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LEGAL STATUS, CLASSIFICATION, AND FEATURES OF ELECTRONIC CONTRACTS

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Abstract

The research is devoted to the study of the legal status and features of electronic contracts, which have become widespread due to the common usage of telecommunications means. The main purpose of the study is to classify and consider the legal characteristics of electronic transactions, as well as determine the effective scope of their application. When writing the article, the methods of collecting and studying isolated facts, generalization, scientific abstraction, cognition of laws, as well as the methods of objectivity, concreteness, pluralism were used. The study offers an original definition of electronic transaction, which should be understood as actions of participants in civil law turnover aimed at the emergence, change, and termination of civil relations, based on the exchange of electronic data and created using electronic means and analogues of a handwritten signature.

Keywords

Electronic transaction – Participants of the transaction – Rights – Obligations – Acceptance – Offer

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Introduction

The use of modern communications in commercial activities and everyday life has contributed to the formation of a fundamentally new field of legal relations, primarily related to electronic data exchange, in which various subjects of civil relations participate.

Recently, the establishment and development of legal regulation of legislation in the field of the use of data exchange using modern electronic communications have been one of the most pressing topics. In this regard, there are many problems in regulating this area of civil law relations¹.

Information is becoming the most important resource in society. Sectors of the economy that are directly related to information and telecommunications technologies are growing faster than traditional industries and are becoming more dominant.

The emergence of modern means of communication has significantly changed the forms and methods of concluding civil transactions. Speed and convenience are the key advantages of electronic document management. Efficiency plays a big role and affects the outcome of transactions in a market economy. The introduction of new information technologies in practice leads to the complication of legal support for contractual work. Transactions in electronic form have become widespread in various areas of civil turnover. First of all, this refers to sales transactions (settlement transactions, purchase of goods, works, and services, stock exchange transactions, securities purchase and sale transactions, etc.).

However, due to the lack of adaptation of the conceptual apparatus of civil law transactions using information technologies, difficulties have appeared in practice in interpreting the terms "oral" and "written" form of the transaction concerning contracts in electronic form.

The legislation of Western Europe and the USA allows for the conclusion of transactions in electronic form. The presence of counterparties is required for the transaction to be valid. The legal nature of the electronic transaction form is defined in the legal literature as a type of simple written form. However, this provision requires revision on the following grounds.

First, it can be concluded that not in all cases such a contract is made in writing of using information technologies by contracting parties when concluding contracts. The law establishes the formal features of the written form of the transaction, which must be fulfilled. This problem is related to the fact that using information technology in the process of agreeing to the terms of a futures contract, the parties do not always conclude the contract in writing (for example, via Skype, phone, fax, etc.). Second, even if the parties meet all the requirements established by law for the written form of the transaction, the properties of the electronic form of the concluded agreement may be so different from the traditional written form that there is a reasonable doubt whether the electronic form and the written form of the transaction are the same.

¹ A. Taylor, "Internet law — contract: Untangling the web — Part II", *Computer Law & Security Review*. Vol: 16 num 11 (2000): 33-36.

It should be noted that the legal definition of "electronic transaction" is missing at the level of the national law of countries around the world and the international law, even though in the EU and other countries of Europe and the world, different legal acts partially regulate the issues of electronic transactions, including such concepts as electronic trade, consumer protection in transactions at a distance, electronic signature, and service provision in electronic form of electronic cash.

Methods

In carrying out this study, general methods were used. It was concluded that the formation of the definition of "electronic transactions" is necessary using the method of generalization. The observation method allowed determining in which areas electronic transactions can be used most effectively. The dialectical method allowed presenting a classification of electronic transactions. The dialectical method of scientific research is based on the use of methods of analysis and synthesis, the transition from the abstract to the concrete and from the concrete to the abstract. It allowed drawing an important conclusion, namely, what information technologies can be used when concluding civil law transactions in electronic form.

