

# INSTITUTIONAL ENVIRONMENT OF THE DIGITAL ECONOMY SECTOR

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**Abstract.** *The purpose* of this article is to improve the theoretical and methodological foundations for studying the essence and peculiarities of development of the institutional environment of the digital economy sector, to allocate the components of its architectonics as the basis for forming a platform for the conceptual development of the national economy based on digitalisation. *Methodology.* The methodological basis of the study is formed by modern economic and sociological institutional theories, the object of analysis of which is the institutional dynamics of the environment: institutional theory, new institutional theory, substantivist theory, the concept of institutional density, the concept of institutional matrices, the theory of societal psyche. The paper uses the historical-logical and dialectical methods to study the contradictions of the processes of formation and development of the institutional environment, as well as the methods of system analysis to study the components of the architectonics of the institutional environment of the digital economy. *Results.* From the standpoint of institutional theory, it is formulated and substantiated that the institutional environment of the digital economy sector is a synthesis of a set of formal/informal basic/complementary institutions of the traditional and digital economies of different levels and institutions that are in certain interconnections and relationships with each other, forming a hierarchical integrity. Institutions determine the creation and operation of relevant institutions, which, in turn, ensure the implementation and enforcement of established rules and regulations. At the same time, the resilience and flexibility of the environment is based on the natural accumulation or forced implementation of basic institutions capable of ensuring the emergence of new digital economy institutions or significant modernisation of existing ones, which protects and promotes the development of the digital economy. The task of managing the institutional environment is to balance the ratio of institutions. The architectonics of the institutional environment of the digital economy sector is a system that combines a functional set of institutions of the traditional economy (management, labour, property, market, non-market), specific institutions of the digital economy (information, participation, digital space), global institutions, and regional institutions. Institutions as systemic elements, through implementation/legitimation mechanisms, form a set of institutions of the digital economy that mediate the interaction of economic actors, provide contracting, and mechanisms of institutional change. The most important institutions include innovation labs, research centres, technology companies, start-ups, cryptocurrency exchanges, digital agencies, consultancies, educational institutions, learning platforms, government agencies, legislative bodies, banks, digital banks, financial institutions, digital platforms, and digital networks. Interaction and mutual influence of institutions and institutions of the digital economy form the guidelines for selecting effective elements of the institutional structure from alternative institutional forms. The digitalisation of Ukraine, which is focused on the norms of international, European and regional cooperation, will facilitate Ukraine's integration into the European and global market of e-commerce, goods and services based on information and communication technologies. A new global economic architecture is being designed, into which new economic agents are integrating. At the same time, regionalisation processes are taking place, new regional clusters are emerging, and the country is being integrated into the European cluster. *Practical implications.* The elements of the architectonics of the institutional environment of the digital economy sector are identified and summarised by criteria, which makes it possible to identify the most problematic areas of institutional transformations and to formulate and select instrumental solutions to overcome them. The development of the relevant elements of the institutional

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environment of the digital economy sector contributes to a rapid and profound digital transition, when the results of digital transformation will become the basis of Ukrainian society and a key factor on the path to Ukraine's prosperity and welfare. *Value/originality*. It is established that the use of institutional analysis tools will allow determining the optimal directions of institutional building/transformation of digital economy institutions and minimising the social costs of Ukraine's evolutionary development. A two-level approach to designing the institutional environment of the digital economy sector in the national space is proposed: at the institutional level – as designing the socio-political and economic conditions for the development of digital economy institutions based on the development of digital products and technologies; at the individual level – as designing the functional place of a digital product in the human life space.

