



CLOUD COMPUTING IN PRIVATE LAW

Olena Pikhurets

Kharkiv National University of Internal Affairs, Ukraine

<https://orcid.org/0000-0001-7512-951X>

E-mail: pikhurets@gmail.com

Svitlana Iasechko

Kharkiv National University of Internal Affairs, Ukraine and Avignon University, France

<https://orcid.org/0000-0003-4058-9959>

E-mail: iasechko.sv@gmail.com

Yevhen Hrekov

Yaroslav Mudryi National Law University, Ukraine

<https://orcid.org/0000-0003-3123-3838>

E-mail: hrekov.y@ukr.net

Maryna Hrekova

Yaroslav Mudryi National Law University, Ukraine

<https://orcid.org/0000-0003-1475-2038>

E-mail: maryna.hrekova@gmail.com

ABSTRACT

In the proposed article, a systematic analysis of legislative, doctrinal, and practical approaches in the field of private law regulation of relations related to cloud computing in Ukraine and the EU was carried out. This comprehensive study enabled the identification of both general and specific features of cloud computing, providing an opportunity to substantiate the optimal contractual forms for legal relations involving cloud computing. The article delves into the essence of cloud computing, presenting the main concepts existing within the science of private law, explaining their origins, and briefly analyzing the key legal acts that are pivotal in the contemporary regulation of cloud services. Through this analysis, the article highlights the legislative framework governing cloud computing, elucidating the complexities and nuances inherent in these regulations. Furthermore, the article examines the issues prevalent in contractual relations concerning the provision of access to (or the use of) cloud computing services. A comparative analysis of the contractual structures mediating the use of cloud computing under the legislation of Ukraine and the EU is conducted, shedding light on the differences and similarities between these jurisdictions. Special attention is paid to the multifaceted and intricate nature of the relationships that arise from the access to or use of cloud computing. These relationships offer a fertile ground for testing the principle of freedom of contract in practice, particularly in its interaction with copyright laws and cloud services regulations. The authors provides an in-depth analysis of various contract qualification options for the provision of cloud computing services, including lease agreements, license agreements, service provision agreements, mixed agreements, and other models. The article presents arguments for and against each contractual model, supported by both domestic and foreign judicial practices and a thorough analysis of the relevant legislative provisions. The conclusion drawn from the study indicates that the current legislation lacks specific legal norms that adequately



address the rapid evolution of cloud computing-related relations, resulting in a problem of insufficient legal certainty. This calls for the development of more precise and adaptable legal frameworks to keep pace with technological advancements and the complexities of cloud computing.

Keywords: cloud computing technologies, cloud computing, cloud services, information technologies, license agreement, software, private law, mixed contract, lease, service, contract, information.



COMPUTAÇÃO EM NUVEM NO DIREITO PRIVADO

RESUMO

No artigo proposto, foi realizada uma análise sistemática das abordagens legislativas, doutrinárias e práticas no campo da regulamentação do direito privado das relações relacionadas à computação em nuvem na Ucrânia e na UE. Esse estudo abrangente permitiu a identificação de características gerais e específicas da computação em nuvem, proporcionando uma oportunidade de fundamentar as formas contratuais ideais para relações jurídicas envolvendo a computação em nuvem. O artigo se aprofunda na essência da computação em nuvem, apresentando os principais conceitos existentes na ciência do direito privado, explicando suas origens e analisando brevemente os principais atos jurídicos que são fundamentais na regulamentação contemporânea dos serviços em nuvem. Por meio dessa análise, o artigo destaca a estrutura legislativa que rege a computação em nuvem, elucidando as complexidades e nuances inerentes a esses regulamentos. Além disso, o artigo examina as questões predominantes nas relações contratuais relativas ao fornecimento de acesso a (ou ao uso de) serviços de computação em nuvem. É realizada uma análise comparativa das estruturas contratuais que mediam o uso da computação em nuvem de acordo com a legislação da Ucrânia e da UE, esclarecendo as diferenças e semelhanças entre essas jurisdições. É dada atenção especial à natureza multifacetada e intrincada dos relacionamentos que surgem do acesso ou uso da computação em nuvem. Essas relações oferecem um terreno fértil para testar o princípio da liberdade de contrato na prática, particularmente em sua interação com as leis de direitos autorais e os regulamentos de serviços em nuvem. O autor fornece uma análise aprofundada de várias opções de qualificação de contrato para o fornecimento de serviços de computação em nuvem, incluindo contratos de arrendamento, contratos de licença, contratos de prestação de serviços, contratos mistos e outros modelos. O artigo apresenta argumentos a favor e contra cada modelo contratual, apoiados por práticas judiciais nacionais e estrangeiras e uma análise completa das disposições legislativas relevantes. A conclusão do estudo indica que a legislação atual carece de normas jurídicas específicas que abordem adequadamente a rápida evolução das relações relacionadas à computação em nuvem, resultando em um problema de segurança jurídica insuficiente. Isso exige o desenvolvimento de estruturas jurídicas mais precisas e adaptáveis para acompanhar os avanços tecnológicos e as complexidades da computação em nuvem.