The logical method, the use of which is based on the application of the laws of formal logic to legal phenomena, i.e. the science of correct thinking, allowed identifying ways of accepting an offer when concluding electronic transactions.

The study used a sociological method, based on which, based on specific facts, phenomena, and processes occurring in society between people and their associations as subjects of law, a conclusion was made about the main features of electronic transactions. The statistical method was used to quantify the growth of the audience of Internet users who may be potential participants in online transactions.

The formal legal (or dogmatic) method, which provides for the study of legal facts and texts, as well as their interpretation in a logical sequence using special legal terms and constructions, was used in the study. It was concluded that information in an electronic form signed with a simple electronic signature or an encrypted non-certified digital signature is recognized as an electronic document equivalent to a paper document signed with a handwritten signature.

Results

Internet technologies and Internet rights are developing rapidly. There are new services and opportunities to conclude contracts online, and the number of online purchases and financial services is growing. Today, there are 5.11 billion unique mobile users in the world, which is 2% more than in 2019². Statistics for expanding the audience of Internet users are shown in Figure 1.

² Z. Zheng; Sh. Xie; H-N. Dai; W. Chen y M. Imran, "An overview on smart contracts: Challenges, advances and platforms", *Future Generation Computer Systems*. num 105 (2020): 475-491.

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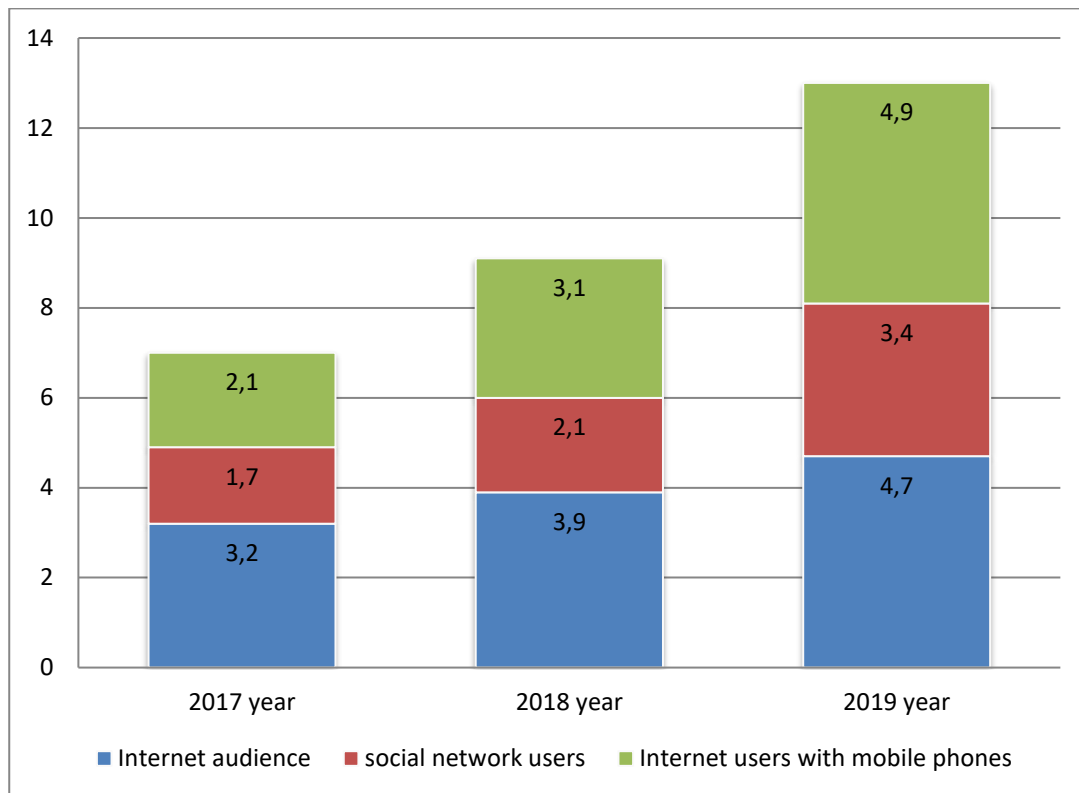


Figure 1
The growing audience of Internet users

Among the issues that require a thorough theoretical and practical analysis, an important place is occupied by the definition of the concept of electronic transactions and the classification of electronic transactions.

