

Regulatory Policy for Development of Digital Business in the National Economy

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Abstract

Scientific approaches to the interpretation of the essence of the concept of "digital business" have been studied and, on this basis, an author's approach to its interpretation based on the globalization of economic relations has been proposed. The statistical indicators of the use of information and communication technologies at domestic enterprises were analyzed, and the state of development of digital business in Ukraine was analyzed. It has been established that the majority of enterprises have access to the Internet and carry out electronic trade through it, the number of which is characterized by positive trends. Export volumes of the IT industry of Ukraine are growing steadily, mostly to EU countries. A low level of the number of enterprises that conducted training in the field of ICT was revealed. Indicators of the use of websites, cloud technologies, calculations based on "big data" and the frequency of use of 3D printing demand better results. The problems of functioning of digital business in Ukraine are analyzed. The national infrastructure of the sphere of regulation of the development of digital business in Ukraine is presented, with its constituent government institutions and key normative legal acts of regulatory activity. Ways to strengthen the regulatory policy in the field of digital business in the areas of effective state regulation, rational approaches to data processing, regulation of competition, principles of advertising activity, protection of the rights of consumers of digital products and services, reduction of cyber risks and introduction of the "Uniform Digital Income Tax" according to OECD methods are proposed.

Keywords: Digital Business, Regulatory Policy, Access to the Internet, E-Commerce, Infrastructure of Regulatory Bodies

Introduction

The world economic system, in particular the domestic one, undergoes constant changes in its architecture and constituent elements. Pandemic processes, geopolitical instability, powerful and rapid development of digital technologies have led to significant transformations in the system of economic relations. We are talking about the formation of an

unconventional, completely new economic cluster - digital business, as a system of economic relations based on the latest achievements, technologies, ideas and visions regarding the production of goods (services), their promotion based on a digital resource. Today, the field of digital business has been perfectly implemented in almost all industries and sectors of economic relations in connection with the revision of the attitude to information technologies and their exceptional ability to generate values and components of the production process. The Ukrainian economic system is no exception. Under such conditions, there is a need to implement an effective regulatory policy for the development of digital business in Ukraine, taking into account specific domestic business conditions.

The purpose of the article is to study the features of the modern development of digital business in Ukraine, its trends, and to develop, on this basis, the principles of regulatory policy for improving its functioning.

In the framework of achieving the stated goal, the methods of dialectics, systematization, statistical and graphic analysis, logical generation of conclusions and proposals of the researched question were applied.

Literature review

Allakhverdieva(2020),Djakona et al. (2021), Marhasovaetal. (2024), Zybaveva etal. (2023) Krylovetal. (2023) in their scientific research determine that the modern development of digital technologies is definitely the basis for the sustainable development of the economy, the reduction of transaction costs and, above all, the costs of searching and processing information.

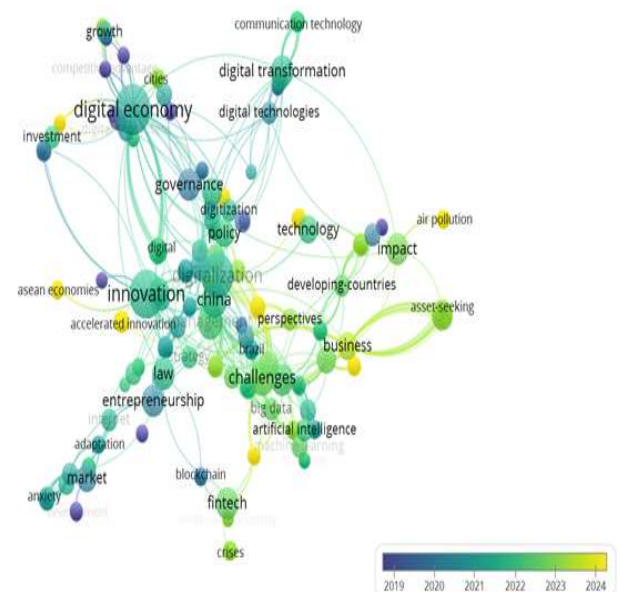
Scientific works Jietal. (2024), Abramovaetal. (2021) Gavkalovaetal. (2017)are devoted to questions of the economic content, value, necessity and persistence of digital business functioning.

