

CULTURAL SCIENCES

BLOCKCHAIN TECHNOLOGIES IN THE FORMATION OF CRYPTOCULTURE

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Abstract

The article analyses theoretical approaches of research of the concepts "blockchain technologies", "cryptoculture", correlation of these concepts with the database and NFT-tokens (digital assets) used in preserving the authenticity of cultural products. The author reveals the range of blockchain technology research in different areas of activity. The experience of Vietnam, the country leading the process of cryptocurrency introduction, is analysed. The base of legal regulation of crypto activity of the Republic of Belarus is summarised. The ambivalent nature of scientific research on this topic is revealed.

Keywords: blockchain technology, cryptoculture, digital assets, tokens, mining, bitcoin, crypto activities

Introduction. Blockchain technologies are gaining popularity and are used in various fields of activity. These technologies have significant potential also for the cultural sphere and in the near future can become an effective tool in the organisation of online libraries, digital art spaces, concert organisations, music services, fashion-centres and other cultural and educational projects.

Blockchain is a new technology of the XXI century, which appeared in 2008 during the next economic crisis. The dynamics of the global financial system, as well as the possibilities of its managerial transformations, predetermined the development of blockchain technologies, endowing them with declared properties: openness, immutability of data storage, absence of intermediaries, security, built-in protection against attacks, etc., which also began to be successfully used in the promotion, storage and transfer of cultural products.

The concept of "blockchain" comes from the two English words "block" and chain [1] and defines a technology that creates chains of information blocks (transactions) distributed among network participants. Each block contains information about the previous block, so that if one block is changed, all subsequent blocks automatically become invalid.

Blockchain also refers to a database for storing the entire history of transactions. The professional component of blockchain technology participants is not necessarily related to financial, analytical or economic spheres of activity. Blockchain technologies are effectively used in the cultural sphere, for example, in the promotion, storage and transmission of cultural products, as well as for their placement on interactive platforms, providing transparency of interactions, copy-right protection in the distribution of content.

The emergence of blockchain technology is associated with the pseudonym of the creator Satoshi Nakamoto or the group of developers of the cryptocurrency Bitcoin (2008), which became the first most famous cryptocurrency in the world [2].

Main part. Cryptoculture and blockchain technologies are associated with financial instruments, a male community of analysts, exchanges and trading, the possibility of quick enrichment, a private method of shopping, as well as decentralised technologies that are rapidly developing and are of increasing interest to the global community. Also these concepts are associated with the source of a large amount of energy - mining, i.e. "the activity of creating new structures (new blocks) that ensure the functioning of cryptocurrency platforms" [3].

The spectrum of crypto platforms is becoming versatile and includes not only financial and business areas, but also educational, scientific and cultural spheres of activity. In this regard, we can talk about the formation of a new phenomenon - "cryptoculture", based on blockchain technologies and uniting different areas of activity from financial and technological, social and legal, communicative to artistic and creative, such as digital art (painting, architecture, music, cinema, etc.).

Cryptoculture, as part of the Internet, combines real and virtual activities in the development, implementation and promotion of cultural products, using blockchain technologies and crypto platforms to stabilise their location or to perform intended actions with them (storage or distribution).

The etymology of the term "cryptoculture" connects two concepts: "crypt" (from Greek κρυπτή) – a covered underground passage; a hiding place [4] and "culture" (Latin. cultura) - cultivation; human achievements in the subjugation of nature, in technology, education, social order [5]. Moreover, "crypta" as a basis in the concept of "cryptography" (from Greek kryptos – secret; grapho - to write) is perceived as secret writing [5].

A similar meaning is embedded in the name of the element "krypton" (hidden, secret) - an inert gas discovered in 1898, a gas without colour, taste and smell in the famous table of D. I. Mendeleev [6].

In medicine, the term is actively used in naming various symptoms or diseases, somehow related in the meanings of "hidden", "unknown", for example [7]:

- «crypto-abscess» – an abscess in the crypt of the tonsil or colon;
- «cryptomnesia» – a memory disorder in which the boundaries between real events are erased;
- «cryptogenic» – a disease arising by unknown means, etc.

The combination of heterogeneous concepts of "crypto" and "culture" implies syncretism of virtual and real reality: technical, information and communication, artistic and creative with the possibility of fixing and commercialisation of cultural products, their placement and confirmation of copyright (uniqueness), with subsequent tracking through blockchain chains of their distribution.