A civil transaction allows its participants to freely coordinate their interests and goals and determine the necessary actions to achieve them. Thus, the transaction becomes an effective way to organize the relationship of its parties, taking into account their mutual interests. This is why the legal relationship of obligations plays an almost crucial role in e-commerce. The concept of "electronic transaction" is only an indication that allows determining the method of the transaction³.

The concept of "transaction" can be used in the procedural and material senses. The first meaning refers to the performance by the counterparty of formal actions by binding agreement, legally defined and provided for directly by the transaction or custom. In a substantive legal sense, electronic means of communication refer to the concept of "making a transaction" within the framework of the problem of expression of will. Various transactions may be concluded in electronic form, an incomplete list is presented in Figure 2.

³ X. Liu; Kh. Muhammad, J.; Lloret, Yu-W. y Chen, Sh-M. Yuan, "Elastic and cost-effective data carrier architecture for smart contract in blockchain", *Future Generation Computer Systems*. num 100 (2019): 590-599.

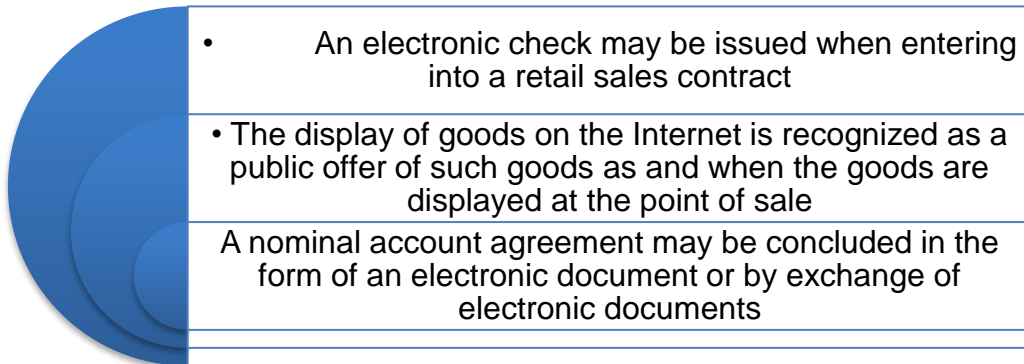


Figure 2
Types of electronic transactions

Participants in civil turnover are faced with some problems when concluding contracts in the Internet space. First, it is difficult to establish the place of conclusion of the contract. Second, there is the problem of the provability of the fact of conclusion of the contract, as well as the immutability and safety of data recorded in this contract. Third, there is the problem of establishing the fact that the document comes from the counterparty. Fourth, there is the possibility of breaking into confidential information about the terms of the contract⁴.

The information technologies that can be used in the conclusion of civil transactions in the electronic form include (Figure 3).

