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Legal Nature of Smart Contracts

Abstract: Lately, more and more attention has been paid to the phenomenon of smart-contracts (SC) in legal research. The SCs have already found their application in many aspects of society life and are particularly common in the regulation of legal relations in the area of automated financial services, which may include lending, mortgages, insurance, etc., as well as in public services, including various types of voting, elections, document management, supply and storage. The practical dissemination of SCs is carried out without a conceptual approach in the legal regulation of this object, but also without a unified terminology. The science begins developing approaches to study of the legal nature of SCs and offers options for their legal regulation have been proposed, each of those, of course, has its benefits and disadvantages, which is explained by the multifaceted nature of this phenomenon. First of all, it means a qualitatively new level of functioning of a smart-contract where the technical component overlays on traditional types of legal relations. Both authors of the article used scientific methods such as analysis, synthesis, comparison, induction and deduction. Special attention is paid to different options for understanding the legal nature of smart contracts, proposed by European and domestic scientists.
Keywords: smart contracts, law, blockchain, contract law.

Introduction

There is no uniform approach to understanding both the nature of SCs themselves and their legal regulation in global practice. For example, French legal regulation framework does not define the concept of a smart contract, but this does not exclude using SCs for the purposes of transactions entering into and fulfilment.

Definition of Smart Contract

There is no unified approach among French lawyers to the smart-contract comprehension, but the French legal doctrine analysis suggests two main approaches. It is

believed that a smart-contract enables drafting a contract directly in the blockchain software with no contracts in the "physical world". [Giusti].

Advocates of the other approach argue that the smart-contract is not a contract, a an agreement. In their view, a smart-contract is a software purpose of that is to automatically formalize, perform and terminate a contract. [Guerlin 2017, p. 512].

As M. Mekki [2018, p. 410] highlights, a SC is not an agreement/contract but a software product that automatize certain circumstances on the basis of the algorithm "if…then". A smart-contract "overlaps" a traditional contract ensuring its entering into, execution, and termination, i.e. it provides stewardship for the contract entered into in the real world. Thus, the "software-based" approach to SCs prevails over real civil contracts in French legal philosophy.

Regulations of smart contracts in various countries

The United States' experience in regulating the SC relationship is particularly interesting. The areas of SC application in the USA are the sale of digital assets; the issuance of digital bond papers; the continuous supply chain of raw materials up to distribution; the document and business accounting system for government, real estate (land) registration; identity and security management in personal data management). Since there is no federal contract law in the USA, as well as a federal act establishing general provisions for blockchain and smart contract regulation, blockchain related issues are defined at the level of the state legislation [Khadeeva 2019, pp. 182–186].

Some US states have opted for recognizing a smart-contract as an ordinary contract. For example, the Blockchain Technology Act (Illinois) defines a smart-contract as a contract recorded as an electronic document that can be verified using blockchain. Commentators on this definition note that, in this interpretation, a SC is a traditional contract recorded and enforced through a blockchain[1] [Herian 2018, p. 16].

Other States refuse to recognize smart-contracts as contracts, defining them as ordinary software programs. For example, Louisiana Code of Statutes chapter 26, section 44–7061, section 5 defines a smart-contract as an occasion-driven software program that operates based on a distributed, decentralized, shared and reproducible registry and allows assets to be stored and transacted through an appropriate registry.

1 Contrast traditional definitions with one found in a new blockchain Act presently working its way through the Illinois General Assembly, in which a smart contract is defined as, 'a contract stored as an electronic record which is verified by the use of a blockchain'45, a definition which at first blush suggests that a smart contract is nothing more or less than a traditional contract written to and executed on a blockchain. In other words, the blockchain transforms or translates the traditional into the smart through a process of hybridity.

A similar position is expressed in the Italian legislation, a leader in digital legal regulation. According to the Italian Chamber of Deputies adopted the Distributed Registry Law on 07.02.2019, transactions performed by means of distributed ledger technology (DLT) become legally valid at the moment of registration and without subsequent notarization. F. Sarzana, blockchain expert at the recently established working group of Italian Ministry of Economic Development believes that Italy is trying to legalize transactions using distributed registry technology to exclude intermediaries or centralized certification institutions. Thus, it defines distributed registry technologies as technologies and information protocols that use divided, distributed, reproducible and simultaneously accessible registries, decentralized and encrypted, which allow to register, certify, update and store data, whether encrypted or not, and which cannot be changed or tampered with [Yurasov 2017].

Considering the CIS legislation, the definition of a smart-contract contained in para. 9 in Annex 1 to Decree of the Republic of Belarus No. 8 dated December 21, 2017 "On Digital Economy Development" is of interest. According to this legal regulation, a smart-contract is understood to be a software code designed to function in a transaction block register (blockchain) or other distributed information system for the purpose of automated fulfilment and/or performance of transactions or other legally significant actions. The digital assets related legislation of other CIS countries contains no definition for a smart contract.

