

LEGAL ASPECTS OF BLOCKCHAIN TECHNOLOGY USE

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ABSTRACT

The legal regulation of blockchain technology in Ukraine is now in its nascent stage. Legislators are actively working in this direction, but so far there are only bills submitted for consideration by the Verkhovna Rada, or draft bills. Therefore, while using blockchain-based systems, one should be guided by general norms and international standards regarding the scope of activities of blockchain companies. This document should also consider aspects of the activities of various blockchain companies depending on their type of activity. Firstly, we are talking about defining the legal aspects of the activities of mining companies-those that provide functioning of various areas of cryptoeconomics. Secondly, cryptocurrency companies that allows exchanging, selling virtual currencies and creating platforms for cryptocurrency trading. Thirdly, ICO companies-those that attract financing through the Initial Coin Offering. Fourthly, these are companies that offer and provide services and / or goods using blockchain technology.

Keywords: Blockchain, Cryptocurrency, Virtual Currency, Initial Coin Offering, Mining.

INTRODUCTION

The modern world is developing at a frantic pace, and every day new technologies are emerging, the use of which is aimed at improving people's lives. One of such technologies, the use of which is expected to provide significant progress in the development of various spheres of human activity, is blockchain technology. This technology has become widely known through its use as a technological base for cryptocurrency. However, this is far from all possible areas of progressive technology use.

Blockchain is defined as a decentralized or distributed electronic registry of reliable and constant data, the operation of which is based on cryptographic algorithms, the main property of which is to record information about all transactions made by creating block transactions. The operation principle of the blockchain is quite simple. In the most general case, it can be represented as an account book that every participant in the system has on the basis of blockchain technology and in each of which all transactions without exception that took place in this system are recorded. In this book, you can record any transaction-from financial transactions with cryptocurrency to the voting results of elections.

A characteristic feature of blockchain technology is that the pages of this book are simultaneously stored by all network users, are constantly updated and have links to previous

pages. If you try to falsify a record of any transaction by removing or pasting a page into a book, the system will immediately turn to tens of thousands of other versions of this book and find a discrepancy in the structure of blocks.

Due to certain advantages of the blockchain, namely the general availability, distribution and 100% reliability of the database, the blockchain is an attractive and promising technology for various spheres of human activity: in administration, law, financial sector, banking, real estate industry and many others. It is the increase in the scope of use of blockchain technology that necessitates the creation of a legal framework for regulating relations in the use of systems based on blockchain technology.

REVIEW OF PREVIOUS STUDIES

Cryptographic methods of information protection are special methods of encrypting, encoding or otherwise transforming information, as a result of which its content becomes inaccessible without presenting a cryptogram key and reverse transformation (Coyne & McMickle, 2017).

Why is this technology considered decentralized? It is easier to determine when you know what a centralized database is. As an example, we can use the registry of banking operations—a traditional database. This registry contains data on all income and expenses on the personal accounts of bank clients. If a client transfers part of his/her money to another client, an entry will appear in the bank registry on the decrease in the amount of money in his/her personal account. And the database, which is hosted on the computers of the bank, is administered and stored centrally. In this case, it is the bank that will manage the addition, editing and deleting of information in the registry (Drobnyazko et al., 2019; Garbowski et al., 2019).

Decentralized (or distributed) databases work on other principles. Information in such a registry is stored on many independent computers that are not connected by a single owner or location (Hilorme et al., 2019). Copies of the same database are hosted on different servers, and, thus, a one-man change of information becomes impossible. However, this brings up the question of monitoring the safety of data in conditions where each node can record it independently.

In order to solve this problem, each transaction is encrypted as a character string (Dai & Vasarhelyi, 2017). Each cipher is unique and can only be obtained on the basis of a specific data set. In addition, each new money transfer contains links to previous transactions. Thus, all the transactions in this chain turn out to be interconnected, and any attempt to change the preliminary data will be quickly detected by network participants by checking the cipher.

