

Blockchain Technology - the Invisible Hand of Self-Organizing Systems

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Abstract. The need to use blockchain as a modern concept is one of the important factors on the path of digital transformation of the state. Decentralization of blockchain technologies can accelerate the digital transformation of the state, as the ability to conduct authorized operations without the need for a central authority facilitates the delivery of citizen-centered digital public services.

A blockchain is a self-organizing system where targeted and accidentally inconsistent transactions are managed by the system. In case of non-compliance with the rules of operation, the transactions are dropped from the chain of blocks.

Key words: Blockchain technology. Self-organizing system. Digital transformation.

Main Text:

A blockchain is a chain of blocks created to record transaction records under a set of pre-defined rules, where the movement of secure data, money, goods, and other data takes place. Over time, the use of cryptocurrency, bitcoin, has made it possible to insert and validate blocks in a chain independently of a third party.

The blockchain serves:

- Using protected cryptographic algorithms, it collects data and sorts them into special blocks, where the chains are connected to each other - a self-organizing system;
- Based on mathematically validated rules, the transaction is authentic without the intervention of a central governing body.

It is also noteworthy that blockchain technology, so-called the third generation of the Internet, under its influence has led to improved security settings and made it quite difficult for third parties to intervene.

However, we should not forget that the 21st century is the time of the fourth industrial revolution. Technological shifts are developing at lightning speed.

Currently, blockchain technology is considered to be a practically new step in the field of technology that can be used to solve virtually every problem related to information technology.

Georgia is one of the countries that is actively involved in the use of blockchain technology in both private and public spaces.

The pros and cons of blockchain should definitely be considered, as further threats to even the most secure system can be avoided.

The Blockchain is a decentralized system with multifunctionality, not all uses have been found for the blockchain, however, it works well as a digital currency, database, or unbreakable platform for programming.

Due to the fact that blockchain is an independent system field, where it is possible to perform many actions without human intervention, it puts banking / financial services in a very difficult situation.

The greatest value of blockchain is that it is possible to share the database directly without the help of a central administrator.

As for blockchain security, a lot of effort is required as more than half of the simultaneously connected participants have to be able to count all the hashes at once and cheat the other half.

The foresaid is quite difficult to implement and that is why the blockchain is considered to be one of the most protected fields, as it does not have any centralized protection mechanisms, but is secured by a complex mathematical chain.

Blockchain technology, as I mentioned above, has quite a lot of potential to facilitate the digital development of public services and its use to reduce bureaucracy in public processes.

A blockchain is defined as a constantly updatable, digital, decentralized, and cryptographically encrypted database. Blockchain is not only a new technology but also a new model of thinking that is expected to transform the current model of functioning of society in multiple sectors soon.

Blockchain is the means by which we can complete a transaction without intermediaries. Consequently, when the blockchain will be fully operational in the public sector, several areas of state regulation will be eliminated and there will no longer be a kind of mediator in the provision of many services.

The risk factors that require the introduction of innovative technology and the integration of new standards and concepts in its legal system are also noteworthy.

However, in the future, blockchain will have a transformative impact on the community and public services, as it is a technology with destructive potential, without the need to digitize, protect and track transactions, without the need for a trusted third party.

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