

# Concept of Smart Contract within the Framework of Implementing the Principles of the Civil Law

**Aleksei A. VOLOS**

Ph.D. in Law, Associate Professor, Department of Civil Law, Saratov State Law Academy, Russia

E-mail: [vaalawyer@gmail.com](mailto:vaalawyer@gmail.com)

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## Abstract

The study aims at identifying the civil law nature of relations associated with smart contracts within the framework of implementing the principles of the civil law and establishing the possibility to apply the principles of civil law to the relations under consideration. There is used a combination of various methods during the research. In particular, these methods include general scientific methods (analysis, synthesis, generalization, modeling) and special legal ones (analysis of legal literature, formal legal and comparative legal analysis). As the main result of the study, it was noted that the smart contract is legally indifferent, being only a software, a special code. At the same time, the actual relations of the parties, which are set in the process of using a smart contract, can be qualified in different ways: as a special form of contract, a way to fulfill the obligation, civil law contract that has specific features, non-defined way to ensure the fulfillment of an obligation. In conclusion, the author points out that smart contract can save human and financial resources and can provide some independence. The fact of being legally bound this way causes a problem of ensuring effective protection to the entities. The protection of the parties to a smart contract should be carried out according to the basis of the civil law, which are becoming more important due to smart contracts.

**Keywords:** smart contract, blockchain, principles of the civil law, weaker party, freedom of contract.

**JEL classification:** K15, K24, K12.

## Introduction

Smart contracts, being a new phenomenon both in the technological and in the legal sense, have appeared due to the need for fulfilling precise goals. Smart contracts can improve the implementation of the four main objectives of a civil contract, namely, observability, verifiability, confidentiality, and applicability. Originally, a smart contract implies a significant reduction in the number of costs and errors associated with the human factor. Another purpose is decreasing the role of intermediaries (that is, in terms of civil law, representatives, trustees, guarantors and other persons representing the interests of clients) who participate in performing and securing the obligations.

With smart contracts getting more complex, their properties, which also predetermine the value of smart contracts, have been more clearly defined. Firstly, it is autonomy, which implies that, after deployment, it is impossible to change or prevent the execution of a smart contract, except through the procedures previously included in its code. Secondly, it is profitability, the ability to influence the financial component, which means that a smart contract helps to manage funds, receive payments and generate a payment in a crypto asset. Thirdly, it is traceability, which ensures a transaction recorded in the blockchain to track every execution. Besides, each interaction with a smart contract has an individual address identification. Finally, it is a determinacy, which secures the function of the program according to the procedures described in the code even in case of software error.

However, the construction of the legal regulation concept of smart contracts is impossible without a deep and comprehensive study on the contemporary importance of smart contracts. The law (in this case, the legal regulation of relations regarding smart contracts) should create a mechanism that would allow its application (a legal mechanism that would allow more complete fulfilment of all the tasks that smart contract has).

## **Main Part**

In its most general terms, a smart contract can be defined as a programmed contract, whose terms are imbedded in the program code and which is automatically executed through a blockchain. In a smart contract based on the blockchain technology, the terms and conditions are formulated in a programming language followed by the transfer of that to the blockchain. Such a contract is executed automatically without the participation of the Contractor (a seller, an external collaborator, a work contractor) with the observance of the predefined conditions. The program of such a contract should be protected from unauthorized changes in its internal logic so that the contracting party could not intentionally impede the execution of a smart contract or illegally change its content. A smart contract is a contract protected by a code that fulfills the obligations that the parties agreed to assume. It is autonomous, self-sufficient and acts exclusively according to the rules established by the contract. There is also a broad definition of a smart contract that considers it an agreement of the parties whose execution is automated.

In Russian scientific and academic literature, a smart contract is often referred to as a "smart agreement" or "smart contract". Such designations appeared due to a simple borrowing of the English term "smart contract". It is indicative that even in English literature, it is often said that a "smart contract" is "neither smart nor a contract".