Thus, blockchain technology provides for the storage of the same database on different servers and data encryption (Karajovic et al., 2017). However, here the question arises of the “*agreement*” of the independent nodes with each other about which copy should be considered true. This is where the need for a consensus mechanism arises.

In general, consensus is a general agreement on controversial issues that participants in negotiations, congresses, and conferences come to, which is characterized by the absence of serious objections to significant issues from most stakeholders and is achieved as a result of a procedure aimed at taking into account the opinions of all parties and the convergence of diverging views (Kokina et al., 2017). In the context of the blockchain, this is a mechanism that allows network participants too freely and without risk transfers each subsequent transaction to a

shared network. Using the banking registry as an example, each node in the blockchain stores information about previous transactions in its own copy of the database and calculates the current balance of the client who requested the transaction. If it turns out that there is enough money, a new transfer in favor of another client can be added to the registry.

METHODOLOGY

The methodological basis of the study is general scientific and special methods of cognition. Using the historical method, we study the path of the emergence and development of blockchain technology in the world. The dialectical method of cognition studies the legal relations that are taking shape in the use of blockchain technology. The logical and legal method is used to formulate reasonable conclusions, as well as to design proposals regarding the direction of development of the legal framework for the use of blockchain.

RESULTS AND DISCUSSIONS

Presently, the number of blockchain companies is growing steadily, both around the world and in Ukraine. According to business research, a company that adds the prefix blockchain to its name increases its value in times. That is why this growth should be taken into account by the states where these companies are registered. And Ukraine is not an exception.

There is no doubt that blockchain does not work in a legal vacuum. Depending on how you use this technology, different legal rules may apply. Unfortunately, Ukraine does not yet have special rules to regulate the establishment and functioning of companies operating using distributed registry technology. Therefore, such companies should be guided by the general rules governing the implementation of entrepreneurial activities, taking into account current Ukrainian legislation in the field of civil and commercial law.

Thus, it should be noted how the practical use of blockchain technology looks like in various spheres of public life, taking into account the existing regulatory framework in Ukraine.

First of all, it is necessary to determine what a blockchain company is: it is an enterprise that uses blockchain technology in its activities as part of a business model. For example, the provision of legal assistance to Initial Coin Offering (hereinafter-ICO) projects does not yet give reason to consider the company as a blockchain organization. It is the use of the blockchain as a unique or integral component of commercial activity that allows us to fairly add the blockchain prefix to the words of the company or entrepreneur. Similarly, one can talk about blockchain organizations, funds and other non-profit associations, if they build their activities on the basis of blockchain technology. For example, creating a list of beneficiaries who receive charity assistance, reporting on the distribution of assistance, protecting and storing this information using the capabilities of a distributed registry.

If we consider the business entities that support the functioning of crypto-economics and create the foundation for the development of other blockchain companies-that is, mining companies, the legal organization of their activities is important. The mining process ensures the existence and functioning of the Bitcoin and Ethereum ecosystems. And in spring 2018, the Government instructed to develop the necessary documents for including cryptocurrency mining activities into the Classifier of Economic Activities. Namely, the addition of the content of the code of types of economic activity under the number 63.11 with the specification of the purpose of data processing.

From now on, there is a classifier of types of economic activity (hereinafter referred to as KVED) for mining, which means that “*services to support and ensure the functioning of distributed data registries, incl. using blockchain technology, data processing and smart contracts in distributed blockchain registries*” are now subject to legal regulation in Ukraine.

However, not everything is as good as it seems at first glance. Nevertheless, there are some shortcomings that may result in abuse, for example, from the taxing point of view. The fact is that “*mining*” can only sometimes be considered as a service in the framework of bilateral relations. For example, if computing power will be directed to support the work of a promising “*blockchain government*”. At the same time, the mining of cryptocurrencies and altcoins cannot be considered in any way as services, and, accordingly, as contractual relations within the framework of the legal field of Ukraine. And really-with whom in this case should we conclude an agreement on Bitcoin mining? Unfortunately, this is a rhetorical question.

