

Legal Regulation of the Cloud Services Market of Ukraine

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Abstract

Based on the analysis of the economic state of the cloud services market and trends of its development, it was concluded that cloud technologies have a significant impact on the activities of business entities, as well as state administration bodies of all developed countries of the world.

It was established that the cloud services market of Ukraine is at the formation stage, which is connected with the unsatisfactory economic condition of business entities due to the military aggression launched by the Russian Federation.

The current state of legal security of the cloud services market of Ukraine is studied; at the same time, it is substantiated that the Law “On Cloud Services” adopted by the Verkhovna Rada of Ukraine in February 2022 only lays the foundations for its legal development and further formation of a legal framework aimed at the comprehensive regulation of the relations arising from the provision and consumption of cloud services under market principles.

It is emphasized that for proper implementation of the Law provisions, the approval by the Cabinet of Ministers of Ukraine of a number of subordinate legal acts is required, namely: structure and order of the formation and use of electronic catalogs of cloud services and services of data processing centers; requirements to the providers of cloud services; procedure for providing cloud services related to the processing of the state information resources; procedure for the proposals development for the use of cloud services by state authorities, as well as a standard contract that must be concluded between the providers and users of cloud services.

Criteria for the quality and safety of cloud services that must be guaranteed by their provider, in case of crisis situations and cyber attacks, are proposed.

The expediency of supplementing the Law of Ukraine “On Cloud Services” with the provisions that empower the regulator of cloud services to inspect the providers of cloud services in the event that they provide the regulator with incomplete or false information, as well as to make requests that are mandatory for consideration by other addressees, is substantiated.

It is proposed to introduce legal liability of the officials of state bodies in case they do not return to Ukraine state information databases and their backup copies within six months after the termination or cancellation of the legal regime of martial law.

Keywords: cloud services, cloud computing technologies, cloud servers, regulator in the field of communication services.

1. Introduction

The development of cloud technologies is gaining momentum every year and is already having a noticeable impact on the functioning of private and state sectors of economy of the most developed countries of the world.

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Considering the urgency of the development of cloud technologies, in February 2022 the Federal Cloud Computing Strategy was presented in the USA, which defined a long-term program for the introduction of cloud technologies aiming to modernize the government, save budget funds for public governance, increase the level of information security of state services and the quality of state services (Federal Cloud Computing Strategy).

In September 2012, the European Commission published a strategic document entitled “Unleashing the Potential of Cloud Computing in Europe”, the purpose of which is to ensure the expansion of the use scope of cloud technologies in economy of the European Union. It was assumed that practical implementation of the developed strategy should contribute to the creation of 3.8 million additional jobs in Europe and the receipt of 160 billion EUR net profit every year, with a simultaneous reduction in the costs of the information technology by up to 30 %. The strategic document of the European Commission emphasizes that the introduction of cloud technologies is beneficial both for private and public sectors of economy, as it will facilitate the provision of the integrated and efficient public services. In addition, the use of cloud computing will stimulate promising scientific research because it will allow reliable storage and fast processing of huge information databases.

One of the key issues of the strategy is the development of standard terms and conditions of the contract with the regulation of the procedure for storing information after the expiration of its validity period, the procedure of the data disclosure and transfer to third parties. It is believed that the adopted document became the basis for further development of cloud technologies in Europe (Unleashing the Potential of Cloud Computing, 2012).

In turn, in June 2023, the National Institute of Strategic Studies published the Analytical Note “Prospects for the development of the cloud computing market in Ukraine: advantages and risks”, in which, in particular, it was established that cloud computing can significantly affect the global development, but their implementation is associated not only with reducing the costs for the intensification, but also with the risks of storing and transferring data sets. At the same time, taking into account that cloud providers are constantly improving, the statement was made that the specified problem will be overcome, and that the providers will manage to ensure the appropriate level of information security of cloud services. It is stated in the analytical note that, unlike the markets of the leading world economies, the Ukrainian cloud services market is in the stage of its formation, but it demonstrates active exponential growth, the maintenance of which in the future will lead to the formation of a new powerful sector of economy in Ukraine, built on modern technologies and infrastructure.