Palavras-chave: tecnologias de computação em nuvem, computação em nuvem, serviços em nuvem, tecnologias de informação, contrato de licença, software, direito privado, contrato misto, arrendamento, serviço, contrato, informação.

1 INTRODUCTION

Currently, information technologies are penetrating deeper and deeper into civil circulation, new issues and problems related to their proper legal regulation are emerging. Now you will not surprise anyone with the wide application of innovative technologies, including "smart" electric networks (Smart Grid), a new form of interaction of devices connected to the Internet (Internet of Things), big data analytics technologies



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(Big Data), etc.), cloud computing technologies (cloud computing, cloud technology). The mentioned technologies are considered by the European Union as key modern technologies that create the infrastructure for the development of the data management economy. However, it is cloud computing technologies (cloud computing technologies, cloud computing, cloud services) in the modern world that are given special attention as a strategic prospect for the development of the EU IT sphere, which has an impact on important areas of human life and society as a whole.

The world's leading participants in the IT sphere: Amazon, Microsoft, Google, Yahoo, EMC, Oracle, Yandex, IBM and many others have long appreciated their advantages and actively use cloud computing, and accordingly offer a wide selection of useful services and tools. However, the popularity of cloud computing does not correspond to their corresponding regulatory and legal regulation, which complicates relations in this area. Thus, it is possible to note certain problems in the application of legislation in the field of taxes, personal data, licensing of certain types of commercial activity, and the actual application of cloud technologies is still not clearly formalized. Relations with the use of cloud computing cannot exist outside of private law regulation, therefore there must be an adequate legal mechanism that would make it possible to effectively introduce them into economic circulation.

After all, the lack of proper legislative regulation of relations related to cloud computing in Ukraine can affect the growth of offenses in the field of information relations and intellectual property rights.

The purpose of the work is a systematic analysis of legislative, doctrinal and practical approaches in the field of private law regulation of relations related to cloud computing in Ukraine and the EU, which will reveal general and specific features of cloud computing and provide an opportunity to justify the optimal contractual forms of civil legal relations using cloud computing. The tasks of the article are to reveal the essence of cloud computing, to analyze the problems of using cloud computing in contractual relations, to carry out a comparative analysis of contractual structures that mediate the use of cloud computing according to the legislation of Ukraine and the EU, etc.

A review of the literature shows that the following outstanding scientists and practitioners laid the basic foundation for the study of cloud computing application problems: E. Bondar, N. Davydova, K. Zerov, O. Kokhanovska, H. Stakhyria, etc. Foreign scientists were also engaged in the study of contractual legal relations in the field of cloud computing, in particular: Erl Th., Mark D. R., Mell P., Puttini R., Spindler

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G., etc., who contributed to the study and research of issues related to cloud computing in private law. However, the lack of proper legal regulation dictates the need for new scientific research to clarify the legal nature of cloud computing and the contractual forms that mediate the use of this technology under the legislation of Ukraine and the EU.

2 METHODS

The method of system-structural analysis was used to establish the legal nature and place of the category of good faith in the system of principles of civil law and general principles of civil legislation. The structural-functional method made it possible to find out the components and functional purpose of the principle of good faith. The method of specific sociological research was used in the study of judicial practice and the identification of the law enforcement significance of the principle of good faith. The results of the dogmatic (logical) analysis were used in the formulation of conclusions and proposals in the article, taking into account the requirements for certainty, consistency, consistency and validity of judgments within the framework of general theoretical and civil law constructions.

3 RESULTS AND DISCUSSIONS

The application of cloud technologies in the global information space still requires an agreed legal regulation of the legal relationship between the provider and the user. At the same time, over the last decade, cloud technologies have become increasingly popular not only among large business companies, government agencies, but also among private users. Cloud technologies are a model of providing convenient network access to computing power and resources (server, software, data compilation (base), storage, etc.) on a remote server on the Internet.