**Key words:** institution, institutional matrix, institutional environment, digital economy, digitalisation.

**JEL Classification:** B52, D80, L86, O43

## Introduction

The patterns of development of the digital economy are determined by the environment of functioning of the economic agent – and the nature and structure of the institutional environment. Addressing the issue of the efficiency of the digital economy sector requires the creation of specific national institutions that will ensure the effectiveness of the institutional environment. The institutional content of the digital economy is undergoing transformation due to negative factors influenced by the military and political situation in Ukraine. These factors include human losses among military personnel and civilians, societal stratification, economic losses due to reduced production caused by damage to infrastructure and economic facilities, corruption, internal political disagreements, restrictions on citizens' freedoms, migration, demographic crisis, low funding for education and healthcare, reduced life expectancy, falling education and living standards, and a humanitarian crisis with problems of access to basic life needs such as food, water, and medical care.

For a long time, the Ukrainian economy has shown an inability to effectively modify institutions, which requires finding an incentive mechanism to create an effective institutional environment, including for the digital economy sector. The historically determined orientation of institutional dynamics and unsuccessful institutional transformations of Ukrainian society do not preclude the possibility of successful modernisation of the institutional environment. The formation of new and improvement of existing institutions of the digital economy is directly related to the issue of their effectiveness.

The theoretical and practical aspects of the functioning of the digital economy sector and the problems of its development on the basis of institutional methodology are studied in the works of such domestic and foreign scholars as O. Humeniuk, V. Kolomiets, D. North, K. Polanyi, A. Pustovarov, P. Putsenteilo, M. Castells, A. Tkach, O. Trokhymets, M. Fesenko, K. Shaposhnykov. Despite their

importance, the solutions developed have not been properly implemented to enhance the development and expansion of Ukraine's digital economy. Paying tribute to the effectiveness of the work of scholars on institutional change and the institutional environment, it should be noted that in the current environment there is a lack of research aimed at identifying effective ways to build an institutional environment for the comfortable functioning of the digital economy sector. Thus, the need to substantiate new instruments and means of institutional development of the digital economy sector of Ukraine, more adapted to modern realities, is relevant to the study.

**Theoretical basis.** The institutional environment of the digital economy sector is studied on the basis of an interdisciplinary approach through the prism of economics, politics, sociology, and law to gain a comprehensive understanding of its impact on the development of the digital society. The methodological basis of the study is modern economic and sociological institutional theories, the object of analysis of which is the institutional dynamics of the environment: institutional theory (Davis, North, 1971), new institutional theory (Tkach, Kolomiets, Radieva, 2019), substantivist theory (Polanyi, 2001), the concept of institutional density (Blishchuk, Domsha, 2020), theory of the societal psyche (Donchenko, 2011).

The methodological basis for developing approaches to formulating the institutional content of the digital economy is the new institutional paradigm, which includes the institutional paradigm, the neo-institutional paradigm, and the paradigm of the new institutional economic theory. Significant changes in the structure and content of institutions as a result of changing conditions of economic and social activity of people require the transformation of standard ideas about processes – that is, they require the development of a new paradigm for the development of the digital economy sector (Tkach, Kolomiets, Radieva, 2019).

The methods of the new institutional theory are complemented by the provisions of the substantive

theory, which studies economic relations in relation to other social, cultural, and political phenomena in society. The concept of substantivist theory recognises that the economy cannot exist in isolation from other social institutions. Social interactions influence economic structures. This approach is important for understanding a wide range of economic, social and political phenomena in modern society (Polanyi, 2001).

The transformation of the socio-economic system and transformation processes in various sectors of the economy are associated with transformations of the institutional environment, which is one of the key categories of institutional economic theory and an important component of the basic conditions for economic reform. The essence, features, and components of the "institutional environment of the economy" and its individual spheres, such as agriculture, industry, and human capital, have been thoroughly studied in the scientific space. At the same time, economic theory lacks a scientific interpretation of these categories in relation to the digital economy.