Experts of the National Institute of Strategic Studies formulated the recommendations aimed at ensuring further development of the cloud services market of Ukraine, including: modernization of the national regulatory and legal framework, taking into account the salinity and prospects for the development of cloud technologies in Ukraine and in the world, as well as making appropriate corrections to the Strategy for the information society development in Ukraine;

development of the national standards of reliability and quality of cloud services in Ukraine;

conducting a comprehensive analysis of the state, trends and prospects of the development of cloud services in Ukraine and the possibility of their use in public administration

(Perspectives for the development of the cloud computing market; State Agency for Science, Innovation and Informatization of Ukraine).

Currently, it can be confidently stated that the expectations of the expert environment have been fully met. The development of cloud computing has acquired a global character, and their implementation already requires due attention at the international level. Currently, numerous international forums are held both on a bilateral basis and the level of international organizations (WTO, OECD), dedicated to the promotion of cloud computing services, ensuring cyber security in a cloud environment, etc. In bilateral interstate dialogues, the governments of the USA, Japan, Canada, Germany and other leading countries of the world play a leading role.

Among specialists in the field of information technologies, cloud services are understood as providing the users with convenient access to powerful virtual resources for computer data processing, information storage, software and remote servers.

Currently, the following types of cloud services are actively developing in the world (Figure 1):

Infrastructure as a Service (IaaS) - provides the users with access to the infrastructure of cloud technologies (servers and information storage);

Platform as a Service (PaaS) – provides the uses with access to the platform for developing and deploying their own computer programs;

Software as a Service (SaaS) – provides the uses with free convenient access to various services from any remote device connected to the Internet. This type of cloud services is the most popular in business (Cloud services for business).



Figure 1. Types of cloud services

Among the main advantages of using cloud services by users, the following should be highlighted:

- 1) remote access to servers, computer programs and information repositories, which gives the employers an opportunity to arrange workplaces of their employees according to their place of residence or temporary stay, and, in this way, the issue of renting office premises, paying for utilities are removed from the agenda, that allows reducing the costs for business deployment and operational management;
- 2) increasing efficiency and improving the quality of organizational management, since regardless of the actual location of the head of a business structure or state body, it gets an opportunity to quickly process current information, adopt and implement managerial decisions;
- 3) possible introduction of the electronic documents management that leads to the reduced business expenses for office supplies, paper, maintenance of office equipment, formation

of cases in paper form and their archival storage, etc., which makes up a significant part of the budget of any organization;

4) possibility of holding the meetings (including interdepartmental), round tables, conferences, etc, in online mode, which reduces time for organization and holding such events, allows avoiding expenses for business trips, rental of conference rooms, payment of accommodation costs for participants of such events in hotels, and transport costs;

5) increasing the protection level of commercial, official, as well as personal information due to the fact that the use of cloud storage of information reduces the human factor and guarantees its reliable storage on secure remote servers;

6) avoiding the costs of installing own servers, their administration and maintenance, and paying the qualified personnel.

The experts specializing in the study of cloud technologies are almost unanimous in their opinion that their practical use helps businesses and governmental structures avoiding forced investments in new software platforms and, at the same time, receive additional income using useful functionality, save money while continuing to support business needs in the most flexible and efficient way (Cloud services for business).

At the moment, companies such as AWS, Azure, Google Cloud, Alibaba Cloud (the latter company is represented mainly on the Chinese market), which are technological leaders in the development of IaaS services, occupy the main share of the cloud services market in the world. Specialists include OVH, iLand, GreenCloud, which focus on a certain region, as less powerful providers. An example of a local service provider is De Novo, which focuses on the Ukrainian market, and at the same time competes well with the world's leading providers on this market (Types of cloud services).