Cryptoculture involves the user's theoretical and practical knowledge of:

- history of the emergence of cryptographic operations;
- legal regulation of cryptoculture in the country where the user plans to carry out this activity;
- types of cryptocurrency platforms and tools;
- development and distribution of digital cultural products based on blockchain technologies;
- terminology (ersatz language) used by users when working with blockchain technologies;
- risks and operational security.

Most scientific conclusions on the topic of cryptoculture are ambivalent. Some authors consider this phenomenon through the prism of the history of blockchain technologies, technological replication of cultural products; others link cryptoculture with the worldview philosophy of "uniting the world", which can be implemented with the help of decentralised technologies through a neutral infrastructure "to provide public goods" [8].

One of the advanced countries whose status is now considered the highest in shaping cryptoculture is Vietnam. The country is leading the mass adoption of cryptocurrency, with one in five Vietnamese respondents having knowledge in crypto innovation. The government has passed a law that recognises crypto transactions as a legal investment tool, and the country's Ministry of Finance is developing a strategy to develop the digital economy.

The rapid development of cryptoculture in Vietnam is due to several factors, according to Binh Nguyen, a researcher and funding programme manager at the Royal Melbourne Institute of Technology [9]:

- firstly, the Vietnamese market, where the average monthly salary is about 260 USD, is retail-oriented, and the majority of Vietnamese want to increase their savings through crypto platforms, thus insuring themselves against inflation;
- secondly, gambling is banned in the country, which encourages citizens to find legal alternatives;
- third, most Vietnamese emigrants who live and work abroad actively use crypto platforms to send money to their families, with low transfer fees;

- fourth, of the 97.5 million Vietnamese citizens, only 30 per cent have a bank account, and the proportion of internet users who own smartphones in Vietnam is 97.6 per cent. Therefore, crypto platforms are used as an alternative for storing and multiplying savings, with the possibility of fast money transfers if needed [10].

Well-known Vietnamese crypto companies Coin98 and Kyber, which have reached a market capitalisation of US\$1 billion, have strengthened Vietnam's reputation as a crypto investment hub.

The popularisation of crypto innovation in Vietnam was also helped by the emergence of Axie Infinity ("Axie Infinity", hereinafter referred to as Axie) in 2017, which later became one of the most famous online games in the world, developed on the basis of NFT (unique token stored on the blockchain).

NFT (Non-Fungible Token) - Non-Fungible Token is a digital content created based on blockchain technology, used to represent unique assets. Unlike ordinary tokens, non-fungible tokens cannot be substituted for each other, as they have their own unique identifier [11, p. 123].

The isolation and remote working of people during the Covid-19 period contributed to the particular success and spread of Axi. Thus, for the period in July 2020, the number of players from 28 thousand increased in December 2021 to 3 million [9].

The analysis of scientific literature allows us to assert that the concept of "cryptoculture" is at the stage of formation. Thus, Paul J. Ennison, associate professor at the University College of Business in Dublin, believes that the culture of cryptocurrency is unified and monolithic, and bitcoin is a "theory of society" based on the collapse of the paper monetary system. Decentralised services will expand and gradually replace centralised counterparts in the traditional world [12].

In scientific papers, P. Ennison understands cryptoculture as "an open-source community with its own microeconomy, embedded values in each blockchain, which develop on the basis of sociotechnical agreement, where values and technologies are mixed up" (P. Ennis) [12].

Researchers from the University of Illinois Andrew Bailey and Craig Warmke call bitcoin - a royal currency, given its characteristics of emergence, culture and market. Among the 13,457 types of currencies in 2023, bitcoin is one of the most honest currencies, the authors say. Every 10 minutes, one miner successfully creates a transaction fee and receives a certain number of bitcoins according to an automatic issuance schedule. Technology promotes honest behaviour of participants [13, p. 175-176].

Experts predict a maximum demand for the royal currency by 2040 of 21 million bitcoins [14, p. 178] (as of December 2023, the number of bitcoins reached 19.579 million out of 21 million) [15]. This currency does not require a bank account (only the presence of the Internet), today experts consider it as an investment to save money for the long term, with lower transaction costs.

For the Republic of Belarus, cryptoculture is still in its formative stage despite the fact that the Republic of Belarus is the first country in the world to legalise bitcoin in 2017 at the state level.