Cloud technologies allow remote processing (computation) and data storage. This technology provides users of the Internet, access to computer resources of the server and the use of software as an online service. That is, if there is an Internet connection, you can perform complex calculations, process data using the capabilities of a remote server (Bondar, E., & Horohovskyi, S., 2011). The term "cloud" is a metaphor representing a complex infrastructure that hides all the technical details of its operation from the end user, who is not interested in the process, but the result (Erl, T., Puttini,



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R., & Mahmood, Z., 2013). Cloud computing is a model of providing ubiquitous and convenient on-demand access via the Internet to a common pool of configurable computing resources (for example, communication networks, servers, data storage facilities, applications, and services) that can be quickly provided and released with minimal administrative costs and appeals to the provider (Mell, P., 2011). Where, the purpose of cloud technologies is to provide users with quality services with guaranteed quality under the conditions of preserving the integrity, availability and confidentiality of information resources.

The specified resources are located on the remote servers of the right holder and can be quickly provided or withdrawn with minor costs and an appeal to the provider. All actions with a dedicated set of resources are carried out in the "cloud", where the "cloud" is a complex infrastructure that hides the technical details of its operation from the user, who is not interested in the process, but in the result. Accordingly, cloud computing – refers to a style of computing in which various resources – services, applications, data, and other often virtualized resources – are integrated and provided as a service over the Internet). This is a technology of distributed data processing in which computer resources and capacities are provided to the user as an Internet service or through a local network using web technologies.

At the same time, the regulatory and legal regulation of relations regarding cloud computing lags far behind the dynamics of the development of the IT sphere not only in Ukraine, but also throughout the world. For example, there is still no international agreement that would unify the terminology in the field of cloud computing, although the technology is cross-border, and data processing has actually become a global process. However, certain steps are still being taken to establish the regulatory regulation of relations related to cloud computing. But the legislation of Ukraine and the EU is at the stage of formation. Therefore, there is almost no or insufficient special legal regulation of the use of cloud computing in various spheres of social relations. Of course, the legal regulation of the use of the latest technological achievements in the IT sphere will objectively be late, as the legislator needs time to pre-think and understand the essence of modern technologies. We also note the complete absence of court practice in Ukraine regarding the settlement of conflicts of interests of users and cloud computing providers.

Thus, the EU has begun intensive work on the modernization of the regulatory framework in the IT sphere (cloud computing). On September 27, 2012, the European Commission presented the Strategy for the Development of Cloud Computing, which

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is entitled Final Communication of the European Commission to the European Parliament, the Council of Europe, the European Economic and Social Committee and the Committee of the Regions of the European Union "Unleashing the Potential of Cloud Computing in Europe". Section 3.2 of the Strategy contains tasks related to updating standards in the IT sphere; certifications of reliable providers of cloud technologies; safe and fair contract terms; creation of the European cloud partnership for the introduction of innovations and their development in the public sector. This partnership is led by a Steering Board whose report substantiates the concept of establishing a European Cloud Partnership as a basis for requirements for cloud computing best practice. Special attention was paid to the need not only for legal regulation of cloud technologies, but also for all unusual and, first of all, innovative technologies and the need for legal certainty. Because uncertainty often leads to negative decisions on new technologies, even if there are no sufficiently important reasons for this".

On December 19, 2017, the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) developed one of the most important achievements in the field of legal regulation of relations related to cloud computing, namely: an international standard in the field of cloud computing (ISO/IEC Standard 17788 - Cloud Computing - Overview and Glossary). Where such categories as "Software as a Service (SaaS)", "Platform as a Service (PaaS)" and "Infrastructure as a Service" are explained (IaaS)). In addition, terminology for "cloud" deployment models such as "public" and "private cloud" is defined.

In Ukraine, the use of cloud technologies is regulated by the general norms of the current legislation in the field of information relations and the general provisions of private law, that is, by the analogy of law and law. In turn, on March 24, 2016, the draft Law "On Amendments to Certain Legislative Acts of Ukraine Regarding Information Processing in Cloud Computing Systems" was registered in the Verkhovna Rada of Ukraine under No. 4302, which should correct the situation with the use of cloud computing in the private sphere. However, the draft law has not yet been adopted. However, rather important Decrees of the President of Ukraine No. 685/2021 of October 15, 2021 "On the Decision of the National Security and Defense Council of Ukraine of October 15, 2021 "On Information Security Strategy", No. 447/2021 of August 26, 2021 have been put into effect "On the decision of the National Security and Defense Council of Ukraine dated May 14, 2021 "On the Cybersecurity Strategy of Ukraine" and No. 47/2017 dated February 25, 2017 "On the decision of the National



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Security and Defense Council of Ukraine dated December 29, 2016 "On the Doctrine of Information Security of Ukraine", as well as the Law of Ukraine "On the Basic Principles of Ensuring Cyber Security of Ukraine" dated 05.10.2017 No. 2163-VIII was adopted, and according to which the current challenges and threats to the national security of Ukraine in the information sphere are defined, strategic goals and tasks aimed at countering such threats, protecting the rights of individuals to information and protecting personal data. The main areas of implementation of the mentioned normative acts are the implementation of intelligent information-analytical and "cloud" technologies, integrated database systems and popularization of knowledge in the information field. At the same time, these acts do not give us answers to questions about the specifics of cloud computing application in the private legal sphere.