In our opinion, military aggression of the Russian Federation against Ukraine, which began in 2014, became one of the catalysts of the active development of cloud technologies in Ukraine, because due to active hostilities, commercial companies, as well as state and financial institutions that worked in the eastern regions, were forced to evacuate and, in connection with this, moved their own infrastructure to central and western regions of the state. During hostilities, many organizations either physically lost their servers with a large amount of information, or were deprived of the possibility to evacuate due to the capture by enemies. In these conditions, the need to transfer information databases from own servers to cloud storage became obvious, that guaranteed the preservation in the event of escalation of the military conflict and expansion of the theater of military operations, which actually took place in February 2022, while reducing the costs of deploying the organization in a new region of the country.

We believe that a general catalyst that pushed the development of the cloud services market around the world is the COVID-19 pandemic, which began at the end of 2019. As a result, the vast majority of commercial structures were forced to switch to remote work, which required the transfer of information to cloud storage and use of cloud servers.

Thus, according to TechJury, only in 2020, due to the COVID-19 disease pandemic, more than 61% of the global companies moved their employees' workplaces to cloud services and introduced the remote work mode (The Rise of Cloud Migration and Management Services).

According to the Statista (Cloud services account for...) website, the share of corporate data of companies stored in cloud is constantly increasing; if in 2015 it was 30 %, then in

2022 it was more than 60 %. According to the analytical forecasts of the cloud services market, which came true, by the end of 2022, 70 % of the world's enterprises integrated their processes in the cloud, because unlike local servers, cloud storage has potentially unlimited memory resources, which simplifies business scaling (Information compression in the cloud).

At the end of 2022, 2/3 of the global cloud services market was accounted for by Amazon Web Service, Microsoft Azure and Google Cloud. These companies are fighting hard for the leadership in the world and invest billions of US dollars every year in building new data centers, improving the level of cyber security and globally expanding the geography of services provision. Among the biggest providers in Ukraine, we should note De Novo with its 17,3% share, and GigaCloud with 16,3 % share. At the same time, the first place in the cloud services provision in Ukraine belongs to the foreign company Amazon Web Services, which share makes 20,4 % (Figure 2) (What the cloud services market waits in Ukraine).

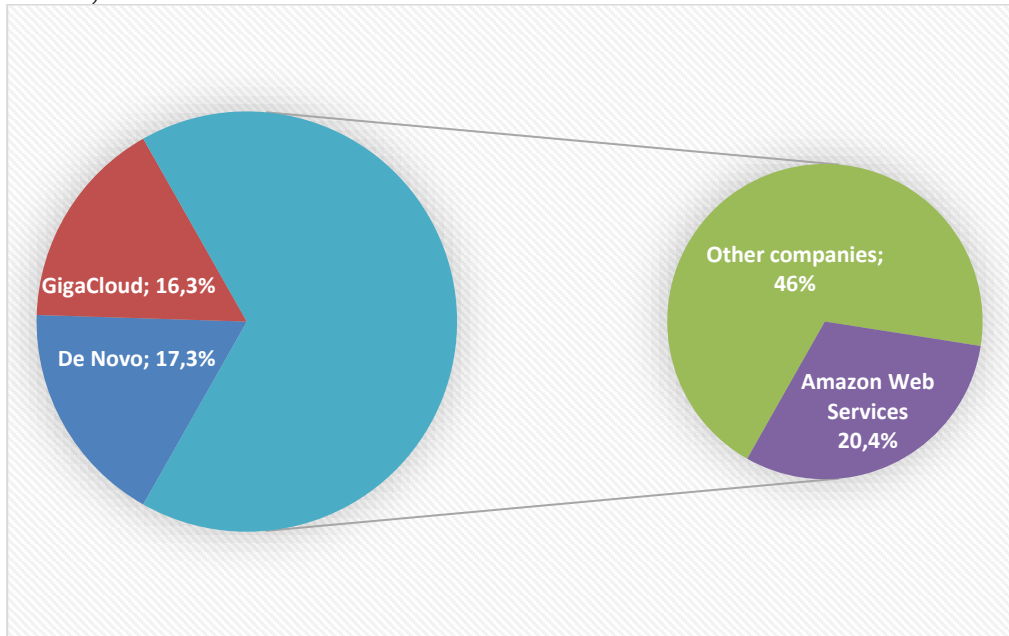


Figure 2. Shares of cloud service providers represented on the Ukrainian market

The above confirms that domestic companies are able to adequately compete in the cloud services market and do not allow the world leaders in this sector of economy gaining a dominant competitive or monopoly position in the Ukrainian market, which is the evidence of the high professional potential of Ukrainian IT specialists.

