

Peculiarities of The Legal Regulation of the Digital Intellectual Economy Based on Supply Chain Management

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Abstract. This manuscript is dedicated to the study of the features of legal support for the functioning of the digital economy. The authors consider some reasons for the need to modernize legislation in the context of the development of the digital economy, as well as its concept and some of its features. Additionally, the authors studied various approaches to the legal regulation of the digital economy.

Keywords: economic law, information technology law, digital economy, smart economy, supply chain management.

1. Introduction

1.1. Nature and scope of the problem

The digital economy is driving significant economic growth, and its impact now extends not only to information products or services in other areas of the economy but also to life in a more general sense [1]. At the same time, the scale and pace of growth of the digital economy have changed the Internet and have had an impact that cannot be ignored by the government, business or industry [2]. Researchers also note that a dynamic digital economy will ultimately force capital, labor, and other factors of production to adapt to new and usually more productive economic behaviour [3]. In this regard, the objective of the study consists of reviewing and analyzing approaches to legal regulations in the field under study as the lack of practical legal support for the functioning of the digital economy can lead to underutilization of its potential, as well as to the emergence of other risks. The legal vacuum in the digital economy poses many challenges when technologies are used that are disruptive to traditional business models. Noel Jones cites the arrival of Uber as an example of such a use of technology when innovations in the field of technology for smart phones have changed the entire traditional taxi service system, since the existing model of legal regulation of the provision of such services was not applicable in this case, in particular, in India [2]. The development of the digital economy also redefines the functions and

behavioural strategies of public authorities and may even undermine national sovereignty [4]. Thus, the **scope of the research** is limited to the ways of legalization of digital economy.

1.2. Procedures used to conduct the study

Based on materialist dialectics and consist of collecting data through analysis of the aforementioned legal acts and descriptive approach to the legal regulations in the field under study likewise reflective practice. Different approaches to legal regulation in the field of the digital economy, as a rule, agree that it is necessary to ensure a legal regime in which innovations, on the one hand, will develop freely, and, on the other hand, potential risks will be prevented. At the same time, one of the risks is often the impossibility of accurately predicting the development path of the innovations in the digital economy, so the adopted legislation should be flexible enough and be formed considering as much data as possible.

2. Literature review

The issue of digitalization of economy and its legal framework has been and is becoming an object of attention both of domestic and foreign scientists. Among them can be named: *Alaerds R., Grove S., Besteman S., Bilderbeek P.; Barefoot K., Curtis D., Jolliff W., Nicholson J.R., Omohundro R.; Bauer M., Erixon F.; Johns N.; Finck M.; Gestrin M.V., Staudt J.; L'Hoest R.*, etc.

3. Methodology

The author in this paper proceeds from the objectively subjective assignment of any phenomena and processes of the external world and applied general scientific and special research methods, such as formal and dialectical logic combined with induction and deduction, hypothesis and analogy, analysis and synthesis, systemic analysis. Thus, the method of systematic analysis, along with such operations as induction and deduction, is used in the course of consideration of

the provisions of relevant jurisprudence and legislation in the field under study to clarify its key provisions and the relationship with other regulations; methods of formal and dialectical logic help to understand the relationship between science and technology and innovation; the materialistic view of the processes and phenomena of the external world as a whole makes the study proceed from the fact that digitalization of economy is a new reality.

4. Results and Discussion

4.1. The concept and features of the digital economy

As the Competition Committee of the Office of Finance and Entrepreneurship of the Organization for Economic Co- Operation and Development notes, "digital economy" is an umbrella term for digital-oriented markets that are typically involved in the sale of information, products, or services through electronic commerce. The digital economy operates on a multilevel basis with separate segments associated with data transmission [1]. The Australian Government defines the digital economy as a global network of economic and social activities, which is provided by information and communication technologies such as the Internet, mobile, and sensor networks [5]. The term "intelligent (smart) digital economy" is also found in the literature, since the functioning of the digital economy involves the widespread use of new technologies, including artificial intelligence technologies [6, 7, 8], as well as the approaches used to manage such an economy.

