

Disadvantages and Advantages of Blockchain

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ABSTRACT

The article outlines a number of disadvantages, advantages and advantages of the blockchain today. Also, the types of blockchain are given and how blockchain allows you to organize trade without intermediaries, which can later introduce many services into everyday life and change the way the banking sector works.

KEYWORDS: *blockchain, bitcoin, cryptocurrency, peer-to-peer, proof-of-work, disadvantages, advantages*

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In recent years, representatives of government agencies, business, the financial sector, and the banking community have shown great interest in a relatively new technology - blockchain. Initially, this technology was mentioned exclusively in connection with such a phenomenon as cryptocurrencies, the first of which, Bitcoin, appeared in 2009.

The blockchain is usually managed over a peer-to-peer network. Once written, the data in any block cannot be changed without completely changing all subsequent blocks, which requires the consent of the majority of the network participants.

M. Swan in his book "Blockchain: A New Economy Outline" identifies three types of blockchain [1]:

- A. Blockchain 1.0 is a cryptocurrency. Examples include Bitcoin, Ethereum, Litecoin, etc.
- B. Blockchain 2.0 is smart contracts. This is a wide class of financial applications that work with stocks, bonds, futures, mortgages and many other financial assets. It is this type of Blockchain that will be considered in our work.
- C. Blockchain 3.0 - all other applications based on this technology and going beyond the financial sphere.

From an economic point of view, the blockchain is endowed with certain disadvantages.

1. High volatility of the most common blockchain with the Proof-of-Work consensus algorithm due to the complexity of the transaction, which makes it an expensive technology.
2. When transferring electronic values, the blockchain allows you to significantly save on payment for the services of intermediaries and guarantors. However, the very creation of the system and its implementation in any area is very costly.
3. Scalability is another limitation due to the size of the public blockchain. If the database is overloaded, the speed of transfers is significantly reduced.
4. Differentiation of the blockchain. There are currently over 400 digital coins in existence, many of which have their own versions of the blockchain. It is not yet clear which of them will be able to survive and develop in the future, which of them will be preferred by developers and large companies, and which will disappear into oblivion.

Among the technical shortcomings, we highlight the following:

- impacts at the network level: hacker attack DDoS (Distributed

Denial of Service) or distributed attack such as "denial of service", "Sibyl attack", Eclipse attack or "information eclipse attack";

- impacts at the user level: botnets that spread through droppers are special anonymous malicious programs that disguise themselves as pirated versions of licensed programs. From a legal point of view, user-level vulnerability is associated with de-anonymization of market participants;

- impact on the integrity of the blockchain: "51% Attack", Double spending, or double spending, which implies twice successful use of the same funds, Selfish mining, or selfish mining - a Bitcoin mining strategy when network users unite by special agreement in groups in order to increase their own income. This impact can centralize the network and kill the original concept of a decentralized system;

- attacks that do not depend on the blockchain and are applicable to all network technologies: phishing. According to Group-IB, in 2017, more than 50% of funds from blockchain projects were stolen using phishing; in April 2018, hackers stole \$ 150 million. from the addresses of the My Ether Wallet cryptocurrency wallet, deface means hacking the sites of blockchain projects and changing the address to collect funds for the links of their wallets. In July 2017, the Israeli startup CoinDash lost about 40,000 Ethereum coins (more than \$ 7 million at the exchange rate for the period of the hack).

Experts believe that the introduction of this technology is not inferior to the opening of the Internet in terms of its possible effect. Blockchain will allow organizing trade without intermediaries, introducing many services into everyday life, and changing the way the banking sector works. Blockchain technology at least increases the efficiency of processes already in progress[2].

It should also be noted that there are a number of advantages and benefits of blockchain that are attractive to government and business structures.

First, safety. Blockchain is a secured digital ledger, a peer-to-peer network that stores transactions for the transfer of ownership of objects, rather than databases of properties (for example, customer accounts with funds placed on them). The functions of checking and

storing transactions are distributed among many nodes without the participation of regulators. Transactions are combined into chains, the order of which is fixed in block chains (hence the name - blockchain). Each block contains information about the hash of the previous one, which protects the entire chain from changes. The large number of nodes and the cryptographic algorithm used make the substitution of information almost impossible. This feature eliminates such infrastructure shortcomings as centralization, the obligatory presence of trusting relationships between all market players, and the participation of regulators for the exchange of information[3].

Secondly, the implementation of a blockchain-based system. The absence saves money for all intermediary parties. This is confirmed by reports from financial institutions held by companies, McLagan and Wirex[4]:

- by optimizing data quality, increasing the level of transparency and internal regulation, it was possible to reduce the cost of financial reporting by 70%;
- simplification of financial transactions can reduce costs by 30-50%;
- Simplification of shared access to customer data leads to a halving of costs for centralized activities; - the result of a decrease in the need for reconciliation of transactions and search for errors, partial automation of the activities of specialists in mutual settlements and clearing is a 50% reduction in the cost of business operations.

Thirdly, the blockchain allows you to replace numerous data reconciliation models and thus significantly speed up any processes. A good example is the execution of an international letter of credit between S7 Airlines and Alfa Bank in the form of a transaction through the Ethereum blockchain in 23 seconds instead of the usual 14 days.

Fourthly, an important advantage of the blockchain is its versatility. With its help, you can create public databases: land registers, open resources for registering property rights, including intellectual property rights, energy management, voting via the Internet. More and more smart contracts are spreading - transactions that are automatically executed when a pre-programmed set of conditions occurs.

Blockchain, like any technology, is not perfect; it has some obvious drawbacks, especially in terms of mass adoption of the technology.

Thus, the advantages and disadvantages cancel each other out and the choice depends on the investor

himself and his preferences. However, many aspiring crypto enthusiasts overlook one factor that can be decisive in their choice - the value of the crypto currency.

References:

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