According to the publicly available analytics, expenditures of the cloud service users should exceed US \$ 591 billion by the end of 2023, and reach US \$ 1 trillion by the end of 2026. It is expected that by the end of 2025, cloud technologies will be used by more than 85 % of all companies of the world. Unfortunately, in Ukraine, expenditures of the cloud services users are much lower, and by the end of 2022 were equal to only US \$ 46.2 million

(What the cloud services market waits in Ukraine). To some extent, this can be explained by the fact that after launching a full-scaled war against Ukraine in February 2022, the world's leading companies provided Ukrainian businessmen with free access to cloud technologies. However, the main reason behind the lag is the lack of financial resources for the introduction of advanced technologies.

The military aggression promoted not only business, but also state authorities and local self-government bodies to switch to active use of cloud services. It is this that can explain the stability of government electronic services in the conditions of constant hacker attacks and missile and bomb attacks by the aggressor country, which are aimed at destroying the civil infrastructure and the state management system.

Thus, cloud technologies already have a significant impact on the development of all spheres of public life and economy of our country as a whole, which confirms the need for a comprehensive scientific study of all aspects of legal support for the cloud services market in Ukraine.

2. Literature Review

Until now, comprehensive studies of the cloud services market of Ukraine as a socio-economic phenomenon, through the prism of the science of economic law, have not been conducted. The published works of such scientists as G. Androshchuk, O. Baranov, Yu. Babutin, V. Bryzhko, O. Diakovskiy, O. Hron, V. Lopatin, A. Novytskyi, A. Pohorelenko and others are mainly devoted to the problematic issues of protecting personal data of individuals (Baranov O. Directions of perspective research, 2016, p.15-31; Novytsky A., Diakovskiy O. Legal regulation of the information, 2017, p.177-181; Hron O., Pohorelenko A. Problems on personal data protection, 2018, p.102-108).

Other researchers (R. Skrynko, R. Sopilnyk) considered the issue of legal regulation of the use of fraudulent technologies in the context of the personal data processing and came to the conclusion that the use of these technologies should be based on the principles of legality, justice, free access of individuals to their own personal data, as well as protection of their personal data from illegal processing by third parties (Skrynkovsky R., Sopilnyk R et al. Principles of legal regulations, p. 2022–2029).

3. Results and Discussion

The insufficient state of scientific development of the specified area of legal regulations can be partially explained by the lack of a corresponding regulatory framework in Ukraine.

In February 2022, the Verkhovna Rada of Ukraine adopted the Law “On Cloud Services”, which for the first time regulated legal relations arising from the provision of cloud services at the legislative level; the specifics of their use by state authorities, local self-government bodies, military formations, state enterprises, institutions, organizations, and other subjects of legal relations (hereinafter referred to as – the Law) are defined (On Cloud Services: Law of Ukraine, 2022).

The Law lays the foundations for legal development of the cloud services market of Ukraine and further formation of the legal framework required for the comprehensive

normalization of the relations arising from the provision and consumption of cloud services within the market – with simultaneous endowment of competent state authorities with the powers of a regulator of this sphere of legal relations and the powers to form and implement the state policy in the specified sector of economy.

The Law defines private users of cloud services, which include all individuals and legal entities that use cloud services for their own needs, and public users of cloud services, which are state authorities, local self-government bodies, as well as state enterprises, institutions, organizations or other subjects of authority, or subjects acting based on the delegated authority.