4.2. Features of the digital economy and some development trends

One of the features of the digital economy, at least at the present stage of its development, is that it is a challenge to accurately measure and determine it, in particular due to the lack of accurate and universal approaches to such measurement and determination due to a number of factors, such as the rapidly changing nature of technology [9]. Researchers also note that digital transformation is currently contributing to the convergence of traditional and digital economies [10]. The main engine for the development of the new digital economy is the continuous improvement of information technology productivity [11]. The effective performance of the network for the provision, creation, and consumption of relevant goods and services is essential for the smooth functioning of the digital economy, and depends,

among other things, on the following external factors:

- Programmable interfaces that combine data, infrastructure, and software;
- Digital partnership systems that offer new market entry;
- Innovations, research, education, promotion, stability, implemented state policy and legal regulation, and security [10].

It is also noted that the spread of the digital economy entails some new problems, such as the fact that many digital technologies have military applications [12]. Speaking about the main trends in the development of the digital economy, the following can be noted. Researchers note that the development of a new digital economy may be slowed down or even difficult in the future due to many social and technical factors; they include the following:

- Risks associated with data security;
- The inability to accurately predict the potential form and application of new emerging technologies;
- The development of new technologies is uneven and unpredictable [11].

At the same time, the digital economy is expected to reduce the need for a physical presence to serve foreign markets [12].

It is also noted that the projected Fourth Industrial Revolution will bring with it the creation of a new digital economy based on advanced cyber-physical systems [11].

The key characteristics of the digital economy distinguish it from the post-industrial model of recent decades; accordingly, a new regulatory model is needed to accompany economic changes [13].

4.3. General approaches to the regulation of the digital economy

In the scientific literature and in documents of public authorities, there are various approaches to determining the development of legal regulation in the field of digital economy. The digital economy is more globalized compared to more traditional models due to its nature. Therefore, the universality of the legal regulation of activities in this area and the harmonization of approaches at the national and international levels are essential. At the same time, there is current uncertainty regarding the standards applicable to the digital economy, which is exacerbated by the fragmentation of regulation due to conflicting approaches implemented in different

countries. This situation creates risks to the development of innovation [13]. According to Matthias Bauer and Fredrik Erickson, the most severe structural obstacle to the development of digital business in the EU is the regulatory heterogeneity in non-digital sectors of the economy, as the simple digitalization of traditional business models can make it difficult for digital businesses to compete with traditional industries [3]. At the same time, the solution to this problem is hampered by the fact that the digital economy is not a structured system that can be resolved with the help of a "package" of several harmonized legislative reforms. Because of its complex nature, the digital economy combines a wide variety of activities. Moreover, as noted earlier, the term "digital economy" can be used as a collective one. Moreover, the digital economy has not yet covered all sectors of economic activity; accordingly, legislative reform should be carried out gradually. A 2009 Australian Government Broadband, Communications, and Digital Economy Department report on the future development of the digital economy in Australia noted that developing the digital economy in Australia required action by the state, industry, and society as a whole. The role of the state is to fill the gaps in the market, solve the problems of social inequality, protect society, promote the fair and efficient operation of markets, and eliminate market problems. The main task of the state in the development of the digital economy is to ensure that individuals, households, and enterprises can use the opportunities provided by the digital economy, which includes the construction or promotion of digital infrastructure, the promotion of innovation, or the creation of a favorable legal regime [5]. When discussing the stages of development of legal support for the functioning of the digital economy, the analytical stage should be covered first. When modernizing state policy and the framework aimed at regulating the maintenance of the digital economy, it is necessary to analyze and assess the relevance of existing regulatory models, as well as the consistency and predictability of existing legislation [14]. Since new technologies generate new services and business models, it is necessary to determine first whether they need to be regulated in any particular way, and, if necessary, in what way [14]. According to Noel Jones, it is necessary to develop legislation that is not just aimed at regulating the functioning of the digital economy but is also aimed at promoting innovation. Traditional models of legal regulation in the

economic sphere may not take into account all the risks that may arise with the rapid development of the digital economy [2]. The Digital Economy Commission of the International Chamber of Commerce notes that guidelines can be more effective in regulating the use of new technologies and new business models within the digital economy as compared to the prescriptive rules that govern all activities in detail. In the latter case, this is because it is impossible to provide the necessary flexible regulation, and also because there are risks of premature obsolescence of legislative approaches [14]. According to Noel Jones, in order to regulate the functioning of the digital economy, an approach that is not aimed at proactive regulation based on forecasting but that is aimed at regulating harmonious social relations after their occurrence—taking into account all the necessary information—may be more efficacious [2].