A "smart contract" and "smart agreement" do not seem to be correct names for the phenomenon in question. Firstly, there are many options for translating the word "smart" from English. Most likely, the translation "multifunctional, automatic" agreement is lexically correct. Secondly, a simple borrowing of "smart agreement" does not reflect all the technical and legal features of a smart contract. In connection with the foregoing, we consider it inappropriate trying to translate the term "smart contract". Considering the purpose of the study, this research uses this term.

Saveliev defined smart contract as "an agreement existing in the form of program code implemented on the Blockchain platform, which ensures the autonomy and self-fulfillment of the terms and conditions of such an agreement upon the occurrence of circumstances predetermined

therein". A positive aspect of the proposed definition is the establishment of some distinctive features of a smart contract allowing to distinguish it from other contractual designs: the existence of a contract in the form of program code, especially the conclusion and execution of such a contract. This raises the question of whether it is necessary to limit the existence of smart contract only to the Blockchain platform. In particular, if "smart contracts" are created based on a more advanced system than Blockchain in the future (this cannot be ignored due to the incredibly fast technological progress), such an agreement is likely to still be considered as a smart contract.

Based on the most general definitions of smart contract, it can be concluded that *smart contract is not an independent kind of contract*. A sales contract, a lease, or other contractual structures can appear to be a smart contract. *A smart contract is a special form of a contract (an electronic form based on a special program code) and determines the specifics of the procedure and methods for concluding a contract, exercising rights and fulfilling obligations of the parties, and terminating contractual relations*. Thus, a smart contract is not any new legal construction that would contradict all existing principles of contract law and the law on individual contracts.

The smart contract itself is legally indifferent, being only a computer program, a special code. At the same time, the actual relations of the parties, which are set in the process of using a smart contract, can be qualified in different ways. Based on the study of possible emerging relationships among subjects, it can be preliminary concluded that theoretical and practical views allow various approaches to understanding the essence of smart contract:

- an automatic machine ensuring the fulfillment of the terms and conditions of the concluded contract;
- a software;
- a special form of a contract;
- a way to fulfill the obligation;
- a civil law contract that has specific features;
- a non-defined method to secure the fulfillment of the obligation.

The most comprehensive approach, which includes all the features of a smart contract, seems to be the approach that sees a smart contract, while not being an independent or distinct kind of contract, predefines the civil law legal contractual relation that has some specific features. At the same time, on a case-by-case basis, the smart contract may also act as the other above-mentioned categories. Thus, smart contract considers a software for storing integers "SimpleStorage", which, however, does not generate contractual obligations.

As Savelyev notes, the computer is "indifferent" to the fundamental legal principles of law, such as legality, justice, protection of the weaker party. Instead, certainty and effectiveness become the basic principles for the formation of terms and conditions of a contract. Moreover, the fact that a computer is "indifferent" to the principles of the law does not mean that the law enforcement officer will adhere to the same opinion. Otherwise, it would cause a violation of the formal rules of the Article 1 of the Civil Code of the Russian Federation. Despite the complexity of the judicial defense of the parties to a smart contract, courts must respond to gross violations by the parties when it is concluded and executed, regardless of the correctness or incorrectness of the technical programs.

In this context, it seems relevant to cite the idea expressed by one of the US courts back in 1972 but still being applied nowadays to resolve issues regarding smart contracts, "a computer only works in accordance with the information and directions provided by programmers. *If the computer does not think like a human, it is a human's fault*". Thus, a smart contract cannot and should not cancel the operation of the principles of the civil law, including the reasonableness and fairness of participants in civil circulation. Let us consider more specifically how the principles of the civil law are applied to regulate relations associated with smart contracts.

Traditionally, the principles of the civil law include provisions established by Article 1 of the Civil Code of the Russian Federation, as well as some other fundamental principles (inadmissibility of abuse of the law, protection of the weaker party of the civil law relations). In connection with the identified signs of smart contracts, it is relevant to define the features of the implementation of the following principles of civil law, namely, freedom of contract, ensuring the restoration of violated rights, their judicial protection, fairness, protection of the weaker party.