Verbivskaetal. (2023),Butkoetal. (2020)conclude that the use of digital technologies by business structures in recent years has become a necessary condition for their dynamic development and survival in conditions of fierce competition.

In their turn, Alexander (2010), Popeloetal. (2022), Nikiforovetal. (2022), Zhavoronoketal. (2022) clarify the necessity and principles of regulatory policy for the development of digital business.

The relevance of the chosen research topic is also confirmed by the bibliographic analysis of data from one of the most prestigious scientometric databases Web of Science (Fig. 1). To date, the Web of Science database contains 63 scientific works on determining the impact of regulatory policy on the development of digital business in the national economy, the dynamics of which are as follows: 2013 - 1 article, 2016 - 2 articles, 2017 - 2 articles, 2018 - 4 articles, 2019 - 4 articles, 2020 - 7 articles, 2021 - 12 articles, 2022 - 12 articles, 2023 - 11 articles, 2024 - 8articles. The world centers of concentration of scientific research on this issue have become: China, England, Ukraine, USA, Germany, Australia, Netherlands, Croatia, Malaysia and Singapore.

Figure 1: Graphic map of bibliographic analysis of keywords in the studies that contain the titles “regulatory policy”, “digital business”and “national economy”



Source: compiled by the authors based on the analysis of the Web of Science database and using the tools of the VOSviewer program

Results

The main global trend can be safely considered to be the constant growth of demand for digital products and services. The significant need for the use of information technologies in industrial and economic activities and state management processes can be considered the main reasons for the development of digital relations in Ukraine. The importance of this issue has been strengthened by the ever-increasing level of digital literacy of the population and the desire to master new digital technologies that would successfully satisfy consumer demand, but already under the conditions of accessibility, increasing level of efficiency and guaranteed security of such relations. The global COVID-19 pandemic has especially exacerbated these issues, and most importantly, given a rapid impetus to the further development of digital economic relations, namely digital business.

Within the framework of the chosen direction of research, it is important to focus on identifying the nature of digital business, because today there is no unified approach to the interpretation of this category. Thus, the IVM company does not directly define the category of digital business, but interprets the essence of electronic business (e- business), in particular, as the process of conducting economic activity and any other business processes through computer networks. Modern views are also ambiguous. Yes, there are views that “digital business is the creation of new value chains and business opportunities that traditional business

cannot offer. The approach, according to which "the number should be perceived less as a thing and more as a process" deserves attention. Some academics believe that “digital business uses technology to create new value in business models, customer experiences and internal capabilities that support its core operations. The term includes both digital brands and traditional companies that are transforming their business using digital technologies. In our opinion, digital business is the newest type of global economic relations, entrepreneurial activity that gathers on the possibilities of digital technologies and networks to create new products, values (added value), execution of works and services in a digital format, as well as obtaining profit from the ownership of digital assets on the principles of competition and individual advantages (the speed of contact and interaction between the producer and the consumer, the absence of geographical restrictions on their relationship, the low cost of the customer's search for products, a large volume of data about the seller, lower production costs, etc.).

The history of domestic digital business is just beginning. Currently, due to the lack of a set of indicators and a unified methodology, it is quite difficult to make an assessment, identify trends in the genesis of digital business, measure the benefits of digitalization, as well as form ratings of the subjects of this business. We will conduct a study based on official statistical data by sector of the use of information and communication technologies at enterprises (hereinafter - ICT) (Table 1).