The concept of cloud computing technology is introduced, these are technologies on providing remote access at the user's request to the cloud infrastructure through electronic, communication networks; cloud (cloud infrastructure) – a set of cloud resources that can be quickly provided to the user of cloud services through global and local data transmission network; cloud services – services for providing cloud resources using cloud computing technologies (Unleashing the Potential of Cloud Computing, 2012; On Cloud Services: Law of Ukraine, 2022). The activity of the data processing centers in Ukraine is legalized, these are specialized complexes consisting of engineering information, electronic communication and hardware and software infrastructure that provide services for data storage and processing, including provision of cloud services, data backup, data transmission, hosting services, etc. (hereinafter – DPC).

Article 3 of the Law establishes that cloud services in Ukraine can be provided in one of the following ways (Figure 3):

private cloud – cloud infrastructure used and controlled by one user;

collective cloud – cloud infrastructure shared among a group of interconnected users united by common needs and controlled by these users or their representatives;

public cloud – cloud infrastructure available to an indefinite number of users controlled by a cloud service provider;

hybrid cloud – cloud infrastructure, which is a combination of two or more different cloud infrastructures (private, collective or public), connected by certain technologies.

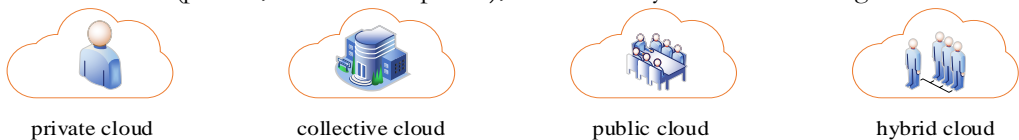


Figure 3. Ways of providing cloud services

Relation participants in the field of cloud services include users and providers of cloud services, service providers of data processing centers, and state authorities (Cloud services for business: features of use; On Cloud Services: Law of Ukraine, 2022).

State management in the field of cloud services is entrusted by the Law to the Cabinet of Ministers of Ukraine; the central body of the executive power, which forms and implements the state policy in the cloud services provision (represented by the Ministry of Digital Transformation of Ukraine); the body authorized to monitor compliance with the legislation on the personal data protection; Ministry of Defense of Ukraine; The National

Bank of Ukraine and the Central Election Commission (Types of cloud services: which to choose...; On Cloud Services: Law of Ukraine, 2022).

The inclusion of the Ministry of Defense of Ukraine, the National Bank of Ukraine and the Central Election Commission in the circle of state agencies that manage cloud services is due to the specifics of the legal regulation of the defense and financial spheres, as well as the specifics of the election process and referenda.

It should be noted that the Law had a flaw related to the improper separation of the functions of the central executive body, which forms and implements the state policy in the provision of cloud services, and the regulator of these services, which to some extent complicates proper implementation by the state of the control and regulatory powers in the specified area.

However, the indicated deficiency of the rule-making technique was corrected by the Law “On Amendments to Certain Laws of Ukraine Regarding the Improvement of State Administration and Regulation in the Cloud Services Provision” adopted by the Verkhovna Rada of Ukraine on August 23, 2023 (On amendments to some laws of Ukraine on the improvement, 2023), which entrusted the performance of the functions of the regulator of communication services to the State Service of Special Communication and Information Protection of Ukraine by introducing corresponding provision to the first part of Article 7 of the Law “On the State Service of Special Communication and Information Protection of Ukraine” (hereinafter – the Regulator) (On the State Service of Special Communication...: Law of Ukraine of February 23, 2006. No. 3475-IV).

The Regulator’s powers include ensuring the formation and implementation of the state policy in the cloud services provision; maintaining a list of providers of cloud services and/or services of DPCs; entry, changing or deleting information about providers of cloud services and/or services of DPCs; registration of the providers of cloud services and/or services of data processing centers; determining the structure, order of formation and use of electronic catalogs of cloud services and/or services of DPCs, etc. (The Rise of Cloud Migration and Management Services; On Cloud Services: Law of Ukraine, 2022).

It should be noted that the Law of Ukraine “On Amendments to Certain Laws of Ukraine Regarding Improvement of State Administration and Regulation in the Provision of Cloud Services” will enter into force on December 27, 2023. Therefore, that is from this date that the Administration of the State Service of Special Communications and Information Protection will acquire the Regulator’s status and can start working on practical implementation of the provisions of the Law of Ukraine “On Cloud Services”.