Scholars consider the institutional environment as a set of fundamental political, social, and legal rules that form the basis for production, exchange, and distribution, outlining the framework for human behaviour (Davis, North, 1971); as a set of the most important fundamental social, legal, political, economic, moral, ethical, cultural rules and norms that determine behaviour and relationships in society and are aimed at improving the efficiency of the economy and the quality of life of the population (Chubar, 2013); as a set of fundamental social, political and economic rules that constrain human behaviour (Tkach, 2007); as a combination of multi-level institutions that form an institutional matrix of formal rules and informal restrictions (Mantsurov, 2011); as norms, principles, values and mechanisms of their observance that contribute to the generation of new ideas, opportunities in regional development, growth of creativity in the region, realisation of the interests of the regional community, adaptation of economic development to the needs of the region, development of social capital, and use of the creative potential of residents in solving economic, social and cultural problems (Shaposhnykov, 2013).

**Results.** Understanding the components of the institutional environment of the digital economy sector is important for identifying and forecasting changes in society and the economy. The digital economy is intertwined with the traditional economy, combining institutions of the traditional and digital economies in its institutional environment. The fundamental approach to the formation of the digital economy is the system-functional approach, according to which the main components of the institutional environment are identified – institutions that interact and influence each other. The institutional

environment, in addition to the fundamental rules, includes a set of organisational mechanisms and structures that mediate the interaction of economic agents and ensure contracting, as well as mechanisms for institutional change.

The institutional environment of the digital economy sector consists of systemic elements – institutions that are formed and dynamically develop in interaction with other elements. The institutional development of each element is aimed at preserving the structure of the environment through the ability of each institution to self-regulate and internalise, which allows them to adapt to changes in the external environment. Institutions are repetitive in nature and provide for the design of stable patterns and methods of action of economic agents. The aggregate impact of institutions forms the institutional environment, which manifests the collective behaviour of the socio-economic system (Radieva, 2019).

According to the systemic-functional approach, the architectonics of the institutional environment of the digital economy sector can be presented as a system that combines 1) institutions – rules (ethical, moral, social, public) and norms (legal, legally enshrined); 2) mechanisms for implementing/legitimising norms/rules in the form of procedures and instrumental decisions; 3) institutions that mediate the interaction of economic actors and ensure contracting; 4) guidelines for selecting effective elements of the institutional structure from alternative institutional arrangements.

Consider the architectonics of the institutional environment of the digital economy sector as a set of interdependent elements, each of which forms a field of its own influence and is influenced by other elements (Figure 1). Within the framework of institutional theory, scientists have identified a list of basic institutional rules for the formation and development of institutional platforms for a transformational economy: specification of all property rights; legal support for the regulation and management of economic processes; creation of conditions for competition; contractual relations; transaction costs; market; synergistic effect of reforms; information security; technology; free flow of resources and capital. The formation of the economic environment sector is directly related to such complementary institutions as traditions and religion, customs and upbringing, family and ideology, politics, law, government, mentality and culture, formal laws and punishment systems, professional activities, and motivation (Pokataeva, 2013; Tkach, Radieva, Kolomiiets, 2019; Tkachenko, Shtets, 2021).

Consider the components of the architectonics of the institutional environment of the digital economy sector of Ukraine that most actively influence the

