



Transformation of Settlement Relations in the Context of Industry 4.0: Conversion of Blockchain Club's Crypto-codes into Legitimate Analogues

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Abstract

The authors investigate the rapid transformation of digital settlement tools—crypto-codes of anonymous members of private blockchain clubs into legitimate analogs—digital monetary units of countries. This interest is being gradually transformed into purposeful efforts by countries to legitimize these digital settlement tools—crypto-codes as a kind of public money—digital currencies. The country has gratuitously received a proven and viable legal structure. This legal structure is based on information computer technologies and is quite suitable for creating a public and generally binding settlement instrument—a digital monetary unit of any contemporary jurisdiction. In this regard, continuous scientific and legal prevention and predictive research on the main trends and dynamics of changes in public relations are necessary for their timely and high-quality public regulation.

Keywords

Industry 4.0 · Blockchain club · Crypto-codes · Digital currency · Free will · State · Transformation · Settlements

JEL Codes

D91 · F42 · F43 · F64 · Q15 · O31 · O32 · O33

1 Introduction

Over the past decade, people have increasingly used the Internet as an information space in which they organize their communities of interest; such communities have received their characteristic name—social networks. The Internet consists of billions of computers connected to each other, the images from which are transmitted via cables to monitors. This image can be with text, photo, or video content accompanied by sound. To receive such content on a computer, the subject needs to search for certain websites on the Internet, enter them for a fee or free of charge, and receive a stream of information on the necessary content (Goncharov & Inshakov, 2020).

The Internet allows us to remotely buy goods, including home delivery services; credit organizations provide remote banking services. Almost all bank settlements and payments can be made via Internet banking. Since 2008, special settlement clubs have appeared on the Internet, within which initiative programmers have launched private settlement tools (program codes). Participants of these groups can exchange these settlement instruments with each other, receiving certain goods and services in return, including the opportunity to exchange these settlement instruments for real money. Such an illegitimate private settlement system provides for the networking of many electronic wallets, the use of which is possible only with the help of individual logins and passwords (Goncharov & Inshakov, 2020). The movement of information through communication channels in this settlement system occurs exclusively in encrypted form; each operation is recorded in the communication node of each participant in the calculations and stored in the archive folder permanently (blockchain). A record that is fixed imperceptibly cannot be deleted, changed, or distorted. Therefore, the so-called crypto sector arose, and these digital settlement tools—crypto-codes—were rapidly developed (Inshakova et al., 2020).

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2 Materials and Methods

The authors studied “On digital financial assets, digital currency, and amendments to certain legislative acts of the Russian Federation”, “On currency regulation and currency control” and “Accounting of financial investments”. Judicial acts concerning the studied issues were also analyzed.

3 Results

Approximately 1% of epy volume \square a global financial assets in 2022 is a digital settlement tool—crypto-codes, the turnover of which is carried out on foreign Internet platforms and exchanges. According to the Bank of England estimates, 95% of the settlement digital tools—crypto-codes—currently in circulation are unsecured (Central Bank of the Russian Federation, 2022b). The term “digital currency” has firmly entered the normative legal tools. The mention of this term provides for the creation of a legitimate monetary unit of the country, secured by all assets of the Central Bank (Ministry of Finance of the Russian Federation, 2002; Goncharov & Inshakov, 2020; Inshakova et al., 2018).

It should be pointed out that, according to the legislator, the entire cycle of crypto-codes occurs as if in a vacuum. “The federal law regulates the relations arising during the issuance, accounting, and circulation of digital financial assets, peculiarities of the operator of the information system in which digital financial assets are issued . . .” (Russian Federation, 2020).

Any subject, at their will and in their interests, creates such property using encryption software on a computer. The legislator very briefly outlined in the federal law (Russian Federation, 2020) his understanding of digital currency. The digital currency is a special legitimate kind of currency in “On currency regulation and currency control” (Russian Federation, 2003), from 2021. We do not see any special differences from our term: settlement digital tools—crypto-codes.

According to the legislator, members should expect in full confidence that the designated operator will faithfully enforce the procedure for issuing digital currency in the form of a set of electronic data. Moreover, members should expect compliance of the order of issue of digital currency with the rules of this information system. This reservation does not specify or legitimize anything (everything just has to happen exactly according to the charter of the anonymous “blockchain club”). The same thing again: everything should happen exactly according to the charter of the anonymous “blockchain club.”