The full implementation of the Law involves the development by the Regulator and submission for the approval to the Cabinet of Ministers of Ukraine of a number of secondary legal acts, namely:

structure and procedure for forming and using electronic catalogs of cloud services and services of DPCs;

requirements to the providers of cloud services and DPCs;

procedure for providing cloud services and services of DPCs related to the processing of state information resources;

procedure for preparing proposals for the use of cloud services and services of data processing centers by state authorities and their consideration;

standard contract for providing cloud services and/or services of DPCs to a public user and an object of the infrastructure, with the definition of the essential conditions therein, including: subject and term of the contract; procedure and conditions for providing the users with access to cloud services; procedure for providing the users with access to services of DPCs; procedure for personal data protection of the users of cloud services; requirements for cyber security and uninterrupted operation of the system using cloud computing technologies, order and terms of data transfer; procedure for terminating the contract, etc.

When developing requirements for the providers of cloud services and/or services of DPCs, it is considered necessary for the Regulator to define criteria for valid use of these services, which must meet fair expectations of users regarding the proportionality of the quality of the received cloud services to the level of possible risk of incidents and cyber attacks.

In particular, the basic level should guarantee the users to minimize only the main known tasks; the substantial level – to guarantee minimization of both the main known tasks and the risks carried out by offenders with limited skills and/or resources; the high level should guarantee the risks minimization of the most advanced cyber attacks, which are carried out by the offenders with significant skills and resources.

Pursuant to Article 7 of the Law of Ukraine, the approval of the procedure for maintaining the list of providers of cloud services and/or services of data processing centers is assigned to the authority of the Administration of the State Service for Special Communications and Information Protection of Ukraine as the Regulator.

Article 8 of the Law establishes an obligation of the provider of cloud services and/or services of DPCs not to use for the provision of cloud services the technical means that are located on the territory not under the control of state authorities of Ukraine, as well as on the territory of the Russian Federation. At the same time, the specified article does not contain the norms that prohibit processing and storage of the information received from public users on technical means located in the territories of other countries, which increases the risk of it getting to foreign special services and makes the activities of Ukrainian authorities vulnerable.

The entry of information to the List of providers of cloud services and/or services of DPCs (hereinafter – the List) will be carried according to the application principle, which provides for the submission of applications by the providers of cloud services in the form approved by the Regulator (Cloud services account for...; On Cloud Services: Law of Ukraine, 2022). Taking into consideration the penetration of IT-technologies into all spheres of the social life, it seems correct to introduce both written and electronic forms of this statement by the Regulator.

Pursuant to Article 9 of the Law, after considering the application of the cloud service provider, the Regulator is obliged within 15 working days to make a decision to include the provider of cloud services and/or services of DPCs in the List or to reject it. The adopted decision is subject to publication on the official website of the Regulator, while the decision to refuse to include the provider of cloud services and/or services of data processing centers in the List must be motivated to guarantee the provider of cloud services and/or services of DPCs the right to appeal such a decision of the Regulator to the administrative court in accordance with the procedure established by the Code of

Administrative Procedure of Ukraine (Code of administrative procedure of Ukraine, 2017).

The grounds for refusal to include the provider of cloud services and/or services of DPCs in the List may become a discovery of inaccurate or incomplete information in the application and/or the documents attached to it, as well as corrections or additions, or failure to submit all documents provided in Article 8 of the Law. In this case, it is not clear in what way the Regulator can detect the inauthenticity and/or incompleteness of the submitted information, given that the Law does not define the mechanism for verifying the reliability and/or information specified by the provider of cloud services and/or services of data processing centers in applications on inclusion in the List, as well as in the documents attached to these applications.

The above requires making appropriate amendments to Article 7 of the Law and empowering the Regulator to conduct appropriate checks and make requests, including to third parties who are mandatory for consideration by the addressees, in case of doubts about the authenticity or incompleteness of the cloud service provider and/or services of data processing centers. Conducting such inspection should be the basis to terminate the 15-day period established for making a decision on entering the applicant into the List.