The Civil Code of Ukraine] and special legislation does not directly provide for the regulation of relations related to cloud computing, which leads to a decrease in the effectiveness of legal protection and protection of rights to the results of intellectual and creative activities that are created, used or distributed with the use of cloud computing, taking into account the modification of such important categories as "copying", "reproduction", "use of an instance of a computer program", as well as ways of using a computer program. The lack of effective legislative regulation of relations with the use of cloud computing in Ukraine also directly affects the growth of offenses in the field of intellectual property law.

Regarding the public sphere, the situation here is more or less defined. The Law of Ukraine "On Cloud Services" dated February 17, 2022, adopted two years ago, allows to regulate the issue of the use of cloud technologies by state authorities. In particular, it provides for the transfer of the main processes immediately to the cloud, which in the future will allow more efficient use of the state budget. That is, to reduce the burden on authorities and local self-government. Because in order to process information independently, it is necessary to periodically increase the number of computing and human resources. Among the advantages of this Law is the definition of cloud services, their list and content, subjects of terminology, legal bases and conditions of the contract for their provision. Thus, the list of cloud services includes: infrastructure as a service (IaaS); platform as a service (PaaS); software as a service (SaaS); security as a service (SECaaS). The specified requirements for providers (providers) of cloud services and the system of state regulation of this industry are described. In fact, the adoption of this Law laid the foundation for the civil law regulation of relations in the sphere of the use of cloud computing technologies in our country.

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At the same time, certain legal uncertainty still exists regarding cloud computing technologies and leads to negative consequences. Cloud technologies by their very nature do not depend on the geographical location of the provider of cloud services and information technologies. Therefore, the question remains open regarding which legislation and which countries should be applied in regulating relations regarding the provision of access to the use of cloud computing technologies (Pihurets, O., 2019), the activities of providers in this area, the storage and protection of confidential user data, the responsibilities of the parties, etc. For example, how to protect personal (confidential) data, if the user is subject to the legislation of one country, and the provider is subject to another. Usually, the legislation of the country where the data center is located is applied. However, there is an additional question regarding the use and placement of several servers in different countries. In 2009, Google received a patent for a sea-based data center located on a vessel in neutral waters (there are currently several of them). Thus, this object is generally removed from the jurisdiction of any state in the world.

An important legal problem related to such a feature of the application of cloud technologies as a matter of jurisdiction is the distribution of responsibility among a large number of subjects in conditions of uncertainty and under different jurisdictions, when it is not known who, where, for what will be responsible, and according to which legislation (Pihurets, O., 2019). Problems also arise at the stage of filing a lawsuit, it is not clear in which country and to which court a lawsuit can be filed in case of violation of rights.

It is worth noting the dubious guarantee of confidentiality and security of data processed and protected using cloud computing technologies (Pihurets, O., 2019). The user transfers control over his own data to the provider. And, accordingly, becomes dependent on the latter and may eventually lose control over such information altogether. There is a possibility that personal (confidential) data may be damaged, stolen or completely destroyed when placed and stored on the provider's servers. Especially if you consider a number of espionage scandals involving public figures and the leaking of private information or information that constitutes the commercial secret of global business corporations.

Usually, users do not have complete and reliable information about the identity of the provider and its activities, so there is a possibility that providers or their partners can use private data in their own interests without notifying the owner and his consent. Considering the fact that local (national) supervisory bodies for the protection of



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personal data actually do not have full control over the process of data processing by providers of cloud technologies on the Internet due to the uncertainty of jurisdiction. Therefore, there is a risk that during the transfer of personal (confidential) data for hosting and storage using cloud technologies, such actions may fall under jurisdictions that do not provide adequate data protection.

Given the fact that domestic legislation does not keep up with IT, the relationship between the provider of cloud technologies and their users is regulated mainly on a contractual basis. At the same time, the number of contracts aimed at the use of cloud computing technologies is growing. However, there is no unified understanding among scientists and judicial practice regarding the legal nature of contracts in the field of cloud computing. Although the legal qualification of the contract directly affects the essential terms, content, performance and termination of the contract.