Researches that suggest that a smart-contract can constitute a full-fledged civil law contract, as well as a mode of contract formation and contract performance could be interesting, too.

German jurisprudence believes that the programming code is the language of the contract terms entered into by the parties. In such a case, the will of the parties is expressed in another language. Since the German Civil Code guarantees the freedom to choose the language in which the terms of the contract will be expressed, this way of contracting is legitimate. In litigation it is necessary to mobilize an expert to review of the case. The German researchers were supported by French authors. The smart-contract is a legal transaction translated into an informational language [Godefroy 2018, pp. 713–792].

Models of Smart Contracts' Integration

There is a mindset that a SC can be integrated into a transaction in one of the following ways:

1) entirely in a programming language – the contract is written entirely in software code, without a copy in natural language (this method is least suitable for complete transactions, because they will always contain conditions for

which automation is not required – choice of dispute venue, assurances of circumstances, etc.);

2) duplication – the contract is written in software code and has a copy in natural language;
3) mixed model – the contract is written in natural language, with part of its provisions written in software code. The most logical model today is the mixed model, where a part of the contract is written in natural language and the other part is in the form of a smart contract. For example, in the algorithm, the parties fix the procedure for determining the price and the triggers that release the payment. The rest of the provisions (including dispute resolution procedure, assurances about circumstances, description of goods or actions in case of force majeure, etc.) are written in natural language in the contract [Vashkevich 2018, p. 89].

A.I. Savelyev sees the smart-contract as a contract that exists in the form of software code. It should be implemented on a blockchain platform, should provide autonomy and self-execution of the contract terms upon the occurrence of predetermined in it circumstances [Savelyev 2016, pp. 32–60]. Similar position belongs to A. A. Volos who defines a SC as a special form of a contract, as well as a set of special procedures and ways of contract entering, rights enjoyment and parties' obligations fulfilment, termination of contractual relations [Volos 2018, pp. 5–7].

A series of studies refer to the smart-contract as evidence of a contract and a technical procedure for its performance. In the latter case, it would be the automatic performance of the contract or some of its provisions [Zolynski 2017, p. 3].

The Italian Law on Urgent Provisions Concerning the Support and Facilitation of Business and Public Administration, provides that the storage of electronic documents using distributed ledger technologies become legally effective from the moment of the electronic timestamp, as provided by Article 41 of EU Regulation No. 910/2014 on Electronic Identification and Trust Services for Electronic Transactions in the Internal Market and can therefore be used as evidence in court [Krysenkova].

The use of a smart-contract ensures that the parties' obligations are automatically enforced exactly in line with their original intentions and allows the same automatic mode to respond effectively to breaches of contract by the parties. Rather than simply relying on the honesty of our counterparties, technological systems are now being implemented with features that will provide the necessary guarantees if even the parties of smart contracts behave dishonestly [Mogaillard 2018, p. 10].

However, the smart-contract cannot completely eliminate disputes. It is well noted that the application of the principles of contract law, including dispute resolution, does not disappear with the emergence of SCs. But even in such a situation, the work of the court or arbitrator is greatly facilitated because all transactions are confirmed by the system. The parties do not need to submit additional evidence – judges

or arbitrators can directly access smart-contract performance records and immediately understand both the chronology of events and at what stage, by whom and what breach happened. In addition, even in such situations, a multi-stage system of contract enforcement can be envisaged. For example, the contract can be made conditional upon the discovery of, for example, faulty goods and the entry of documentary evidence of this in the smart contract system, the corresponding amount of money in the seller's bank account will be blocked. The next step is to specify an automatic algorithm for resolving disagreements using a system of intelligent hints. By building several stages of contract enforcement, the interests of the parties of the contract can be protected, which, although will not eliminate, but significantly reduce the number of disputes and appeals to court or arbitration. If disputes do arise, a smart-contract can resolve them quickly and easily.

In addition to newly developing legal framework in some countries of the world, such as the USA, court practice is also beginning to develop in relation to SCs and self-protection legal relations, which some researchers recognize as a legal precursor of smart contracts [Savelyev 2017, pp. 94–117].

According to some authors, a smart-contract should be considered a twofold phenomenon with both technical and legal components. They are never merged into a single entity. For example, according to one French researcher, a distinction should be made between an algorithmic program (smart-contract) that operates on a blockchain platform and a traditional contract. The purpose of the software is to enable the entering into, performance and automatic termination of a traditional contract on such a platform. In its turn, the contract can be anything: an insurance contract, a property lease, etc. Thus, a smart-contract layers on a traditional civil contract [Guerlin 2017, p. 512].

