

ПОЧАТОК НАУКОВОГО ШЛЯХУ

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THE LEGAL NATURE OF «SMART CONTRACTS»

Formulation of the problem. «Smart contracts» represent a new stage in the development of automation contractual relations: they can not only be concluded without human intervention, but also can be performed without human intervention. It should be noted that the concept of «smart contract» appeared in the technological field, without consideration of the legal aspects, the principle underlying the «smart contracts» are different from the law: computer program indifferent category of law, good and justice. Therefore, one of the main problems of using «smart contracts» in practice is that they are not designed to protect the weaker party. Also, «smart contracts» can be used to achieve illegal goals, violating public order, and many other problems of using smart contracts at practice.

Analysis of recent research and publications. This topic is controversial, and hasn't been developed neither in the domestic nor in the foreign legal science. However, problems of using «smart contracts» are reflected in the research and publications of such authors as Nick Szabo, Josh Stark, A. Savelyev, developers site like Blockchain technologies, eBay, Ethereum.

The purpose of the article. In many cases, problems applying «smart contracts» and putting them in a legal framework relies on technical means, but there are many unresolved problems which essentially can't solve by technical means, so the lawyers need to find a legal means of protecting the rights and interests of the parties of «smart contracts».

The main material research. There can be no debate that technological development has never been as fast, as complex or as creative as it is today. The only problem is, as with all revolutions, when

things are moving this fast one has to be very careful when it comes to separating innovation from irritation, as more new tech is made available we have to develop that sixth sense that will allow us to separate what will actually help us from what definitely won't.

Given that we are currently in the midst of a digital revolution, the scale of which we have never seen before and will probably never see again, I think we all agree with digital currency and digital transactions aren't only progress but an inevitability.

By this time, typical contracts were provided by the trust and the law, however, if the provisions of the act have been interpreted by the parties or one of the parties deliberately went to the violation of the terms of the contract by abusing their rights, the system will crash and you have to use cumbersome, time-consuming, costly different kinds of judicial procedures to recover the previous position or to prevent the deterioration of the existing one. Therefore, with the development of progressive new technologies there are contracts of the future – «smart contracts» (smart contracts), as computer programs based on mathematical algorithms, where the latter determine whether the terms of the contract are fulfilled or not.

Less input from the contracting parties means that «smart contracts» will come into being quicker and, therefore, allow for transactions to be raised and completed more quickly. Also, the fact that «smart contracts» require less input from both the parties involved and their lawyers, will make commerce more fluid and more cost-effective both in terms of time and legal fees [2].

In 1994 the American programmer Nick Szabo developed the idea of «smart contracts» which are self-automated computer programs that can perform

the terms of any contract. The first «smart contracts» of this type appeared only in 2013[5].

The core value of «smart contract» is an absolute cost reduction in the process of laying, the inability of intervention of third parties and the absence of risks of failure to comply, ambiguous interpretations and unfair decisions in the courts.

«Smart contracts» are entirely digital and are written using programming languages of code, such as C, Go, Python, Java. This code defines the terms of the contracts, the rights and obligations of the parties in the same way that the traditional legal contract, specifying the obligations, incentives and penalties that may be due to non-performance or improper performance of the contract. All the «smart contracts» are based on the blockchain, which is a computer system, digital account book, which stores information about all transacts by all users.

In order to understand how smart contracts work, it is important to first make the distinction between the smart contract code and how/what that code is being applied to. As explained in the article «Making Sense of Blockchain Smart Contracts» by Josh Stark of Ledger Labs, a smart contract can be broken down into two separate components:

1. Smart Contract Code – The code that is stored, verified and executed on a blockchain.
2. Smart Legal Contracts – The use of the smart contract code that can be used as a complement, or substitute, for legal contracts [6].

Lawyers will be able to move from writing traditional contracts to create the type specimens of smart contracts and Blockchain Technologies «smart contracts» can turn into a electronic-paper hybrid, as they are confirmed blockchain and find material embodiment in the form of paper copies [7].

At the moment there are several types of blockchain where you can develop and enter into «smart contracts», such as Bitcoin, Side-Chains, NXT and Ethereum. With the latter, signed by the parties «smart contract» asset or currency are translated into the program, which monitors compliance with laid down a set of conditions, at some point, this program confirms whether the conditions of the contract are automatically determined if the specified asset to go to one of the parties to the agreement or to immediately return to the other party. All this time the document is stored and duplicated in a decentralized registry, which ensures its reliability and does not allow any of the parties to modify the terms of the agreement. Contracts can be written in any blockchain, but Ethereum is the most popular because it provides unlimited opportunities for writing smart contracts and work with them [4].