Among the possible options for the qualification of contracts in this area, the following can be distinguished: a contract of employment (lease), a license contract, a contract for the provision of services, a mixed contract, an unnamed contract. Cloud computing use is usually perceived as part of the subject of the license agreement, others argue that there is an unnamed or mixed agreement (Davydova, N., 2021). As a result, legal uncertainty regarding the regulation of these relations led to the parallel existence of several types of contracts between the provider and the user. A large number of providers are foreign companies that appear on the Ukrainian market with already established approaches in the field of providing access to cloud computing, but usually such approaches are difficult to adapt to Ukrainian legislation. As a result, there are contractual structures in circulation that mediate the use of cloud computing by users, the legal nature of which requires careful legal analysis.

As a rule, a contract drawn up for such relations by foreign lawyers is taken and translated into Ukrainian. If the regulation of issues related to the general provisions of contracts are more or less similar in Ukraine and other countries, then in other areas covered by the contract (for example, regarding the responsibility of the parties, the subject of the contract, the definition of terminology), the differences can be significant. It is not only possible to use foreign experience, but also necessary. However, one cannot limit oneself to translation from one language to another. In each case, it is necessary to apply an individual approach to find the best contractual form for the participants of this relationship (Iasechko S., Zaitsev O., Kozhevnykova V., Melnyk K., Kulchii O., 2020).



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Therefore, taking into account the legal multifacetedness of the "cloud" issue, let's dwell in more detail only on some private law aspects of the functioning of "cloud" services, namely, on the debatable points of contractual relations. After all, the contract is nowadays almost the only means of regulating the relationship between the provider and the user of cloud computing (technologies) (Sobreira Filho, E. F.; Leite, F. P. A.; Martins, J. A. M., 2022). We will also note the growth in the number of contracts aimed at the use of cloud computing (technologies). Applying the customs of business turnover in this area does not save the situation and there is nowhere to go - the legislation will have to be adapted.

Based on the name of the main models of cloud computing (technologies) (SaaS), it is not difficult to guess that in the legal context it is a contract for the provision of information services (Davydova, N., 2021). Article 3 of the Law of Ukraine "On Cloud Services" clearly emphasizes the contract for the provision of services. If regarding the first two models IaaS (infrastructure as a service (Cloud Infrastructure As a Service, IAAS) and PaaS (platform as a service (Cloud Platform As a Service, PAAS), taking into account their essence and functional purpose, we can generally agree that "cloud » the provider provides its client (user) with information and technical services, then with the SaaS service (software as a service (Cloud Software As a Service, SAAS), the most widespread among consumers), not everything is so simple.

After all, on the one hand, the user consumes the cloud service resources he needs: edits documents, sends and receives correspondence, stores information, etc., and on the other hand, the consumption of such resources is the use of the functionality of the corresponding software, access to which is provided in the "cloud" (Iasechko, S., 2021). Given that software is the object of intellectual property rights, and the relationship between the right holder and the user regarding the use of a computer program is usually regulated by license agreements, in the case of SaaS it is quite justified to "fit" the license agreement to this model of relations. But such an approach is questionable for a number of reasons, primarily because a large part of the above social relations is occupied by the provision of information services to the user by the provider. Also, in the case of buying a copy of the program that is installed on the hard drive of the user's computer, it will be difficult to apply a traditional license agreement to SaaS (Davydova, N., 2021).

As a result, the legislative unsettlement of the issue and the ambiguity of the legal nature of the relationship not only led to the parallel existence of several types of contracts between providers and consumers of cloud computing (service provision



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contract, license contract, mixed contract, software supply contract, software rental contract, etc.), but and gave rise to many legal disputes and literally divided the interested legal community into several "warring" camps. So, the main arguments of the "adepts" of the contract for the provision of services in the SaaS sphere are that the user cannot own and fully use an instance of a computer program in the "cloud" (play it on his own PC, copy, distribute, etc.), and therefore about the use the object of intellectual property rights as such cannot be discussed, it is only about the use of useful properties of the program, that is, the consumption of online services (Davydova, N., 2021). Moreover, the providers of "cloud" technologies are not limited to the functionality of the software and usually provide the user with related services regarding the correction of system errors, technical support, updates, etc.

Proponents of the idea of a license agreement for cloud computing (services) (Pihurets, O., 2019) believe that since the law does not limit the ways of using objects of intellectual property rights, in the case of SaaS (cloud computing (services)) it is possible to talk about a license to the user from the right holder for partial use software, while the use of such online programs without the express permission of the right holder is prohibited and contrary to the principles of copyright. Based on the definition of a computer program in the Law of Ukraine "On Copyright and Related Rights", the purpose of using the program is to obtain a certain result (obtaining certain data or data processing, etc.), and precisely the opportunity to use the results with access to cloud computing, the primary purpose of using an application is not to control an instance of the application (Kronivets, T., Yakovenko, O., Tymoshenko, Y., Ilnytskyi, M., Iasechko, S., & Iasechko, M., 2023). Accordingly, the management of the program is its use for its main purpose, based on the technical essence of the software, and the ability to use the result of its work is an act that confirms the use. At the same time, most cloud service providers indicate that they cannot take advantage of the results of user-controlled computer programs in accordance with privacy provisions and existing measures to ensure identification and authentication (Kokhanovska, O. V., 2006).