Table 1. Dynamics of ICT usage indicators at Ukrainian enterprises in 2018-2022

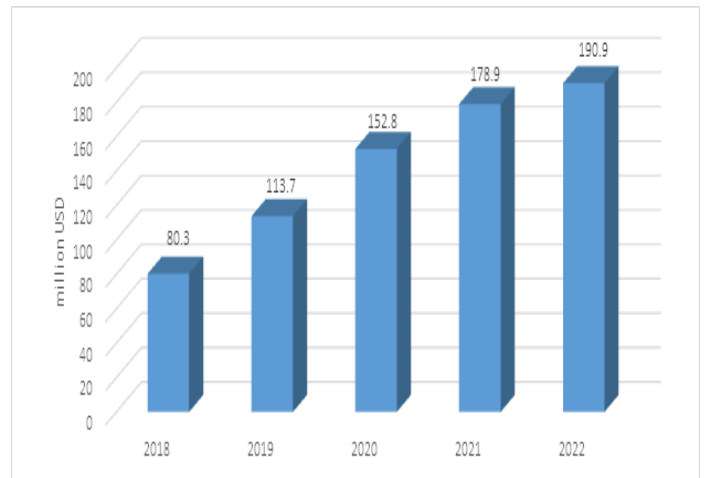
Indicator	2018	2019	2020	2021	2022
The number of enterprises that have access to the Internet, units	44303	43785	-	44508	42785
The number of enterprises that have access to the Internet, % of the total number	88.0	86.4	-	86.6	85.1
The number of enterprises that carried out electronic trade, units	2476	2440	2494	2513	1953
The number of enterprises that carried out electronic trade, %	5.0	4.8	4.9	5.0	5.1
The number of enterprises that carried out electronic trade, in % of the total volume of the enterprises' sold products	3.5	4.5	5.0	5.3	3.5
Volume of sold products, services received from electronic trade, billion USD	6.54	7.98	11.08	11.23	6.21

Source: built by the authors based on State Statistics Service of Ukraine (2024)

Data shows ambiguous trends in the growth of the number of Ukrainian enterprises (in particular, processing industry, wholesale and retail trade, food production, etc.) that have access to the Internet both in absolute and relative terms - in 2022, the relative indicator decreased from 88, 0% to 85.1%. Accordingly, until 2022, such trends only gained momentum, and here is the beginning of a full-scale invasion of negative influence on the state of affairs. There are many reasons, but the main ones have been constant armed and cyber attacks on enterprises in the eastern and central parts of the country, suspension of operations, relocation and destruction of part of the production complex. A similar state of affairs is characteristic of the development of enterprises that carried out electronic trade - until 2022, they increased their quantitative indicators (from 2,476 units in 2018 to 2,513 units in 2021), but in 2022 their number decreased to 1,953 units. In relative terms, on the contrary, an increase is observed - from 5.0% in 2018 to 5.0% in 2022. At the same time, the level of access of Ukrainian enterprises to the Internet is quite high, which creates prerequisites for further integration into foreign markets.

The value of the indicator of the volume of sold products (goods, services) obtained from electronic trade turned out to be economically effective - in 2022 it amounted to 6.21 billion USD, which is 290 million USD or 104.9% more than the value of the base year of comparison. In general, digital business in 2018-2022 provided significant amounts of income to the economy of Ukraine from the export of the IT sphere - 4.5% of GDP or 190.9 million USD (Fig. 2). Unfortunately, it is technically impossible to study the dynamics of the level of profitability of digital business entities, which could deepen the level of assessment of the state of its development.

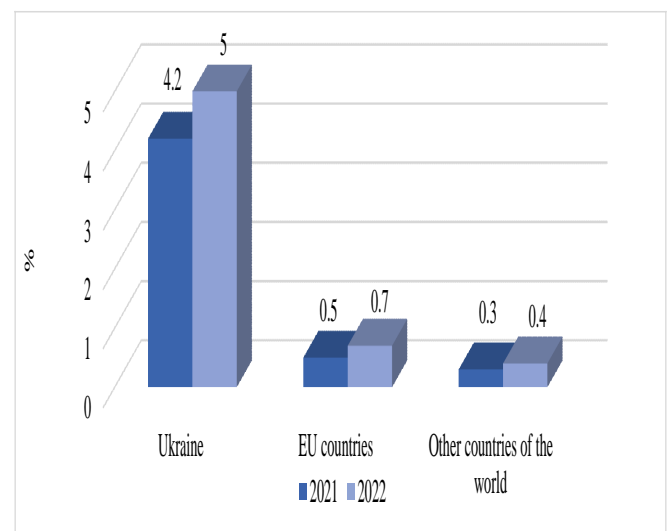
Figure 2. Dynamics of exports of the IT industry of Ukraine, 2018-2022, million USD



Source: built by the authors on the basis of State Statistics Service of Ukraine (2024)