Ethereum is a decentralized platform that runs smart contracts: applications that run exactly as programmed without any possibility of downtime, censorship, fraud or third party interference.

These apps run on a custom built blockchain, an enormously powerful shared global infrastructure that can move value around and represent the ownership of property. This enables developers to create markets, store registries of debts or promises, move funds in accordance with instructions given long in the past (like a will or a futures contract) and many other things that have not been invented yet, all without a agent or counterparty risk.

From a legal point of view, the «smart contract» must contain the subject of the contract, it's can only be the object that is inside habitat «smart contract» or provide an unobstructed, direct access to the «smart contract» to the contract without human intervention. The fee for the contract are or cryptocurrency, for example bitcoin or the other. The signatories – parties that identify themselves, or remain anonymous and users are one of blockchain platforms.

The rights and obligations of the parties in the sense that enshrined in national legislation, does not exist. The main difference between «smart contracts» – the possibility of automatic execution.

Also the main feature of «smart contracts» is that they are not possible of appeal and to change the terms of the contract unilaterally but I would disagree. The code prescribes the conditions and situations governing the relationships of the parties. In my opinion, as long as the heads of terms that sit behind the contracts are clear – and have clearly been accepted by the parties – there is scope to litigate if the code is deemed not to be fit for purpose or has affected the transactions it is meant to support and/or the payments associated with those transactions.

But, this is, however, where things could get more complicated. As there is currently no international internet law, the original contract would have to set out the jurisdictions of the parties and which country's law the contract is reliant upon. Again, these aren't decisions that code can make, so these definitions and agreements would have to be made by people, quite possibly with specialist legal advice.

In determining the legal nature of «smart contracts» should first determine whether to consider them as civil contracts. According to p. 1, Art. 626 Civil Code of Ukraine an agreement shall be an arrangement between two or more parties targeted at the establishment, change, or termination of civil rights and responsibilities. contract is an agreement, and in accordance with Part 1 of Art. 205 Civil Code of Ukraine, the parties shall have the right to choose the form of transaction, unless otherwise estab-

lished by the law [1]. In the broadest sense, «smart contracts» are as defined in the legislative definition of the contract and can legally exist.

In addition, as conventional civil contracts «smart contracts» mediate the movement of a detachable values existing in electronic form, where the values move from one counterparty to the other counterparty.

In this ways, «smart contracts» are differ from simple click-wrap agreements on the Internet as to conclude such an agreement, because, if a buyer wants to conclude such an agreement, the buyer will click the words «I agree». The buyer automatically indicates that accepts the terms of the seller (widely used in the sale of services and digital content).

As for the volitional aspect conclusion of «smart contract», it should be noted that the parties express their will in a manner determined in the relevant system, for example by making certain order, approved by its electronic signature.

In addition, these «smart contracts» often concludes on the model contract of adhesion. Terms of «smart contract» often form by a party, who writes the code and all other members joined up its terms.

It should be noted that «smart contracts» are conditional agreements because one of the duties of the parties depends on the onset circumstances that prescribed in the source code of «smart contracts», expressed by construction «If... then...» Thus, this type of relationship can be described as either conditional agreement or a contract in which the legal consequences associated with the onset of certain circumstances (212 CC of Ukraine).

For «smart contract» impossible situation of failure or improper performance of the contract. If we use «smart contracts» many remedies redress, such as coercion to the obligation in kind will lose their value. As for the damages and penalties, theoretically they can be included in the code of «smart contract.» You can also suggest the possible existence within the «smart contracts» digitized analog deposit penalties digital asset collateral, surety [8].

Therefore, one of the main problems of using «smart contracts» in practice is that they are not designed to protect the weaker party. First, there is an increased difficulty understanding the terms of such contracts and the mechanism of their functioning, and it needs to understand some technical issues. In addition, all participants of «smart contract» are equal to its terms and thus – to each other, so there are no advantages over the unprotected side.

Currently, most of the contracts with customers (including the Internet) fits the model contract of adhesion, where the action of the principle of freedom of contract to the consumer side is limited only by

the ability of the decision to contract or to abandon its conclusion.