Since Ukrainian legislation and the legislation of EU member states do not offer any separate regulation of relations regarding the use of cloud computing (services), except for the public sphere, the general norms of current legislation (i.e. the analogy of law or law) should be applied to the subjects of such relations. . Where the subjects of legal relations, taking into account the provisions of Article 2 of the Law of Ukraine "On Cloud Services" and Article 1 of the Law of Ukraine "On Copyright and Related Rights" [15], regarding the use of cloud computing (services) are: 1) cloud computing

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(services) provider - a person who, having rights to all or individual elements of information systems, provides access services to the corresponding software elements to users of cloud computing (services); 2) user of cloud computing (services) - a person who uses for processing data or data of third parties belonging to him, those elements of information systems, the right of access to which the provider of cloud computing (services) granted him; 3) right holders of the software, with the help of which access/use (provision) of cloud computing (services) takes place.

Considering the essence of cloud computing (services), there are four models of building relationships that arise when accessing or using cloud computing: 1) between the provider of cloud computing (services) and the user; 2) between the right holder of rights to intellectual property objects that are reproduced or distributed when using cloud computing (services) and the user of cloud computing (service); 3) between the right holder of rights to intellectual property objects included in the cloud infrastructure and the cloud computing (service) provider; 4) between the right holder of rights to intellectual property objects included in the cloud infrastructure and the user of cloud computing (service). But these four models of legal relations are still not properly regulated in the legislation of Ukraine.

Taking into account the above, the relations that arise when accessing or using cloud computing, in our opinion, should be regulated by a civil law contract. The variety of signed contracts (license contract, service contract, software rental contract, mixed contract, unnamed contract, etc.) shows that there is no unified understanding of the essence of cloud computing (services) and methods of their provision in law. However, in practice, it is very difficult to clearly establish which contractual form is the best for cloud computing: a license agreement or the registration of relations with different contracts at the same time in order to avoid "blurring" of the subject and hidden risks, or the registration of relations with a mixed contract for the provision of complex services and use software (Iasechko, S., 2023).

The problem of qualification of contracts with cloud computing (services) also exists in European countries. Thus, in 2016, the British Court tried to find out: the essence of the supply of the program is a good or a service. The Federal Court of Germany considers the use of software in remote mode as a rental agreement. The French court qualified the contract for the provision of software in remote mode as a contract for the provision of services (*le contrat de prestation de services*). Ukrainian courts perceive contracts in the field of cloud computing (service) type: "SaaS" as a software sales model, where the supplier develops and manages a web application, providing for a



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fee access to the web application via the Internet, while court decisions do not contain the essence of such a contract.

The use of a license agreement to regulate legal relations regarding the use of cloud computing (services) is a fairly common practice. At the same time, it is considered that the use of computer programs is possible even if the user does not have an instance of the program or when the program is temporarily played, but with access to the content (Malovic, N., 2018). For example, the USA has its own approach to the qualification of contracts for providing access to cloud computing (services). So, the use of cloud computing (services) can be qualified as a service and as a license agreement. The provider makes the decision on which model to build relations with. The choice of contractual model may also depend on the law applicable in the respective states (Landy, G. K., & Mastrobattista, A. J., 2008).

In Ukraine, the construction of relations regarding the use of cloud computing (services) based on the model of license agreements has a number of formal, legal, organizational, and financial grounds and makes it possible to reduce the risks caused by the uncertainty of private and informational legislation. In addition, Ukrainian legislation has the necessary flexibility to regulate relations in the field of cloud computing (services) according to the license agreement model. The ways of using the software, which can be provided within the limits of the license agreement (Article 441 of the Civil Code of Ukraine), are inexhaustible. Although they provide for the presence of a copy of the program, for example, a digital copy of the software stored on the user's device under a license agreement (for example, the right to distribute the software, carry out processing, adaptation). However, the Central Committee of Ukraine allows the use of new methods of use within the limits of the right to a computer program. If the parties use in the agreement on cloud computing (services) the terminology characteristic of the license agreement ("licensor", "licensee", "granting the right to use the computer program"), avoiding the terminology of other agreements ("service", "executor", "customer", "access", etc.), then the contract will look like a license. Even the user's lack of a copy of the computer program will not affect the application of the model license agreement when using cloud computing (services), because the legislation allows the use of the work (program) "in any form and in any way", including temporary reproduction (Part 2 of Article 12 of the Law of Ukraine "On Copyright and Related Rights").