Therefore, we can conclude that it is necessary to inform the regulatory authorities of a detailed explanation of the content of the updated KVED for mining. Such measures will help to prevent potential abuse. Miners should be given the opportunity to focus on the last part of the proposed changes-data processing and smart contracts in distributed blockchain registries. It is interesting, but in this case, by its legal nature, this process will be more closely associated with the production of “*goods*” than the provision of services to “*all users*” of a distributed blockchain registry.

One way or another, the real purpose of mining for the miner himself is to make a profit. Therefore, the legalization of entrepreneurial activity and the including amendments to the KVED 63.11 is quite logical. In fact, mining companies choose any of all legal forms that allow them to conduct entrepreneurial activities. For example, if it is necessary, it is quite possible to register even a joint-stock company.

RECOMMENDATIONS

However, in practical terms, it is necessary to consider such options:

Registration of an Individual Entrepreneur or Even Several Individual Entrepreneurs (IE)

This option consists in registration of all the equipment for mining with an individual. The same person enters into a lease agreement of premises (or uses his/her own premises), an agreement for the supply of electricity and the provision of telecommunication services. The disadvantages of this option are the limited scope of activities, the need to indicate income in the general declaration and pay personal income tax at the base rate (18%+1.5% military duty).

Incorporation of a Limited Liability Company (LLC) or a Private Enterprise (PE)

In this case, business owners need to take care of responsible accounting, timely submission of tax and statistical reporting, safe contractual work with contractors (carefully check contracts for the supply of equipment), etc. That is, the legal entrepreneurial activity of cryptocurrency mining should be carried out according to the same rules as any other, although it will have its own peculiarities. For example, when launching a website to attract potential investors, it is necessary to ensure compliance with legislation on the protection of personal data and other applicable requirements. Otherwise, the entrepreneur can pay huge fines. Another

nuance-when hiring employees, it is necessary to carefully study labor legislation in Ukraine. And it should be noted that it is one of the most severe in the world for employers. Therefore, choosing the “*LLC+Director*” model instead of several IEs, one should carefully consider the requirements of the Code of Labor Laws of Ukraine. In fact, cryptocurrency mining in the form of legitimate entrepreneurial activity allows you to work safely and legally only if such activity is carried out responsibly and in compliance with all existing regulatory rules.

CONCLUSIONS

The legal regulation of the activities of blockchain companies that provide services using the capabilities of blockchain technology is carried out in a slightly different way. The blockchain company of this kind will usually not require specific regulation. The most difficult thing is through the variety of applications of blockchain in business. In general, almost any blockchain company that provides services based on the capabilities of blockchain technology can be created and registered in Ukraine. The existing norms of civil and economic legislation are sufficient to adequately regulate the activities of blockchain companies of this kind.

It's quite difficult to talk about standardized regulation of the use of blockchain in Ukraine, when unified standards are still at the development stage in the European Union. Now there is a process of discussion of such standards. But it should be noted that the unified regulatory framework serves to solve the issues of activity of not all blockchain companies, but primarily those that conduct Initial Coin Offering.

It is sure enough that national legal systems always have their own characteristic features. The sphere of legal regulation of “*relations around the blockchain*” is not an exception. At the same time, specific regulation rules, for example, on conducting ICOs, will have similar meaning in different countries of the world. The rules of intellectual property law, which have the established practice of application, are of essential value for blockchain companies. After all, the unique and effective blockchain solutions should be urgently protected by existing legal tools.

In addition, it may turn out that one or another way of use of blockchain technology already has legal protection (for example, a patent) and cannot be used without the consent of the copyright holder.

Thus, the blockchain company (except for crypto-exchanges and companies of ICO projects) is quite successfully registered and operates in Ukraine. There are various organizational and legal forms of doing business and taxation systems to choose from.

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