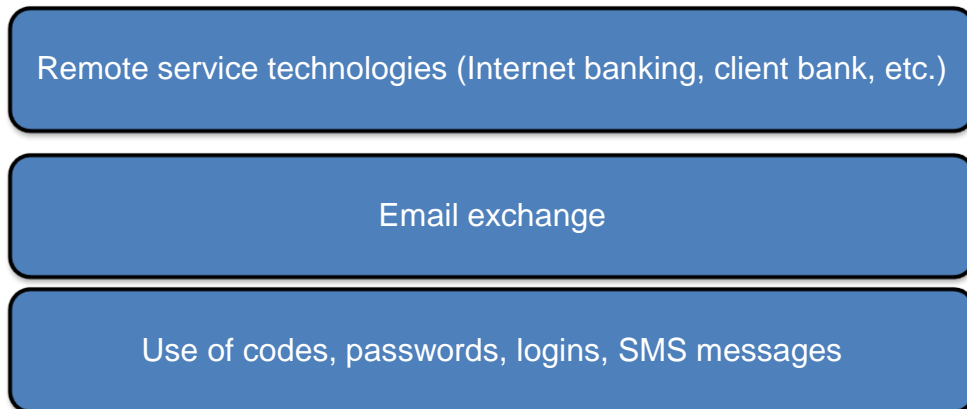


Figure 3
Information technologies for electronic transactions

Technical devices, in particular, can include a computer, a tablet for generating a facsimile signature, a fingerprint scanner for generating electronic signature keys, a smartphone, a payment terminal, etc.

To determine whether a particular transaction was concluded precisely in electronic form, it is necessary to carefully study the procedure for its completion. It all starts with an offer, which can be expressed in various ways, including by sending a commercial offer to

⁴ W.-J. van den Heuvel y H. Weigand, “Contract-driven coordination and collaboration in the Internet context”, Data & Knowledge Engineering. Vol: 51 num 1 (2004): 1-3.

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the email of a potential buyer. As for the content of the offer, it should contain all the essential conditions of the contract that is proposed to be concluded by law, as well as an unambiguous expression of the willingness of the person who sent the offer to assume obligations if this offer is accepted⁵.

In turn, the offer is considered accepted and the contract is concluded from the moment the person who sent the offer receives a response about accepting the offer.

Acceptance can be expressed in any actions that the owner of the information system has identified as confirming consent to accept the offer. There are two main conditions – the meaning of such actions should be clearly explained (for example, when one hovers the "Buy" button, a hint should pop up like "by performing this action, you agree to enter into an electronic contract on the terms specified on this web page") and they should be logically linked to the information system.

An electronic contract must contain several specific conditions due to the form of its conclusion. This is related to the prevention of fraud schemes that work according to the following scheme: a user goes to an information site to read certain information, but on the first page they see only part of the information they are interested in and the "Read more" label. When one clicks on this link, they find out that, it turns out, they ordered some product. However, the rules of the site (hidden on one of the unobvious pages) indicate that the site is not an information resource, but an online store.

Thus, this condition obliges the owners of sites used in e-commerce to explicitly and clearly state this. Also, they are required to build an intuitive scheme for purchasing a product (work, service) that would not mislead the consumer about what exactly they are doing.

Consider the issue of signature acceptance. There are three signature options:

- 1) using a simple electronic digital signature or qualified electronic digital signature;
- 2) using a one-time identifier;
- 3) using a digitized analogue of a handwritten signature.

The choice of a particular method depends on the agreement of the parties, except in situations where the law expressly provides for the use of a particular method. At the same time, for example, the use of electronic digital signature is possible only in a situation where it is used by all parties to the transaction (this is most relevant for transactions between economic entities, which, as a rule, have at least one employee with an electronic digital signature in their composition due to the obligation to submit tax reports in electronic form).

An electronic signature is recognized as "information in electronic form that is attached to other information in electronic form (signed information) or is otherwise related to such information and is used to identify the person signing the information". Information

⁵ E. A. Kirillova; A. V. Pavlyuk; T. Zulfugarzade y I. A. Mikhailova, "Bitcoin, lifecoin, namecoin: the legal nature of virtual currency", *Journal of Advanced Research in Law and Economics*. num 9 (2018) 119.

in electronic form and signed with an electronic signature is recognized as an electronic document equivalent to a paper document signed with a handwritten signature⁶.

A simple electronic signature confirms that a certain person has created a signature using codes, passwords, and other security tools. It is used for processing electronic messages sent to state authorities, local governments, or officials. An enhanced unqualified electronic signature confirms the fact that the signature was formed by a certain person and that the document remains unchanged from the moment of signing. It is allowed to be used for processing documents that do not require printing. The signature is created using cryptographic means, and it is allowed to use a certificate of an unaccredited certification authority.

It is also possible to apply other analogues of the handwritten signature of legal entities.