The use of cloud computing (services) as a rental agreement (Kovaliv, M., Yesimov, S., Petkov, S., Koziar, R., & Tsyuh, S., 2023) can cause certain complications. Since



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in cloud computing (services) the transfer of a computer program is not carried out, but the possibility of using the program is provided for a certain time (Eberhardt, H., 2018). Although in judicial practice there was an attempt to recognize an agreement on providing access to a separate copy of a computer program via the Internet as a lease agreement (Spindler, G., 2010).

However, the lease agreement is not an acceptable form and cannot regulate the relationship regarding the provision of access to cloud computing. The subject of a lease (property lease) is an individually determined thing that retains its original appearance when used repeatedly (Article 760 of the Civil Code of Ukraine). Whereas in the case of cloud computing, there is no physical medium – the computer program or computing power is placed on the equipment (server) of the provider. The essence of using cloud computing is the ability to dynamically redistribute computing power depending on the user's requirements. Server capacity, data storage volume, specific content of the software is in a state that is dynamically modified during the term of the contract (Iasechko, S., 2023). The user does not control, during the lease term, computer programs, server capacity, the amount of data storage, and cannot change or configure the software. Obviously, in the case of cloud computing, the hardware assets (servers, equipment) are controlled by the provider. Accordingly, such an object does not have individual features that are characteristic of the object of the lease agreement and allows its return to the lessor in the condition in which it was received, taking into account normal wear and tear or in the condition specified in the contract (Article 785 of the Civil Code of Ukraine). Therefore, one of the essential features of a lease agreement is missing from the contract for providing access to cloud computing.

The legal definition of the term "cloud services" indicates the expediency of using the contract for the provision of services as a model for regulating the studied relations. And the term "services" appears in the name of cloud computing (services). If we proceed from the essence of the Internet, then regulation based on the model of a contract for the provision of cloud computing services has the right to exist. However, the Law of Ukraine "On Cloud Services" defines cloud computing technology (cloud services) as providing remote access to the cloud infrastructure through electronic communication networks at the user's request. And here the question arises, by means of which such access is provided? What exactly are the actions that indicate the provision of access to cloud computing? If it is a service (Article 10 of the Law of Ukraine "On Cloud Services"), then it must be consumed in the process of carrying out a certain action or activity (Article 901 of the Civil Code of Ukraine). Then, how to qualify



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cloud services provided with the help of cloud resources using cloud computing technology (Article 2 of the Law of Ukraine "On Cloud Services"). Where cloud resources are any technical and software tools or other components of an information (automated) system, access to which is provided by cloud computing technologies, in particular, processing time (computing power), space in data stores, computer networks, databases and computers computer programs (Article 2 of the Law of Ukraine "On Cloud Services"). How can the service be provided to the user if he has not received use or access to technical and software tools or other components of the information (automated) system. Probably not. The user must still install software or technical tools, etc. on the device to at least access cloud computing (services) and perform certain calculations or other actions related to searching, processing, storing and (or) transmitting information in the cloud.

However, we note that the provision of access to cloud computing can still be partly attributed to information services, but not because cloud computing is directly related to information technologies, but because within the framework of providing cloud computing (services) there is a collection, storage, systematization, processing, provision and distribution of a certain amount of information. Thus, when using a search engine, information is searched and systematized on request, and when using an information storage service in cloud computing, information of a certain volume is stored for a certain period of time.

Therefore, based on the analysis of previous contractual forms, it should be noted that all these forms may be applicable to cloud computing (services) to some extent. However, they do not correspond to the essence of cloud computing (service). All this indicates the need to consider the possibility of applying the model of a mixed contract to relations related to cloud computing (services), which may contain elements of a lease, a license agreement and the provision of services. The specified contract was adopted in the norms of private law of the EU and Ukraine. The legislation of EU member states has special provisions on mixed contracts, such as: mixed contract, hybrid contract (Byl, KhG; Chitty, Joseph et al., 2004), gemischter (Vertrag Markesinis, B., Unberath, H., & Johnston, A., 2006), etc. Yes, Where a contract is a mixed contract then, unless this is contrary to the nature and purpose of the contract, the rules applicable to each relevant category apply, with any appropriate adaptations, to the corresponding part of the contract and the rights and obligations (Stakhira, H.M., 2020).