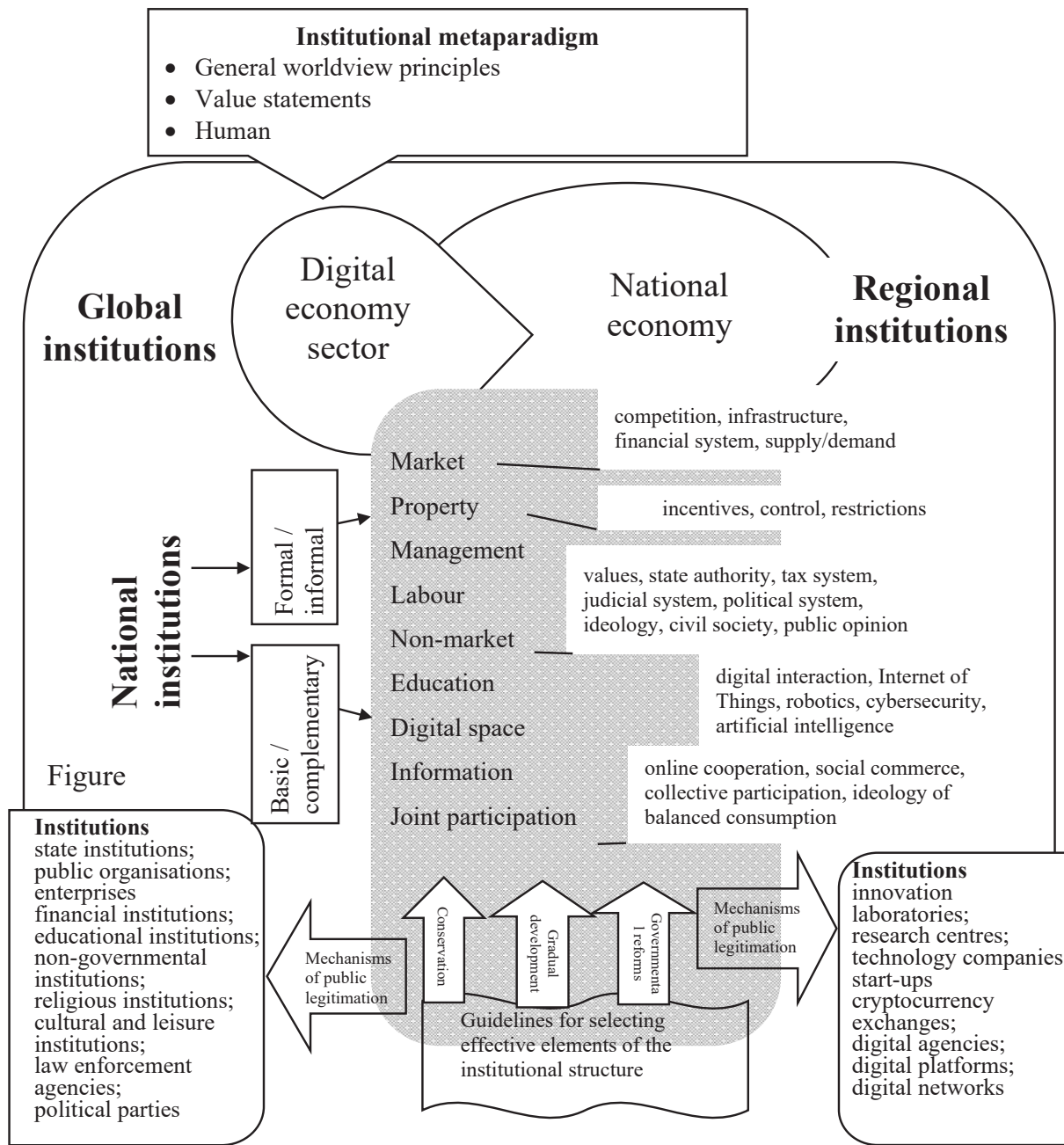


Figure 1. Architectonics of the institutional environment of the digital economy sector

Source: developed by the authors

processes of digitalisation of Ukrainian society: management institution, which produces incentive/control/restriction mechanisms; labour institution; property institution; non-market institutions, the main ones of which are the state and civil society as special types of social institutions; market institution responsible for the competitive environment of the economic agent; information institution, participatory institutions; digital space institutions; global and regional institutions that combine the above institutions of the respective levels.

The digitalisation of Ukraine, focused on the norms of international, European and regional cooperation, aims to integrate Ukraine into the European and global market of e-commerce, goods and services, and to integrate Ukraine with European and global systems using information and communication technologies (Kraus, Goloborodko, Kraus, 2018).