4.4. Legal comprehensive support for the functioning of the digital economy as exemplified by the UK

Since the digital economy is a complex phenomenon and affects a variety of aspects of economic and other activities, it is not always possible to talk about the creation of specialized regulatory legal acts in this area. However, similar documents are valid in some countries. Let us consider this experience in the examples of the UK and France. In the United Kingdom, the United Kingdom Act of 2017 on the Digital Economy [15], was enacted, which was adopted in addition to the United Kingdom Act of 2010 on the Digital Economy [16]. The United Kingdom Act of 2010 on the Digital Economy aimed to define the functions of the United Kingdom Communications Authority by establishing provisions for copyright infringement online, the regulation of Internet domain registries, the regulation of the provision of television and radio services, the regulation of the use of the electromagnetic spectrum, and the regulation of certain other aspects (in accordance with the preamble to this regulatory act). According to the preamble to the United Kingdom Act of 2017 on the Digital Economy, the aim is to regulate electronic communications infrastructure and the provision of related services, to provide restrictions on access to pornography on the Internet, to ensure the protection of intellectual property in connection with electronic communications, to regulate data exchange, to establish the functions of the United Kingdom Liaison Office in relation to the BBC, to direct marketing regulation, to regulate the

establishment of Internet filters, to ensure the prevention or restriction of the use of communication devices in connection with drug trafficking offenses and to regulate the functioning of payment systems, etc.

4.5. Legal cluster (vector) regulation in the digital economy

A) Legal support of data protection

Legal issues in the digital economy are among the most complex in existence. In particular, researchers note the problems of legal support for data protection, which is crucial in the use and consolidation of information [17]. Access to data in the digital economy has become a critical factor in product development and innovation, and the collection and use of data by third parties raise many controversial issues regarding the protection of competition and the rights of individuals (Monopolies Commission, n.d.).

B) Legal regulation of competition

Another equally important aspect of the development of legislation in the field of the digital economy is the provision of competition. At the same time, researchers note that the problems of ensuring competition in the digital economy are becoming increasingly significant [1]. The rapid growth of innovations and the application of new technologies in the digital economy sometimes outpaces traditional regulatory models, as a result of which public policy may not adequately consider the growing competition in various industries [14]. Besides, some existing concepts of competition are not suitable for the digital economy, in particular, since technologically sophisticated and rapidly changing business models and the availability of a wide range of services can make it difficult to qualify any behavior as preventing competition [18]. In a modern technologically sophisticated digital economy, competition depends on efforts to maintain legal protection following intellectual property laws, and accordingly, effective antitrust regulation in this area should be based on new integrated approaches that require a more severe interaction between competition law and intellectual property law [19]. Dynamic competition based on continuous cycles of innovation, development, and disruption is paramount to the digital economy [1]. Effective competition must be protected from restrictions to ensure open markets, innovation, quality, and efficiency, as well as freedom of choice for consumers [20, 21]. The following are

distinguished as instruments for protecting competition in a digital economy:

- Prohibition on concluding anti-competitive agreements;
- Prohibition on the abuse of a dominant position in the market;
- Control of mergers to prevent market dominance and prevent the creation of significant obstacles to effective competition [18].

C) The formation and functioning of the digital economy have a significant impact on the functioning of national and international tax systems, in particular, due to the use of new ways of interacting with consumers, marketing goods and services, and generating income [22]. Accordingly, it is necessary to modernize tax legislation, including some general principles of taxation, as well as methods for calculating taxes [22].

5. Conclusion

The issue of legal support for the functioning of the digital economy is quite acute since optimal and universal ways to develop legislation in this area have not yet been found. The diffusion of new technologies is forcing companies to define new strategies, business models, and ways to compete against new opportunities and threats. Moreover, for this reason, it is also necessary to develop and promote appropriate state strategies and state policies aimed at strengthening digital ecosystems, promoting the harmonious development of relevant structures, and also promoting the creation of digital platforms for organizations [23-26]. Let us note that the change in legislative regulation should be carried out immediately in many areas since the nature of the digital economy itself is complex and covers a wide range of legal relations.

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