The second method requires, first of all, additional comments and clarifications – identifier identification, as a rule, is a certain sequence of letters and numbers, which is automatically generated by the seller's information system (the organizer of the trading platform) and is sent to the e-mail contact box or phone specified by the buyer. They must perform the same function as an electronic signature when the use of the latter is impossible or impractical. When concluding a contract in electronic form between absent parties, the party receiving the offer or acceptance must be able to reliably establish that the document comes from the party to the contract. Such a document is called authenticated. The unified acts of the International Chamber of Commerce, adopted recently, contain the rules governing the electronic form of banking transactions. For example, Art. 2 of the Unified Rules of the International Chamber of Commerce for guarantees upon request defines the document as a signed or unsigned record of information on paper or in electronic form, which can be reproduced in tangible form by the person to whom it is submitted⁷. For these rules, the document includes a claim and a justifying statement.

After identifying users in the information system, their further behavior is subject to the algorithm of the computer program. A person who acquires a digital right will receive this object automatically when certain circumstances occur. The transaction will be executed without additional orders of the parties: the digital right will be debited from the seller, and money will be written off from the buyer. Thus, the will of a person to conclude a contract includes the will to fulfill an obligation. The law and the agreement of the parties may establish additional requirements that must be met by the form of the transaction (making a certain form on a letterhead, sealing, etc.), and provide for the consequences of non-compliance with these requirements. The requirement to have a signature is considered fulfilled if any method is used to reliably identify the person who expressed the will.

An electronic contract must include not only the essential conditions established by law for the relevant type of contract but also several other conditions. The transaction will not be considered concluded without this. The mandatory details of the contract as a document include the name of the parties, the essential terms of the contract agreed by

⁶ E. A. Kirillova; A. V. Pavlyuk y A. A. Mikheyev, "Online contractual process: Status and technology", International Journal of Recent Technology and Engineering. Vol: 8 num 1 (2019): 2234-2240.

⁷ Ch. Liu; J. Cheng; Z. Li; Ch. Cheng y R. Y. Zhong, "Design of a self-adaptive gripper with rigid fingers for Industrial Internet. Robotics and Computer-Integrated Manufacturing. num 65(2020).

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them, the signatures of the parties, their addresses and payment details, and the date and place of conclusion of the contract.

Also, an important element of an electronic transaction processing is the receipt of confirmation of the transaction by the buyer. This confirmation may have both electronic and "paper" forms. It is possible to issue it either directly upon completion of the transaction or in the fulfillment of the seller's obligation to transfer the goods to the buyer⁸.

An important feature of the status of electronic transactions is the impossibility of making them in relation to certain objects.

Thus, an electronic transaction cannot be concluded in a situation where legislation requires mandatory notarization and/or state registration of a transaction. Thus, for example, most real estate transactions are withdrawn from e-commerce⁹.

There should also be restrictions on the subject composition of electronic transactions. For example, a party represented by a seller, a supplier, and so on, by default cannot be an individual who is not registered as an entrepreneur, but sells goods, provides services, and performs work. This means that transactions concluded on the Internet (including through existing trading platforms) between two individuals are not subject to the regulation of e-commerce legislation unless the parties have agreed otherwise.

It is worth noting that any electronic messages related to the conclusion of an electronic transaction, and their hard copies can be provided to the court as evidence.

Discussion

Electronic transactions are an agreement between individuals or legal entities that communicate with each other using technical means (via digital communication networks), for transactions concerning intangible goods (so-called online performance or direct electronic commerce) or the creation of electronic grounds for the provision of material goods (so-called offline performance or mediocre e-commerce)¹⁰.

Online transactions and offline transactions should be distinguished in the electronic transactions group. Online transactions are made when the parties have active access to all Internet resources. The situation with offline transactions looks different because when they are made, the parties do not have active access to all Internet resources, which means they can not react quickly enough and take part in the exchange of information. Electronic transactions can be classified into two types:

a) typical transactions related to specific online services (for example, purchase and sale of computer programs);

⁸ H. T. Karaoglu; A. Gupta; M. Yuksel; W. Liu y K. Kar, "Bailout forward contracts for edge-to-edge internet services", *Computer Communications*. num 36 (2013): 1708-1725.