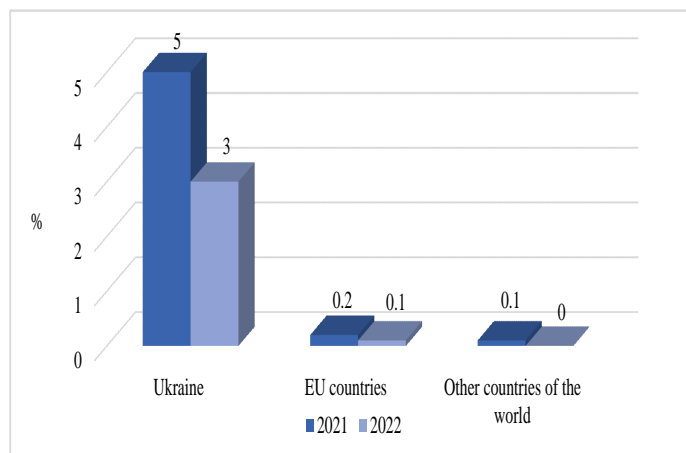
Figures 3,4 presents an analysis of digital business indicators (by e-commerce sector) by customer location.

Figure 3. Share of the number of enterprises that carried out e-commerce in the total number of enterprises, by location of customers



Source: built by the authors based on State Statistics Service of Ukraine (2024)

Figure 4. Share of the volume of products sold from e-commerce, in the total volume of products sold by enterprises by location of customers



Source: built by the authors based on State Statistics Service of Ukraine (2024)

The presented data show that the vast majority of digital business clients are concentrated on the territory of Ukraine and only a small share of them are located in EU countries (0.7% in 2022) and other countries of the world (0.4% in 2022). The stated arguments indicate the existing potential for deployment of electronic trade by domestic digital business entities in the international economic space, as well as the need for state regulation of these processes.

The values of the indicators of the share of the number of enterprises that conducted training in the field of ICT (at the level of 3.7-4.3%), have websites (35.3%), etc. are quite weak (Table 2). Such indicators indicate a low level of activity of domestic enterprises in the online space and may affect the degree of trust of customers.

Table 2. Dynamics of indicators of the use of information and communication technologies at enterprises, 2018-2022

Indicator	2018	2019	2020	2021	2022
The share of the number of enterprises that conducted training in the field of ICT, % in the total number of enterprises by areas of training	3.7	3.8	4.5	-	4.3
Share of the number of enterprises with a website, %	-	-	3.9	3.6	4.3
Use of social media at enterprises, % of the total number, of which:					
- social networks	25.0	25.7	-	-	24.3
- blogs or microblogs of the enterprise	7.0	7.2	-	-	6.8
- websites, application programs (web applications) for sharing multimedia content	12.4	12.8	-	-	12.3
Wiki-based knowledge sharing tools	11.4	11.4	-	-	11.0
Share of the number of enterprises that buy cloud computing services, %	9.8	10.3	-	10.2	9.8
Share of the number of enterprises that sent invoices in electronic form, %	39.9	39.3	39.8	-	-
Share of the number of enterprises that performed "big data" analysis, %	12.5	11.9	12.7	-	-
Share of the number of enterprises that used 3D printing, %	2.0	2,3	2,3	-	-

Source: built by the authors based on State Statistics Service of Ukraine (2024)

The problematic issues of digital business functioning are:

- 1) components of their digital security – system failures of hardware or software, attacks from the outside (ransomware attacks, denial of service (DoS attack)) that complicate access to ICT, data integrity risks due to hardware or software failures, digital protection systems, disclosure of confidential data due to penetration, farming, phishing attack or official negligence of personnel;
- 2) weak material base and lack of own production of computer equipment and components (processors and microcircuits (chips) for them), low level of microelectronics and precision engineering;
- 3) digital infrastructure (coverage by mobile communication, broadband Internet, delay in the introduction of 5G communication). The next spread of ICT (projections of artificial intelligence, unmanned transport, augmented reality, etc.) is associated with the transition to the fifth standard of mobile communication (5G), and the increasing load on 4G networks, the delay in the deployment of the 5G network leads to a decrease in speed and quality communication for subscribers;
- 4) high barriers to entry and the level of competition, the structure of domestic markets (traditional orientation of domestic users to imported operating systems and software) due to their small capacity;
- 5) inadequate level of digital knowledge and skills of business subjects, as well as the cost of new technical means and equipment.