In the case of a mixed contract, the principle of combining is applied. That is, separate rules applicable to contracts whose essential elements are combined are



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applied to legal relations under such a contract. But at the same time, the mixed contract must correspond to a common purpose, and also contain the subject matter and other essential conditions necessary for contracts, the elements are combined in a mixed contract (Iasechko, S., Zaitsev, O., Pokusa, F., Saienko, V., & Harashchuk, I., 2022). The construction of a mixed contract during the use of cloud computing (services) allows taking into account the main needs and capabilities of the participants of this legal relationship. When using cloud computing (services), the provider and the user are not limited by the contractual forms established by law, but at their own discretion form a contract with the necessary essential conditions. In general, there are enough reasons to qualify the agreement on providing access (use) of cloud computing (services) as a mixed agreement that contains elements of a license agreement, lease, provision of services, etc. Contracts in the field of using cloud computing (services) may have all the characteristic features of a mixed contract provided for in Part 2 of Article 628 of the Civil Code of Ukraine.

In a mixed agreement on providing access (use) of cloud computing (services), there may be such elements of the license agreement as 1) provisions on how to use the software; 2) type of license; 3) term and territory of validity of the contract; 4) remuneration for use; 6) the procedure for transferring the object; 7) the right to grant sublicenses, etc. On the other hand, a mixed contract may contain such services as consulting the service user on the effective use of cloud computing computing power, providing assistance in uploading user data to the "cloud", technical support for the operation of the software, a condition on the level and scope of service, etc. Even such a condition of services as the quality of a mixed contract can be taken into account.

The price condition in the license agreement is essential, but in a mixed agreement, the specificity of payment for the use of cloud computing according to the service model can be applied. Namely, pay only for the consumed computing power (pay as you go). Taking into account the possibility of providing computing capacities on demand (On-Demand Self-Service) in a mixed contract, it is possible to establish such an element of service - as a unilateral refusal of the contract by each of the parties (Article 907 of the Civil Code of Ukraine).

A mixed agreement on the provision of access (use) of cloud computing (services) will allow taking into account differences in national legislation in the event that the parties intend to conclude an agreement on the use of cloud computing (services), but in the legislation of one country it is defined as a named agreement, and in the legislation of another country as a mixed or sui generis treaty (special treaty). Under



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such circumstances, the parties independently determine the essential terms of the mixed contract and other provisions that they consider essential. In fact, the choice of the specified contractual form is one of the necessary decisions, which allows you to highlight a specific element of a mixed contract and determine the relevant legal norms in the legal regulation of legal relations in the field of cloud computing (services). Therefore, we believe that the most optimal contractual structure for regulating relations related to cloud computing is a mixed agreement on providing access (use, services) to cloud computing technologies, as such, which corresponds to the essence, nature of the relationship and scope of rights and obligations relationships of the provider, the user and the right holder.

4 CONCLUSIONS

The following conclusions can be drawn on the basis of the conducted research. In private law relations related to the use of cloud computing (services), the provider and the user still have to independently determine the type of contract or their combination that is better suited for regulating relations in this area. Choosing a contractual structure for contracts for providing access (use) to cloud computing (services) is not an easy task, and the use of classic contracts does not allow to effectively regulate the legal relations that arise. Most often, in Ukrainian law enforcement practice, a large number of license agreements, service agreements, and software leases are concluded.

The choice of classical contractual forms of regulation of legal relations between the provider (provider) and the user of cloud computing (services) is dictated by pragmatic considerations rather than their legal nature. Classic contractual forms may be applicable to cloud computing (services) to some extent. However, they do not correspond to the essence of cloud computing (service). As a compromise, it is worth applying the model of a mixed contract to relationships related to cloud computing (services), which may contain elements (essential terms) of lease, license agreement and provision of services, etc. The construction of a mixed contract allows taking into account the basic needs and capabilities of the participants of this legal relationship. When using cloud computing (services), the provider and the user are not limited by the contractual forms established by law, but at their own discretion form a contract with the necessary essential conditions. It is the mixed contract that corresponds to the essence of cloud computing (service), the nature of the relationship, the scope of rights



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and obligations of the provider and the user.

The use of cloud technologies has a wide range of advantages, but the process of forming a regulatory and legal platform for regulating the interaction between the provider, the user and the right holder in the private sphere is still open. Changes must be made to the Ukrainian legislation with mandatory consideration of the further development of cloud technologies. It is necessary to continue work on the creation of state standards in accordance with international requirements, regulatory documents, recommendations, regulations, etc., which will ensure the reliable and transparent use of cloud technologies in society and the protection of confidential information (especially personal data), as well as contain clear requirements for functioning state cloud systems.

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