Freedom of contract is a classic principle that the contract law of most modern states is based on. No one will ever deny the postulate that the subjects of freedom in deciding whether to create a contract relationship. They are also free even when deciding whether to agree to conclude a smart contract. Nevertheless, some elements of the principle of freedom of contract require reconsideration. Thus, freedom of contract implies that the parties choose a counterparty. Under the condition of anonymity that a smart contract provide, the counterparty may remain unknown. Another problem is exercising the right of the parties to change the terms and conditions of the contract by a new agreement on their own. Regarding this issue, the scientific literature have risen the following question: what to do if the parties want to change the agreement in case of a cyber-attack or data corruption, or any other force majeure that have taken place, while a smart contract does not allow any change in the terms and conditions even by mutual agreement. Its execution occurs automatically, it is impossible to terminate it.

There is a point of view that the contract acts as a means of legitimizing ways to protect the civil rights. By agreeing, the parties may establish a non-defined method for protecting subjective law. At the same time, the smart contract itself involves the automatic fulfillment of the stipulated conditions using a computer program. That is the parties initially introduced the possibility of additional protection of freedom of the contract by creating a written agreement. In accordance with the principle of freedom of contract, it is permissible.

One should note that there is an approach that does not relate the relations under a smart contract to the contract law. Therefore, the principle of freedom of contract cannot be applied to them. In particular, relationships associated with smart contracts are often studied as non-contractual social exchanges. The proposed approach cannot be regarded as a correct one, since the use of smart contract technology always requires the consent of the subject, regardless of the stage of the relationship it is expressed at. Thus, the rejection of the principle of freedom of contract is not possible.

In most countries, the general rule of the civil law is the postulate that while establishing, exercising and protecting the civil rights and while performing the civil obligations, the participants in the civil relations must act in good faith. In a smart contract, the exercise of rights

and the fulfillment of obligations take place with the participation of computer programs that cannot act in good or bad faith. In this regard, the validity of the principle of good faith is narrowed down in smart contracts to those stages of the legal relationship, which implies direct participation of subjects (creating a software program, completing it with the data, the moment of concluding the contract, the exercising of the right to protection by the subjects).

The principle of good faith is closely related to another principle, which implies a subject having less opportunities than a counterparty should be granted a special legal regime, including additional rights guaranteed. Savelyev views "smart contracts" as not adapted to protect the weaker party. Although the author further claims that smart contract may allow to create new methods for protecting the rights of the weaker party, for example, the consumer. That is, smart contract does not fully use the known mechanisms for protecting the weaker party but, at the same time, it can introduce the latest mechanism for protecting the rights and interests of the weaker party.

A computer program that ensures the execution of a smart contract is able to check the quality, quantity, purpose of goods, thereby creating additional electronic mechanisms for protecting the interests of the weaker party. In any case, consumer protection laws should be applied to smart contracts. Thus, there is a little doubt that courts will apply the consumer protection laws only because the consumer has concluded a "smart" contract.

However, in practice, some problems will arise in protecting consumers' rights, for example, in terms of establishing the proper fulfillment of the obligation to inform the consumer. Foreign authors have already wondered how to verify that the consumer was informed about the price and terms of use of the product, which is automatically provided by a smart contract. In such a situation, business and law enforcement practice should develop common uniform rules for ensuring that the information has been communicated to the consumer appropriately.

Blockchain technology and smart contracts can lead to an improvement in the economic and legal status of the consumer. It can be well exemplified by an insurance contract concluded using blockchain technology. The service will automatically enforce such an agreement as soon as the necessary condition occurs. In particular, the payment of insurance compensation in the event of a storm or other natural disaster will be made automatically upon the event. The consumer will be protected from any possible rejection to pay that the insurance company may claim.