⁹ A. Gupta; Sh. Kalyanaraman y L. Zhang, "Pricing of risk for loss guaranteed intra-domain internet service contracts", *Computer Networks*. Vol: 50 num 1518 (2006): 2787-2804.

¹⁰ T. J. de Graaf, "From old to new: From internet to smart contracts and from people to smart contracts", *Computer Law & Security Review*. Vol: 35 num 5 (2019).

b) atypical transactions related to standard contracts (for example, a purchase and sale agreement).

A service is considered to be performed in electronic form if it is performed by sending and receiving data at the destination using electronic means of conversion, including digital compression, as well as storing data, and the data is transmitted integrally through telecommunications networks.

If the parties use electronic means of communication to make the corresponding expression of their will, such a transaction is understood to be an electronic transaction. At the same time, the exchange of will expressed electronically does not take place online or with the simultaneous presence of the parties to the transaction who send the will through a television information network, such as the Internet, or, for example, the execution of such a transaction occurs offline, by the exchange of information media with recorded text files containing the will of the parties¹¹.

When deciding whether the transaction is electronic, the way it is completed is also of great importance. This is primarily about transactions made online (for example, the purchase and sale of computer programs, video, and audio materials). In the examples given, the transaction is made, as well as its execution, in the network¹².

Thus, it may be concluded that in this case, it refers to an electronic transaction *sensu stricto*, i.e. electronic at the time of conclusion and execution. However, it bears remembering about the cases when the transaction is made in the electronic form online or offline and execution occurs traditionally. Such a transaction will also be considered electronic. Thus, it is sufficient to have at least one criterion for an electronic transaction. The traditional materialized way of executing a transaction is not a basic evaluation criterion when deciding whether a given transaction is electronic.

A transaction is considered electronic even if the execution phase is performed traditionally, and execution is performed in an electronic (dematerialized) form. It should be noted that several electronic transactions can only be executed in electronic form (for example, access to teleinformation networks, access to databases that exist only in electronic form, etc.) and transactions that can only be performed in the traditional way (for example, the purchase and sale of computers, cars, etc.)¹³.

Given the above-mentioned statements, it can be concluded that it is appropriate to use the concept of "electronic transaction" because the concept of "transaction made in electronic form" excludes transactions from the scope of analysis that is made traditionally and execution – in electronic form.

¹¹ P. Bagheri y K. H. Hassan, "Access to information and rights of withdrawal in Internet contracts in Iran: The legal challenges", *Computer Law & Security Review*. Vol: 31 num 1 (2015): 90-98.

¹² Thomas J. Goldsby y James A. Eckert; "Electronic transportation marketplaces: a transaction cost perspective", *Industrial Marketing Management*. Vol: 32 num 3 (2003): 187-198.

¹³ Christopher J. Westland, "Transaction risk in electronic commerce", *Decision Support Systems*. Vol: 33 num 1 (2002): 87-103.

Conclusion

An electronic transaction is an action of participants in civil legal turnover aimed at the emergence, change, and termination of civil legal relations based on the exchange of electronic data and created using electronic means, using analogues of a handwritten signature. It is considered complied with if the transaction is completed using electronic or other technical means. In this case, an electronic transaction must be recognized as legal, provided that it is possible to reproduce the contents of the transaction in an unchanged form on a tangible medium (for example, print on paper) and reliably identify the counterparties.

The classification of electronic transactions into typical transactions related to specific online services and atypical transactions related to standard contracts is presented.

An electronic transaction should be equated with transactions concluded in writing, which will differ only in the way it is concluded. The main advantages of an electronic transaction over a traditional one are the efficiency of the information provided, reducing the risk of forgery of an electronic document, and increasing the degree of confidentiality of the conclusion of an electronic transaction.

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