It is worth summarizing that the development of digital business in Ukraine does not fully correspond to the global trends of its development, the functional, personnel and resource potential is not fully utilized. This, in turn, limits the access of domestic enterprises to the competitive international market and inhibits the processes of increasing the level of their economic, technological, personnel, investment development, etc. Argued circumstances make it necessary to develop new and

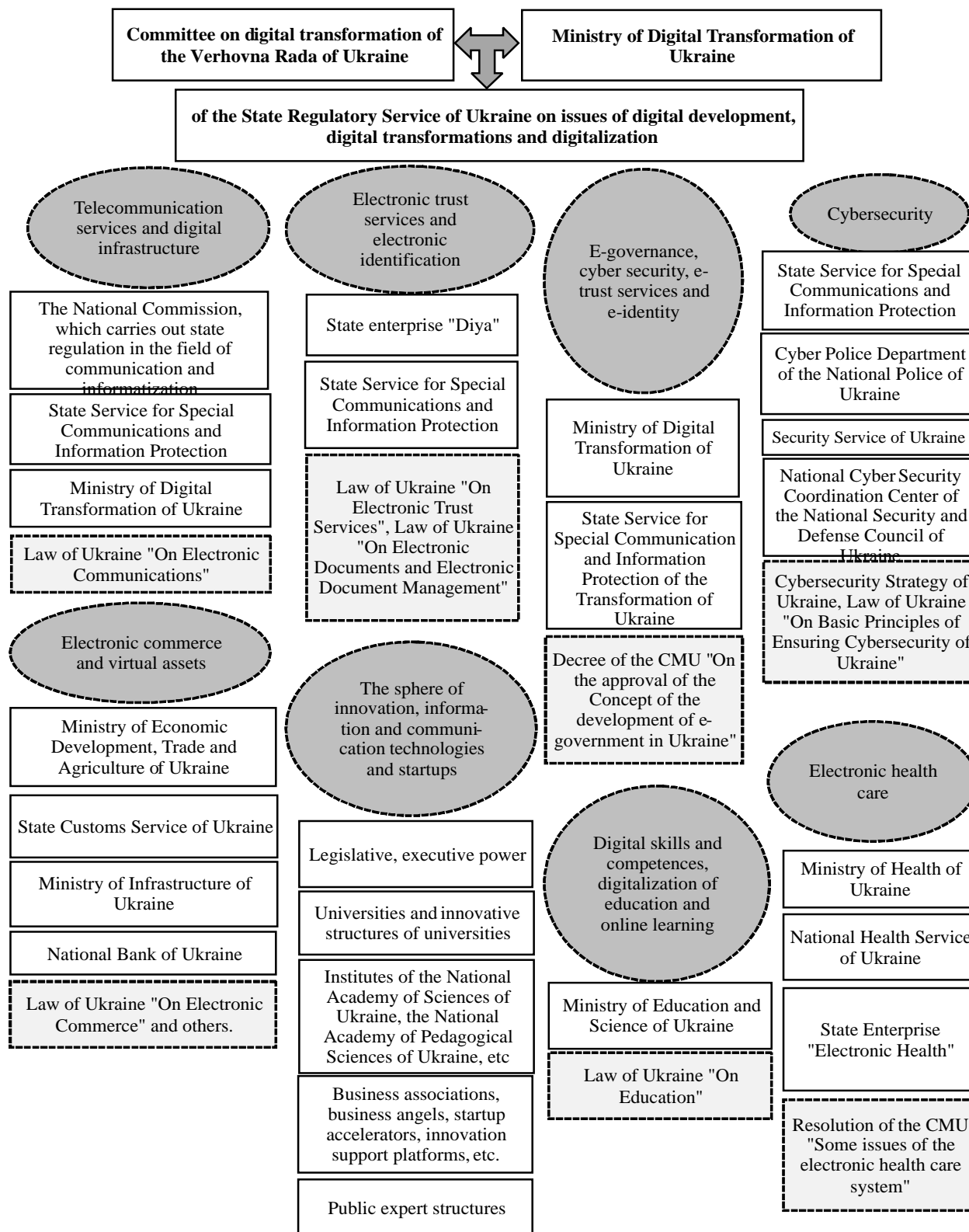
improve existing approaches to regulating digital business development processes in Ukraine.