One of the traditional principles of the civil law of many states is the principle of ensuring the restoration of violated rights and their judicial protection. The indicated principle of the civil law acts as a guarantor of subjective rights, implies a requirement for the complete restoration of the entrenchment on a right. Participants in the civil relations can use any forms and methods prescribed by law to protect their rights.

A clear exaggeration is the opinion expressed by the Italian researcher that the main advantage of smart contracts is almost complete elimination of the risk of default on contracts. It is certain that the risks will remain, though the risks associated with improper performance of the obligation directly by the debtor will significantly decrease. However, one cannot exclude technical risks, for example, a computer error. It is rather revealing that the researchers of continental Europe indicate common exaggeration of the economic expectations from smart contracts.

One Swiss researcher indicated that the use of computer transaction and, in particular, smart contract technology does not prevent future contractual disputes. At the same time, smart contracts are not a negative phenomenon, they will only be one of several available forms for concluding and executing agreements of the parties. They will supplement existing contract law rather than replace it.

The scientific literature rightly drew attention to the fact that many methods of protection cannot be used in case the rights of the parties to a smart contract are violated, for example, the coercion to fulfill an obligation in kind is impossible. At the same time, it is still possible to compensate the losses upon the execution of the contract. Foreign literature emphasizes that when working with smart contracts, it is complicated to apply the enforcement to claim transactions invalid.

It should be agreed that "if the economic goal the person set when joining a smart contract was not achieved, for example, due to the intentional actions of the counterparty, such a person has the right to protect civil rights." Indeed, the process of using a smart contract should not prevent a person who is unsatisfied with the results of its execution from applying to court. However, the chances of success will be reduced if the fact of concluding the smart contract with no violations of the law is proved.

It is also possible that the smart contract was not executed for some technical reason. In this case, it may be subject to enforcement. For example, one U.S. legal act (Arizona Revised Statutes) has a provision that one cannot void the contract or neglect compulsory enforcement only because it is a smart contract (§ 44-7061). In Russia, such a conclusion can be rationalized based on the principle of ensuring the restoration of violated rights and their judicial protection.

Thus, this principle guarantees the protection of the rights of the parties to the smart contract, including in court, by any means prescribed by law, with the exception of those that contradict the essence of the relationship of the parties to the smart contract.

## **Conclusion**

The proposed conclusions should be taken into account during the formation of the mechanism of legal regulation of relations associated with smart contracts. Further, there are recommendations to the legislator and the law enforcement officer.

1. Given that smart contract does not create fundamentally new functions of the contract law, as it only improves the mechanism for implementing existing ones, in order to regulate the relations of the parties, the principles of the civil law and those of the contract law should be applied insofar as they do not contradict the nature of the regulated relations.

2. A complete freedom from any "intermediaries" in concluding, executing, terminating the contract relationship is not possible, but due to the specifics of the relationship under consideration, it is necessary to establish a special legal status for some subjects, in particular, programmers who develop a smart contract program and, therefore, can influence determination of the terms and conditions of the contract.

3. The protection of the parties to the smart contract is possible in court but it involves the use of specific methods of protection. Most often, it is a compensation that will be a way of protection.

4. The smart contract itself, being only a computer program, a special code, is legally indifferent. At the same time, the actual relations of the parties created by the smart contract can be qualified in different ways, namely, as a special form of contract, a way to fulfill the obligation, a civil contract that has specific features, a non-defined way to ensure the fulfillment of obligations.

A brief analysis of some principles of the civil law and their actions regarding the relations between the parties to a smart contract shows that a smart contract is not going to make an end of the classical contract law. Smart contract is a special form of contract, as well as a set of specific procedures and methods for concluding a contract, exercising rights and fulfilling obligations of the parties, and terminating the contract relations. The principles of the civil law remain a relevant and necessary tool to use in legislative and law enforcement while solving the legal problems of smart contracts. At the same time, being affected by smart contracts, the principles of the civil law are gaining new meanings.

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