Part 5 of Article 9 of the Law requires the providers of cloud services and/or services of data processing centers to notify within 5 working days of the grounds for the Regulator to make amendments to the List and to provide relevant documents to confirm this. At the same time, the Law does not provide for responsibility for non-fulfillment of the established obligation, which may cause the providers of cloud services and/or services of data processing centers to ignore this legal prescription.

As stated above, providing the users with cloud services and/or services of DPCs will be carried out exclusively on a contractual basis. The contract between the user and provider of cloud services and/or services of data processing centers must be concluded exclusively in writing—based on a standard contract approved by the Cabinet of Ministers of Ukraine (What the cloud services market waits in Ukraine; On Cloud Services: Law of Ukraine, 2022). The subject of the Agreement on provision cloud services and/or services of DPCs is submitting in a clearly defined manner of one or more cloud services chosen by the user for a fee.

According to Part 3 of Article 184 of the Economic Code of Ukraine, the conclusion of business contracts based on standard contracts must be carried out in compliance with the conditions provided for in Article 179 of this Code, not otherwise than by drawing up the contract in the form of a single document drawn up in accordance with the requirements of Article 181 of this Code and under the rules regarding the use of a standard contract (The Economic Code of Ukraine, 2003, p.144).

Thus, Part 4 of Article 179 of the Economic Code of Ukraine establishes that when conducting business contracts based on a standard contract approved by the Cabinet of Ministers of Ukraine, the parties may not deviate from the content of such a contract, but are entitled to specify its terms.

Therefore, when entering into contractual agreements on the provision of cloud services and/or services of data processing centers, the parties do not have the right to deviate from the terms of the standard contract approved by the Cabinet of Ministers of Ukraine, at the same time, they will have an opportunity to specify its individual provisions without

going beyond general rules established by it. In addition, the conclusion of a contract on the provision of cloud services by a public user requires mandatory compliance with the procedure established by the Law of Ukraine “On Public Procurement”.

According to Article 11 of the Law, the peculiarity of the use of cloud services and/or services of DPCs to public users is that the provision of such services must be carried out in compliance with the requirements of legislation on personal data protection, information protection and cyber security. The Law prohibits processing of the information covered by the Law of Ukraine “On State Secrets” (On the State Secret: Law of Ukraine, 1994), as well as official information, state and unified registers, the creation and operation of which is established by the law, using cloud resources located abroad or on the temporary occupied territory of Ukraine, or belong to the state recognized by the Verkhovna Rada of Ukraine as an aggressor state or an occupying state.

The law stipulates that the Procedure for providing cloud services and/or services of data processing centers related to the processing of state information resources, as well as information with limited access, must determine the procedure for mandatory backup and storage of backup copies in independent systems; procedure for the data transfer from the user of cloud services to their provider and vice versa; procedure for the data transfer from one provider of cloud services and/or services of data processing centers to another provider; procedure for providing complete information necessary for evaluating security of the systems of cloud service providers and/or services of DPCs.

Taking into account the fact that due to hostilities on the territory of Ukraine, some Ukrainian providers of cloud services and services of data processing centers have moved engineering, software and hardware infrastructure abroad, we consider it appropriate to supplement the Law with Transitional Provisions, which would impose on such service providers the obligation to return to Ukraine the withdrawn engineering infrastructure and software-hardware complexes, with an indication of the specific term for the fulfillment of this obligation. In the opposite case, there is a threat that even after the end of the war, the cloud infrastructure taken abroad will not be returned, which will negatively affect both the development of the domestic cloud services market and the level of information preservation in these cloud resources.