This is the first time we have seen such a somersault of legislative regulation in our entire research practice. This is

completely unacceptable because the node of the information system is not a person and not a subject of law and because the node itself (one of the computers of some user—an anonymous member of the “blockchain club”) works automatically according to the algorithm of the program, will never give any answers to any questions. The proper functioning of any computer algorithm always and unambiguously depends on a particular person.

Simultaneously, due to decentralization, cryptocurrencies do not have a subject that ensures their conditional solvency (Arbitration Court of the City of Moscow, 2018; Federal Financial Monitoring Service (Rosfinmonitoring), 2014). Analyzing the created legislative matter, we can again verify the correctness of our conclusion. A digital currency is a kind of individual set of characters that arises spontaneously and creatively for the implementation of a specific entrepreneurial idea inside the code of a special computer algorithm. According to the rules of a particular “blockchain club,” this individual set of symbols can, first, be replicated and, second, be used in calculations within the club.

This computer algorithm allows one to generate and use the same computational settlement digital tools—crypto-codes that function in an information system (on a specific website). Access to the information system (to a specific website) is carried out through the Internet in the presence of special software without restrictions. That is, access is for everyone who wants to voluntarily join this anonymous “blockchain club” of owners and users of such settlement digital tools—crypto-codes. We believe that, as objects of civil rights, digital financial assets—a type of property in electronic form, requires, at least, more precise regulation at the legislative level and further study at the doctrinal level.

Simultaneously, it is necessary to notice the attention and, above all, the fiscal interest of the state elites of many jurisdictions in digital currencies. This interest is gradually transformed into a purposeful effort to legitimize these digital settlement tools—crypto-codes as a kind of public money. Currently, law enforcement agencies, in the absence of a legally established system of traceability of crypto-financial flows and data on identified holders of digital currencies, cannot effectively respond to offenses and crimes committed with their use (Government of the Russian Federation, 2022).

It is likely that we will soon see new subjects in this federal law; it is quite possible that these will be: (1) the organizer of the digital currency exchange system; (2) the operator of the digital currency exchange. It is logical that the organizer of the digital currency exchange system is a large credit institution with a universal license and a modern, convenient website. A digital currency exchange operator is ideally a legitimate trade organizer—a large exchange (Government of the Russian Federation, 2022). We consider it important to clarify that all hardware and software complexes

should also be located in the Russian jurisdiction (Russian Federation, 2020; Inshakova et al., 2020; Kalinina et al., 2019).

We are against such tolerance in this segment of investment relations. We believe that foreign legal entities should not be allowed to enter the domestic market during at least the first five years of working out the mechanisms of organizing the circulation of digital currencies (Central Bank of the Russian Federation, 2022a; Kommersant, 2022). In this regard, we support the proposals of D. E. Matytsin that private investors wishing to make investment transactions in the information space must first undergo training and certification. Individual certification of a citizen—a private investor should be completed by assigning them a code from the All-Russian Classifier of Types of Economic Activity-2 as an individual entrepreneur who systemically makes investment transactions on the Internet. According to the results of these legally significant events, a special service should be opened for a citizen—a private investor on the portal “Public Services” in their personal account. Such a service should provide access to investment offers and remote interaction with the organizer of the digital currency exchange system, as well as with the operator of the digital currency exchange. Moreover, a citizen—a private investor should be issued a single qualified electronic signature, permanently stored in the Internet cloud on the same portal “Public Services” (Matytsin, 2022a; Matytsin, 2022b).

4 Conclusion

It is proposed to introduce fines for organizing the issuance or turnover of private cryptocurrencies within Russia for individuals for 300–500 thousand rubles and for accepting payments in private cryptocurrencies—30–50 thousand rubles. In these cases, the fine for legal entities may range from 700 thousand to one million rubles for violating the established requirements.

Freedom of will and independent decentralized building of relations between entities using blockchain to achieve their private material interests have demonstrated a very useful and socially significant result. The country gratuitously received a viable legal structure, proven by a decade. This design is based on information computer technologies and is quite suitable for creating a public and generally binding settlement instrument—a digital monetary unit of any contemporary jurisdiction.

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