The argument seems reasonable, as neither legal nor technical aspects of the smart-contract can be ignored. We believe that we should distinguish between the SC as a computer code and the smart contract as a civil law contract (legal relationship). The place of the smart-contract shall be among special non-autonomous contractual constructions reflecting particularities of contract entering into or special legal consequences of any civil-law contract, provided that they meet the characteristics indicated by the law. Such contractual constructions include, for example, a contract of adhesion, a public contract, an option contract, a contract in favour of a third party, etc., which cannot be concluded separately from the relevant contract type. Consequently, it is not possible to conclude a SC as such, but it is possible to conclude a supply contract in the form of a SC.

A smart-contract is a contract that must be recognized as such by the legal system of a particular state. Therefore, the independence of smart contracts from a state's legal and judicial system mentioned in the literature is seen as a consequence of a shallow understanding of the legal nature of contracts and an over-idealization of technology. There cannot be a contract outside the law because legal enforcement of a

contract, and especially its enforcement, depends on legal mechanisms, including enforcement. The desire to automate contract enforcement should not be confused with the desire to cut the link between the contract and the legal system of the state. While the first is possible and desirable, the second is a consequence of a misunderstanding of capacities and role of the state in influencing the emergence and development of property relations. [Kaldybaev].

Advantages of Smart Contracts

Globally, smart contracts are about reducing the transaction costs associated with servicing any calculation. An example would be the calculation of a lease. A lease is a continuing legal relationship that often involves the same transaction at a certain period of time: the transfer of rental payments. Such monthly payment can be automatized – a SC will initiate the payment at a fixed time throughout the duration of the lease, if no claims are made by the parties. In the future, a smart rental contract could also interact with the Internet of Things (e.g., automatically grant or deny access to the leased space depending on meeting the payment conditions). A SC could be used in supply where the smart-contract software mentions that the money for the goods is automatically debited from the buyer's account after the algorithm receives data that the goods are in stock and have passed the initial inspection (acceptance). A smart-contract can debit the required amount in the agenting and franchising process within a specified period of time before the contract expires. In the future, when using a decentralized file storage, the parties can lay down in the software algorithm certain conditions to access various business-related documents that are provided along with the franchise. With the help of SCs the process related to security mechanisms in biddings can be automated. The algorithm will be able to return the security provided by a bidder if he/she failed the tender, or debit a security provided by a successful bidder who won the tender but avoids the contract signing. Looking ahead, a smart-contract could cover the entire bidder selection process and make the procedure faster and more transparent. It is potentially possible to use the SC to block rogue suppliers and monitor the cost effective use of funds.

Conclusion

Hence, having analyzed different approaches to understanding the legal nature of smart contracts, we conclude that smart-contracts cannot be considered only from the perspective of civil law regulation without taking into account the technical features of the object reviewed.

Bibliography

Godefroy L. (2018), *Le code algorihmique au service du droit*, Dalloz, Paris.

Giusti J., *Les "smart contracts" sont-ils des contrats?* www.jeromegiustiblog.wordpress.com, access as of 28 October 2021.

Guerlin G. (2017), *Consideration sur les smart contracts*, Dalloz, Paris.

Herian R. (2018), *Legal recognition of blockchain registries and smart contracts*, OECD, Paris.

Kaldybaev A., Temirov Ch. (2019), Smart-kontrakty i ikh rol' v predotvrashchenii dogovornykh sporov [in] A. Didenko, S. Moroz (eds.), Grazhdanskoye Zakonodatel'stvo Stat'i Kommentarii Praktika, Caspian University, Almaty.

Khadeeva M. (2019), *The Smart Contracts in the USA and Russia: Entering Into, Performance, and Development Prospects, Problems of Economics and Legal Practice*, Moscow.

Krysenkova N.B., *Smart Contracts In Foreign Legal Space*, www.urfac.ru, access as of 23 September 2021.

Mekki M. (2018) *Le contrat, objet des smart contracts (partie 1)*, Dalloz,Paris.

Montgaillard W. (2018), *Blockchain* for business, "Advances in Economics, Business andManagement Research" No. 131.

Savelyev A. (2016). *Contract Law v.2.0: 'smart' contracts as the beginning of the classical contract law down*, "Bulletin of Civil Law" No. 3.

Savelyev A. (2017*), Some Legal Aspects of Use of Smart Contracts And Blockchain Technologies in Russian Law*, "Legal", Moscow.

Vashkevich A. (2018), *Smart contracts: What, Why and How*, "Simpler", Moscow.

Volos A. (2018), *Smart contracts and principles of civil law*, "Russian Justice", Moscow.

Yurasov. Y., *Smart-contract and prospects of its legal regulation in the age of blockchain technology*, www.zakon.ru, access as of 9 October 2021.

Zolynski C. (2017), *Blockchain et smart contracts: premiers regards sur une technoligie disruptive,* "Revue de droit bancaire et financier" No. 1.