Economic globalisation makes it impossible to quickly and painlessly sever global economic relations between countries, even in the event of war. At the same time, the breakdown of pre-war technological chains is becoming inevitable. A new global economic

architecture is being designed, into which new economic agents are being integrated. Simultaneously, there is a process of regionalisation, the emergence of new regional clusters, and Ukraine's integration into the Western cluster, primarily in terms of updating the military-industrial complexes of countries.

These processes, which are associated with the polarisation of the world into "two camps" and cooperation within each camp, are changing the model of globalisation that emerged at the beginning of the twenty-first century. The new world order is determined by the global confrontation between democracies and dictatorships. Confrontation, similar to the situation between the First and Second World Wars, is replacing the agreed divided coexistence that emerged after the World War II. The duration of such a confrontation is estimated at 30-40 years. The war may result in the replacement of global and national elites.

New elites are formed on the basis of access to and control over information technologies and resources. In the information space, "information elites" have personal micro-networks, play a key role in shaping and controlling information technologies, economy, politics, and benefit from this control. At the same time, elite representatives, as in previous times, are symbolically closed entities with their own interpersonal subculture and have a privileged position in society (Castells, 1996).

The war will be the catalyst for the transition to a new sixth technological order. Historical experience shows that every war of this scale stimulates the transition to a new technological level. The civilisational task of transitioning to a new technological level by peaceful means, which was first set by humanity in the noughties, has not been fulfilled.

Among the most important technological shifts are robotics and the emergence of artificial intelligence. The speed of their implementation and the success of their use will determine the country's competitiveness in the global economy. Under the pressure of new technologies, new solutions are emerging, even those produced by turnout. Ukraine's goal is to evolve and develop the basis for a different way of thinking – a breakthrough into a new technological, social and economic future, and the creation of new practices to scale to the global world.

The public administration and policy community becomes a flagship in the development, promotion, and implementation of comprehensive national digital strategies and ensures the reduction of barriers to the country's digitalisation, correction of market failures, support for fair competition, investment attraction, development of digital infrastructure and digitalisation based on national priorities (Digital Agenda of Ukraine, 2016; Pustovarov, 2020). The

effective functioning of the digital economy in the context of constant digitalisation involves the transformation of certain structural components, such as information and telecommunication technologies, human capital, a favourable business climate and effective governance (The World Bank Group, 2016).

Increased civic responsibility, unification of Ukrainian society, and volunteering as manifestations of civil society have become a response to the deep socio-economic and political crisis in society caused by the military and political situation in Ukraine and the overall macroeconomic instability.

Institutions of the sharing economy (or sharing economy) are forming a new model of market relations embedded in the digital economy system through the use of modern digital technologies, the rapid spread of online platforms, Ukraine's deeper integration into the European and global information space, the existing potential in the ICT sector, and numerous outsourcing IT companies. The scientific literature identifies the following main institutional aspects of the sharing economy: online collaboration, social commerce, collective participation, and anti-consumer ideology (Bodrova 2019).

The digital area is a technological and communication framework that unites two systems: service for consumers and service for producers. The digital needs of consumers are met by the consumer-service system, which includes communication (Facebook, Twitter), news (Google), leisure (YouTube), and shopping (AliExpress, Amazon, Avito). The possibilities of doing business in the digital space are realised in the "service producer" system with the help of: accounting (jSolutions), logistics (4Logist), marketing (AliExpress), analytics (Qlik Sense) (Putsenteilo, Humeniuk, 2018).

The institutional components of the digital space set new rules and actively influence the national economy, ensure faster organisation and efficiency of business, and reduce transaction costs. These components include digital interaction, the Internet of Things, blockchain, cybersecurity, 3D printers, big data, cloud computing, quantum technologies, NBIC convergence, additive manufacturing, and robotics.

The institute of digital interaction is implemented through the use of digital platforms as a set of technologies that ensure the creation of a specific and specialised system for storing and exchanging information between market participants through virtual space.