Thus, at the beginning of the full-scale war, the Board of the National Bank of Ukraine adopted Resolution No.42 of March 8, 2022 “On the Use of Cloud Services by Banks in the Conditions of Martial Law in Ukraine” (hereinafter – the Resolution No. 42) (How to save cloud services by banks in the conditions..., 2022). Under Clause 1 of this Resolution, the banks of Ukraine are allowed to process and store personal data of clients, as well as information containing banking secrets, during the martial law period and for two years after its cancellation, using cloud services provided using technical equipment located in the member states of the European Union, the European Union, Great Britain, the USA and Canada. At the same time, the responsibility for the preservation, confidentiality and integrity of information about banking operations and the protection of personal data of customers is assigned by Resolution No. 42 to the banks that have switched to the use of the specified cloud services.

Therefore, thanks to professional actions of the National Bank of Ukraine and its timely adoption of Resolution No. 42, the banking system of Ukraine was preserved and bank payments were ensured in the conditions of large-scale missile and bomb attacks on the

entire territory of Ukraine, the destruction of the infrastructure facilities and resulting energy lockdowns.

Resolution No. 1500 of the Cabinet of Ministers of Ukraine of December 30, 2022 approved the Procedure for the transfer, preservation, operation and access to state information resources (public electronic registers) and their backup copies located on cloud resources and/or services of data processing centers located outside of Ukraine (hereinafter – the Resolution No. 1500) (Some issues on the operation provision of state information resources, 2022). This Resolution allows placement of state information resources outside Ukraine, these are public electronic registers that do not contain official information and information constituting a state secret, as well as their backup copies on cloud resources and/or in data processing centers. This permission is valid during the period of legal regime of martial law in Ukraine and six months after its termination or cancellation.

It was definitely a forced, but a fully justified measure. However, currently there is no responsibility for the officials of state bodies for their failure to comply with the order regarding the return to Ukraine of state information resources and their backup copies after the termination or cancellation of the legal regime of martial law. Taking into consideration that public information register contain information about citizens of Ukraine, in particular about their property and family status, place of residence, etc., leaving these information resources on the territory of other countries can negatively affect the state of the national security of our country.

Under these circumstances, there is an urgent need to introduce legal liability of non-compliance by officials of state bodies with the requirements of legislation on the return to Ukraine of state information databases and their backup copies within six months after the termination or cancellation of martial law.

4. Conclusions

The conducted research allows us to state that the cloud services market has a global tendency towards active exponential growth. This, first of all, is due to numerous advantages of using cloud services, which allows not only to significantly reduce the costs for ensuring the activities of economic organizations and authorities, but also to improve the quality of the services provided by users of cloud services.

Unlike the world's leading economies, the cloud services market in Ukraine is still in its evolving stage, which is due to the lack of free working capital needed for the transition of new technologies, as well as the aggressive war waged by the Russian Federation against an independent state, which negatively affects the economic condition of economic entities of all forms of ownership.

The adoption of the Law “On Cloud Services” by the Verkhovna Rada of Ukraine laid the foundations for the legal regulation of the provision of cloud services and created the prerequisites for the formation of the legal framework required for comprehensive normalization of all relations arising from the provision and consumption of cloud services. However, the analysis of individual provisions of this Law shows its imperfection and the need for amendments and additions.

In particular, the issues of prioritizing the regulation of such cloud services as security, services on cyber defense provided by data processing centers require further research being implemented as legislative and regulatory amendments. To create an effective model of the activity of cloud services providers in the Ukrainian market in current conditions, it is necessary to improve the regulatory and technical mechanism for preserving state information resources, using various cloud services providers and/or services of data processing centers, including foreign providers.

In addition, full implementation of the Law provisions depends on the effectiveness of the regulatory activity of the Regulator of communication services, which performance is entrusted to the Administration of the State Service for Special Communications and Information Protection of Ukraine, as well as a quality of the number of regulatory acts submitted by the Regulator to the Cabinet of Ministers of Ukraine for approval, which determine the requirements for providers of cloud services and/or services of data processing centers, the procedure for providing these services, the creation of an electronic catalog, etc.

State control being implemented by the Regulator in the cloud services sector, as well as the procedure and terms for the return to Ukraine of engineering, software and hardware equipment of the cloud computing infrastructure exported abroad due to military operations also require improvement at the legislative level.

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