If we wanted to protect the weaker party in the “smart contracts” we could use intelligent electronic agents that could be programmed by the consumer and aimed at finding contractors and conditions necessary to the consumer. Some examples of such agents are used to the platform online auction site eBay, there we can use specialized software–snipers that based on predefined parameters selected attractive proposals, submit bids on behalf of a particular step [3].

However, «smart contracts» can also be used to achieve illegal goals, as well as the problem of using technology Blockchain to perform illegal acts isn't new and actively discussed since the time when information began to appear about using bitcoin as a payment for drugs, weapons, illegal content, services, killers, etc. Thus, despite the fact that the treaty will be invalid in terms of the law (Art. 228 CC of Ukraine), it will still be vested property performance. However, it still may initiate the process to prosecute members of the contract in the event of a successful unmasking the anonymous users through technical and legal means.

In order to prevent the existence of «smart contracts,» violating public order, to create a virtual legislation symbiosis type that provides reading and recognition computer software standards, which technically can be created by a special legal language programming which will be recorded by existing and new legal norms, and thus if the unscrupulous contractors want to enter a «smart contract» that would violate the law or the rights and interests of others, system block f these transactions, as they are contrary to existing regulations or public order.

However, as «smart contracts» appeared not so long ago, there are many unresolved issues, such us errors that may occur in the system, reliability of sources of digital data, and to providing decentralized databases, which completely eliminates the human factor, decentralized implementation of «smart contracts». But there are individual cases of the introduction of the blockchain and «smart contracts» in the legal field, for example, in Arizona, on 3 April 2017, there was adopted a law that recognizes the legitimacy of the signatures stored in blockchain, as well as the legality of the use of «smart contracts».

Conclusions. So, to summarize, «smart contracts» are close to ideal way of entering into transactions and structuring relations between the parties, where in the near future in the digital field will be transferred to all contractual relationships that requires lawyers timely response to the innovative challenges of the modern world.

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Микитин Марія Василівна**ПРАВОВА ПРИРОДА «СМАРТ КОНТРАКТІВ»**

В статті розглядається визначення правової природи «смарт контрактів» відносно легального визначення договорів в цивільному законодавстві України, розмежовуються «смарт контракти» від click-wrap угод в Інтернеті, аналізується вольовий аспект укладання «смарт контрактів». Запропоновано для вирішення проблем захисту слабшої сторони використовувати інтелектуальні електронні агенти, програм-сніпери (snipers), встановлено необхідність створення віртуального законодавства, симбіозного типу, що забезпечує читування і розпізнавання норм комп’ютерними програмами, яке з технічної точки зору може бути створене за допомогою спеціальної мови юридичного програмування задля виключення «смарт контрактів», які порушують публічний порядок.

Ключові слова: «смарт контракти», цивільні договори, автоматичне виконання, блокчейн, віртуальне законодавство, ІТ право.

Микитин Марія Васильевна**ПРАВОВАЯ ПРИРОДА «СМАРТ КОНТРАКТОВ»**

В статье рассматривается определение правовой природы «смарт контрактов» относительно легального определения договоров в гражданском законодательстве Украины, разграничиваются «смарт контракты» от click-wrap сделок в Интернете, анализируется волевой аспект заключения «смарт контрактов». Предложено для решения проблем защиты слабой стороны использовать интеллектуальные электронные агенты, программ-сниперы (snipers), установлена необходимость создания виртуального законодательства, симбиозного типа, что обеспечивает считывание и распознавание норм компьютерными программами, которое с технической точки зрения может быть создано с помощью специального языка юридического программирования для исключения «смарт контрактов», которые нарушают общественный порядок.

Ключевые слова: «смарт контракты», гражданские договоры, автоматическое исполнение, блокчейн, виртуальное законодательство, ІТ право.

Mykytyn Maria Vasylivna**THE LEGAL NATURE OF «SMART CONTRACTS»**

The article deals with the definition of the legal nature of «smart contract» regarding the legal definition of civil law contracts in Ukraine, distinguishes «smart contracts» of click-wrap agreements online, analyzed willed aspect conclusion of «smart contracts.» Proposed to address the protection of the weaker party to use intelligent electronic agents, application-snipers, established the need to create a virtual law symbioz type that provides reading and recognition computer software standards, which technically can be created with a special legal language programming for the exclusion of «smart contracts,» violating public order.

Keywords: «smart contracts», civil contracts, automatic execution, blockchain, virtual legislation, IT law.