A platform is described as a product, service or firm or service that mediates transactions between two or more groups. Platforms are differentiated by type of activity, economic sector, and business

model: Internet search engines (Google, Yahoo, Bing), online marketplaces (eBay, Booking.com, Asos, Allegro, AMAZON), video-sharing platforms (e.g., Dailymotion, Vimeo, YouTube), music and video platforms (e.g., Deezer, Spotify, Netflix, Canal Play), social media (e.g., Facebook, Twitter), money-saving platforms (AirBnB, Uber, BlaBlaCar, Ulule, Crowdcube), online games (Steam), etc.

The digital economy comprises various institutions that play a key role in facilitating the development and functioning of the digital society and business, providing infrastructure, regulatory frameworks, technological solutions and other necessary elements for sustainable growth in a digital society. The institutions of the digital economy include:

- Innovation laboratories and research centres that facilitate the development of new technologies, innovations and the implementation of advanced solutions in the digital sphere;
- active technology companies and start-ups that implement innovative ideas and technologies in real business;
- cryptocurrency exchanges that create an infrastructure for trading and exchanging cryptocurrencies;
- digital agencies and consultancies that provide digital marketing, data analytics, cybersecurity and other digital services to support businesses in the digital environment;
- educational institutions and learning platforms that train specialists in the field of information technology and the digital economy, providing education and skills to work in this sector;
- state bodies, government agencies and regulators that set rules and regulations for the functioning of the digital society, providing the legal and regulatory framework for the digital economy;
- banks, digital banks and financial institutions working in the field of financial technologies, developing and implementing digital financial technologies, such as mobile payments, smart finance applications, blockchain, cryptocurrency development, payment technologies, and other innovations in the field of finance;
- digital networks;
- digital platforms as online platforms for storing and exchanging various values, provide mutually beneficial interactions between market participants, openness of infrastructure for participants, convenience, flexibility and manageability.

## Conclusions

The architectonics of the institutional environment of the digital economy sector is a system that combines a functional set of institutions of the traditional economy (management, labour, property,

market, non-market), specific institutions of the digital economy (information, participation, digital space), global institutions, and regional institutions. Institutions interact and influence each other as systemic elements and, through procedural mechanisms of implementation/legitimation, form a set of digital economy institutions (innovation laboratories, research centres, technology enterprises, start-ups, cryptocurrency exchanges, digital agencies advisory services, educational institutions, learning platforms, government agencies, legislative bodies, digital banks, financial institutions, digital platforms, digital networks), mediate the interaction of economic actors, provide contracting, and mechanisms for institutional change. Interaction and mutual influence of institutions and institutions of the digital economy form the guidelines for selecting effective elements of the institutional structure from alternative institutional forms.

The identification and generalisation of the elements of the architectonics of the institutional environment of the digital economy sector makes it possible to identify the most problematic areas of institutional transformations and to formulate approaches and choose instrumental solutions to overcome them. The institutional environment of the digital economy sector accumulates rules (norms), mechanisms for implementing norms and guidelines for selecting effective elements of the institutional structure from alternative institutional forms. The abrupt breakdown of existing rules and norms in order to create new formal institutions leads to "market failures" that reflect the mismatch between existing traditions and new formal institutions. The problem of overcoming the existing contradiction can be solved by creating an effective institutional platform for a transformational society.

Designing the institutional environment of the digital economy sector in the national space should take place at two levels. At the institutional level, as the design of socio-political and economic conditions for the development of digital economy institutions based on the development of digital products and technologies; at the individual level, as the design of the functional place of a digital product in a person's life space.

Further research is aimed at determining the significance of the impact of each element of the institutional environment on the basis of empirical analysis to identify the most sensitive areas of environmental transformation. The development of the elements of the institutional environment of the digital economy sector should be aimed at a rapid and deep transition to digital, when the results of digital transformation will become the basis of Ukrainian society and a key factor on the path to prosperity and well-being of Ukraine.

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