular in terms of e-government and digitalization of public administration in the draft Strategy is absolutely predictable.

For example, the European Digital Initiative EU4Digital, which aims to extend the European Union's Digital Single Market (DSM) strategy to the EU's eastern neighbors, will fund a three-year program, "EU4Digital: Supporting the Digital Economy and Society in the Eastern Partnership," in 2019–2022. The program provides support in six key areas of economic and social development: telecommunications, trust and security, e-commerce, ICT innovation, e-health and e-skills. It aims to harmonize digital markets and, as demonstrated by the Eastern Partnership Summit, brings together stakeholders such as public administrations, professional and industry associations, regulators, civil society and financial institutions.

TABLE 3 The use of conceptual and categorical apparatus
for economic clustering in the strategic documents of the regions

Region	Terms used				
	clustering	cluster approach	cluster development	cluster initiatives	cluster
Vinnytsia					+
Volhynia					+
Dnipro		+		+	+
Donetsk					+
Zhytomyr					+
Zakarpattia		+	+	+	+
Zaporizhzhia	+			+	+
Ivano-Frankivsk	+			+	+
Kropyvnytskyi	+			+	+
Kyiv	+			+	+
Luhansk		+			+
Lviv		+			+
Mykolaiv	+			+	+
Odesa	+			+	+
Poltava					+
Rivne					+
Sumy				+	+
Ternopil	+	+			+
Kharkiv	+	+			+
Kherson	+			+	+
Khmelnytskyi	+				+
Cherkasy		+			+
Chernivtsi					+
Chernihiv	+			+	+

Source: compiled by the authors on the basis of the Strategies of regional development of the regions of Ukraine for the period up to 2027

According to the RSM Strategy, the state has strategic goals to "modernize public administration, achieve cross-border interoperability, and facilitate interaction with citizens."

New technological conditions are changing managerial realities, including public administration technologies. In the leading countries of the world, the concept of Industry 4.0 and the development of digital technologies at both the government and corporate level have begun to be widely implemented in government programs and business strategies. The National Strategy for Industry 4.0 APPAU (Association of Industrial Automation of Ukraine) defines technological innovations of the next technological stage based on classic technologies 3.0+ (Figure 2).

The idea of "smart specialization" (RIS3, Research and Innovation Strategies for Smart-specialization), which has a scientific basis, has proven its effectiveness in overcoming the crisis of the global financial system, including the Eurozone, and has quickly gained popularity among European policymakers as a result. RIS3 has become part of the Europe 2020 strategy and meets all three of its principles: smart, sustainable and inclusive growth.

Having a RIS3 strategy is seen as a prerequisite for regions to receive funding from the European Structural and Investment Fund (ESIF) to create new jobs and stimulate economic growth.

The cluster approach proposed by the Draft Strategy is also in line with leading European practice in intellectual specialization. In line with European Commission policy, cluster initiatives were launched under the COSME and HORIZON2020 programs to support innovation and a unified digital environment.

The clustering of the economy is a dynamic process. The development of cluster policy and the launch of the cluster mechanism of economic growth on an innovation basis require organizational design, and its functioning – facilitation. (Borodina, 2016; Borodina, 2020; Borodina, 2021).

TABLE 4 Application of the term "IT-cluster" in the strategic documents of regional development

Region	Terms used					
	IT-technologies	IT-services	ICT & S	IT-cluster	DT	DTR
Vinnytsia						
Volhynia						
Dnipro						
Donetsk						
Zhytomyr						
Zakarpattia						
Zaporizhzhia						
Ivano-Frankivsk						
Kropyvnytskyi						
Kyiv						
Luhansk						
Lviv						
Mykolaiv						
Odesa						
Poltava						
Rivne						
Sumy						
Ternopil						
Kharkiv						
Kherson						
Khmelnytskyi						
Cherkasy						
Chernivtsi						
Chernihiv						

Notes: ICT & S – information and communication technologies and systems; DT – digital technologies; DTR – digital transformation

Source: compiled by the authors on the basis of the Strategies of regional development of the regions of Ukraine for the period up to 2027

5 Conclusions

The study found that government bodies, along with business entities, should do the following:

1. Implement solid IT infrastructure projects: (development of fixed broadband Internet infrastructure; mobile Internet infrastructure; public Wi-Fi access; cybersecurity, etc.).

2. Building soft infrastructures – identification and trust (citizen ID, mobile ID, bank ID), open data, public services (e-government), interoperability, e-commerce and e-business, livelihood, geoinformation infrastructure, blockchain infrastructure.

3. Become a customer and the first customer of innovations and digital services, which will serve as an impetus for the formation of new markets.

The formation of an IT cluster under the above-mentioned Operational Objective 3.D. Improving public administration, information society and the development of e-democracy should be based on openness, flexibility and cooperation in relations with citizens, science and business, using e-government tools to improve efficiency and effectiveness and continuously improve public services.