It should be noted that the adoption in 2018 of the Concept and Action Plan on the development of the digital economy and society of Ukraine for 2018-2020 should be considered the official start of the development of digital business in Ukraine (Cabinet of Ministers of Ukraine, 2018). The modern functioning infrastructure designed to implement the national strategy and policy of regulation of the digital economy and business is presented in Fig. 5.

Each declared structural body in its activity is guided by the relevant regulatory and legal framework, instructional materials, recommendations, the complex interaction of which is designed to implement the state policy of digital business development in Ukraine. These documents are not permanent, as they are constantly updated in accordance with market requirements and consumer demand. Considering the existing level of development of digital business in Ukraine, the author's team proposes to form a map of goals, the components of which are:

1. Effective government regulation aimed at creating conditions for the qualitative development of national digital business to increase its competitiveness compared to foreign ones. Avoiding the monopolization of the market by digital business giants, as well as not allowing excessive regulatory influence or the absence of restrictions where they should be, which can provoke an increase in risks.
2. Data processing - to allow the processing of personal data on the basis of a single consent for all national business units, as well as establishing the right of a business subject to withdraw such consent with the requirement to delete the subject's personal data in the system. It is worth giving artificial intelligence developers access to government data. Allow users to turn off personalized suggestions. Oblige to transfer a list of data for monitoring national ecosystems. Transfer of personal data to the state only with consent.

Figure 5. National infrastructure of the regulation sphere of digital business development in Ukraine



Source: built by the authors based on Polish Foundation for International and Regional Studies (2020)

Allow circulation of depersonalized (anonymized) data without consent. Prohibit the possibility of promoting one's own products based on competitive practices and supplier data. Provide the provider with access to the data collected about him. Introduce mandatory information security insurance for distributed storage of personal data, as well as audit of personal data operators.

1. Competition - within the framework of antimonopoly control, oblige foreign digital businesses to publish the rules of access to their products and services, as well as oblige them to disclose publicly the criteria for the admission of domestic suppliers to foreign markets. Expand the scope of application of antimonopoly prohibitions to business entities that have network effects.
2. Advertising - to provide consumers with the option to opt out of targeted advertising and providers with access to the platform's targeting capabilities. Expand the scope of the law on advertising to foreign companies.
3. Protection of consumer rights. Mandatory notification of the consumer about the next charge for the subscription and giving him the right to continue it manually. Give the consumer the right to hide paid additional services, prohibit the imposition of additional services on the consumer. Introduce quality certification of goods, works and services, including for self-employed persons. Oblige to distribute mailings to clients for advertising and necessary information. Introduce mandatory consumer information about changes in the quality of goods. To reveal the market principles of pricing under the control of the regulatory body.
4. Reducing cyber risks and improving information security.
5. Implement the "Single digital income tax" according to OECD methods. Provide tax benefits for the export of products/services of national digital business. Introduce state guarantees of entities entering foreign markets and provide a mechanism for compensation of losses in the event of restrictions being imposed on

them abroad. Introduce subsidies for digital businesses for achieving the state contract for innovation. Develop the rules of the code of ethics for digital business entities, control over their compliance.

Conclusions

Modern digital business is transforming almost all sectors of the economy, contributing to the emergence of new business models, introducing innovative products and services and, as a result, changing the path of socio-economic development of the country. That is why, for its effective functioning, a favorable political and regulatory environment should be created, which would ensure the implementation of the digital business regulation policy in Ukraine with a high level of efficiency.

The stated proposals for improvement of the directions of the regulatory policy of the development of digital business in Ukraine should be the achievement of socio-economic effects: an increase in the volume and quality of domestic digital services based on data processing by artificial intelligence systems, an increase in user trust in domestic services and ecosystems, an increase in the pace of development of SMEs, growth the level of investments in the domestic digital business, as well as the reduction of external logistics costs, etc.

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