The legal regulation of crypto activity in the Republic of Belarus is enshrined in Decree No. 8 [16], where individuals are allowed to own digital tokens (tokens) and, taking into account the specifics established by the Decree (part 1, subparagraph 2.2, paragraph 2), perform the following operations [17]:

1. mining;
2. storage of digital signs (tokens) in virtual wallets;
3. exchange of digital signs (tokens), their alienation in national currency (Belarusian rubles), foreign currency, electronic money;
4. donation and bequest of digital signs (tokens).

Belarus ranks 65th out of 204 countries in terms of the number of cryptocurrency users. Transactions with tokens in the Republic of Belarus are not subject to value added tax, which makes crypto-investments more attractive. Despite such conditions, only 2.9% (270 thousand) of Belarusians are involved in crypto activities [18].

The scientific approach to cryptoinnovation and blockchain technologies can be observed in the activities of the International Association for Cryptographic Research (IACR), founded in 1982, which actively conducts scientific events (conferences, seminars, forums, etc.) and research on the theory of cryptography, information security and cryptoculture adaptability processes in the world [19].

Research confirms that the formation of cryptoculture based on blockchain technology is transforming people's behaviour and livelihoods. The way participants interact in P2P is based on trust and commitment to fulfil the transaction. Since P2P exchanges are decentralised, payments are verified by miners, a process called cryptostaking. P2P exchanges (Binance, OKX, Bybit, Garantex, etc.) serve people around the world, offer commission-free trading (e.g. Cryptus exchange) and high security protocols, and may eventually replace the traditional banking system. Active communications allow users to make international transactions, share news and trends, and organise and manage their businesses.

Scholars identify five patterns of cultural change that result in the formation of [20]:

- individualism and individualistic societies with weak ties and independent forms of communication;
- autonomy and distance from authority;
- stability and predictability, analysing situations, avoiding uncertainty and risks;
- male-type societies (European and US countries, Canada), characterised by: ambition, assertiveness, success and profit orientation;
- long-term and pragmatic future orientations.

The research findings highlight the specific cultural aspects in the implementation of crypto relationships in individualistic societies (e.g., such as the United States) and collectivistic societies (e.g., Chinese

society). For example, the level of trust in cryptoinnovations is higher in a collectivist society due to the high communication and support of social groups united by a common theme compared to an individualistic society. Here, crypto platforms are viewed from the perspective of self-centredness - achieving high returns in a short period of time, with the possibility of hiding personal data in transaction processes and storing money outside the legal boundaries of the state [20].

The collectivist approach in promoting cryptoculture is being considered in the United Arab Emirates. In Dubai in 2024 it is planned to present the project of a 40-storey hotel tower «Bitcoin Tower», built in the form of Bitcoin. The building will combine traditional hospitality and crypto services. Bitcoin Tower will become a symbol of the digital era of the XXI century. The symbol of the era should not only surprise with advanced technologies and luxurious accommodation, but also with innovative quality of service, offering hotel guests as a reward NFT (tokens) – as exclusive privileges proving authenticity and ownership in the digital sphere. According to the developers «this will be the first hotel to give you back the money you paid plus interest» [21].

This project aims not only to educate the general public about cryptoculture, but also to encourage those who use it. The project will involve artists, architects, musicians, and designers whose works will decorate the hotel, and guests will be able to purchase them if they wish.

Conclusion. Thus, cryptoculture as a paradigm of improving the digital environment of society on the basis of decentralised blockchain technologies, offers new rules of the game in protecting privacy, forms values, behavioural attitudes, levels of communication.

The concepts of "cryptoculture" and "blockchain technologies" have different approaches to definition and are mainly associated with financial activities, online trading, quick profits and high risks. The cryptocurrency market is comparable to a gold rush, it is still actively developing. Against this background, society is more focused on the financial component. Experts expect that by 2030 the cumulative growth rate of the global market (CAGR) will increase by 12.5%. But at the same time, about 70% of people today do not invest in cryptocurrency due to the lack of knowledge on this topic [22].

Blockchain technology as a «living breathing spreadsheet, operating in real time, verifying itself» [23], has inbuilt security, allows experimentation in art, gaming, exhibition, library and other fields. Cryptoculture is an amalgamation of a variety of digital ideas of different origins, geographical location, political, philosophical and educational directions, involving the development and realisation of artistic and creative cultural products, ensuring their uniqueness in the processes of replication. This topic is at the initial stage of development. The review of publications on the topic demonstrates the interest of the scientific community, suggests the intensity of research with serious analyses, expertise and timeliness.

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