It should be noted that to successfully achieve this operational goal, the following tasks are suggested:

Task 3.D.1. Development of electronic government and informatization of society.

Task 3.D.2. Improving the quality of administrative services (electronic services).

Task 3.D.3. Development of a system of social communications and public relations.

The European S3 methodology requires going beyond national/regional administrative boundaries and, by focusing on a limited number of ambitious but realistic projects, continuously identifying the region's own competitive advantages over other regions and countries. At the first stage of building an IT cluster it is necessary to carry out a number of general organizational measures, which require urgent solutions and will be the basis for further construction

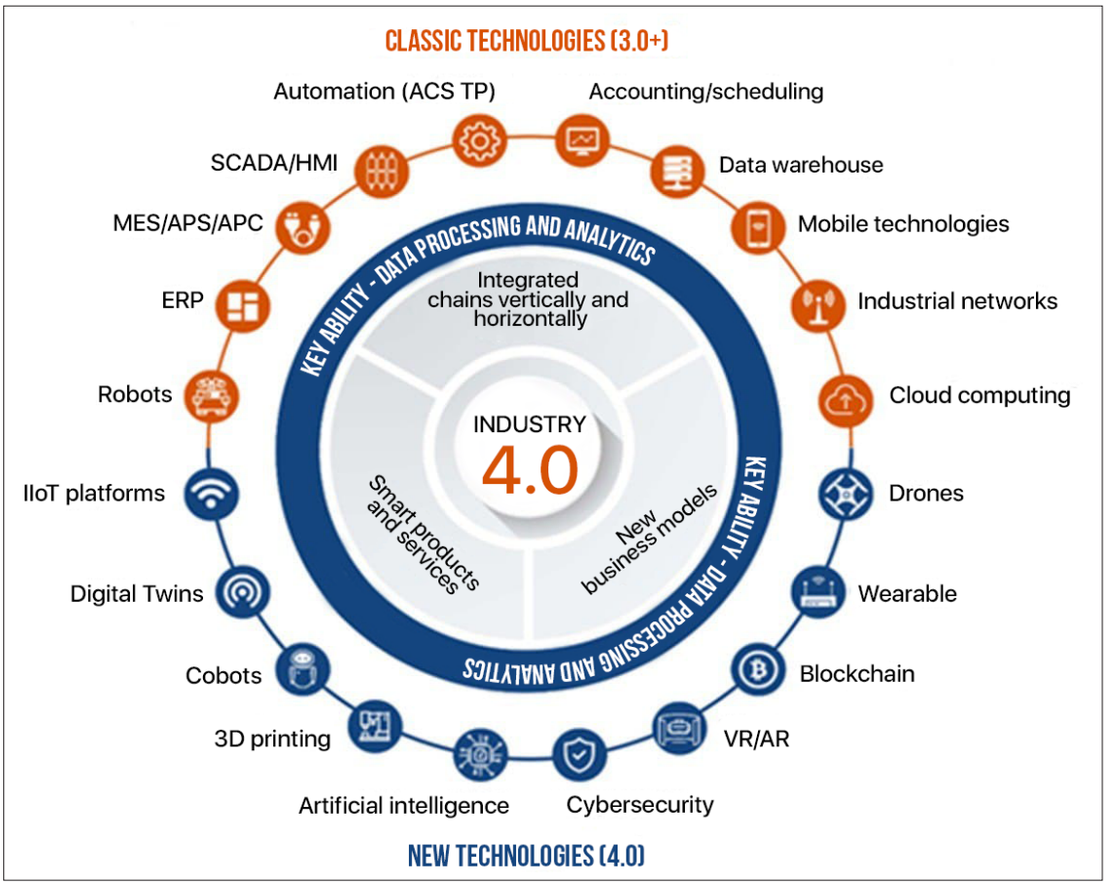

FIGURE 2 Key technologies of modern digital transformations
Source: compiled on the basis of the National Cluster Development Program until 2027 (Yurchak et al., 2020)

of the infrastructure of digital electronic administrative services in the region:

1. Given the dynamic process of creating Administrative Service Centers (ASCs), conduct their current systematization, to assess the regional potential of the IT cluster in the field of public services.

2. Analyze the list of ASCs in the Dnepropetrovsk region and determine their sufficient number for the UTC (United Territorial Community).

3. In accordance with the established list of ASCs, analyze logistical issues related to their work.

4. Given the high level of digital inequality in ICT development in the region's cities and UTCs (United Territorial Communities), analyze the possibility of providing broadband Internet access, as well as providing the necessary related services in ASCs' premises (computer services, copying, laminating, binding, etc.) to possible business structures, establish communication links, conduct preliminary consultations.

5. Consider organizing regular surveys of visitors about the quality of administrative services, analysis of comments and suggestions.

6. Develop a roadmap for the formation of the IT cluster and justify the previous concept of IT cluster in the development of e-government and digitalization of public administration.

Prospects for further research is a scientific and methodological justification of the concept of creating an IT cluster in the development of e-government and digitalization of public administration.

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