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BLOCKCHAIN TECHNOLOGY

Technologies are constantly evolving. They are becoming an inseparable part of our everyday life. The blockchain technology is probably the best invention since the Internet itself.

So, the **aim** of our article is to reveal blockchain as a perspective technology of IT sphere and features of its use in the modern world and also its benefits and challenges.

Blockchain technology is not new. Rather, it is a combination of proven technologies applied in a new way. It includes three technologies (the Internet, private key cryptography and a protocol governing incentivization).

The first blockchain was conceptualized by a person (or group of people) known as Satoshi Nakamoto in 2008. It was implemented the following year by Nakamoto as a core component of the cryptocurrency bitcoin, where it serves as the public ledger for all transactions in the network [1].

The result is a system for digital interactions that does not need a trusted third party. The work of securing digital relationships is implicit: supplied by the elegant, simple, yet robust network architecture of blockchain technology itself [2].

The original blockchain is the decentralized ledger behind the digital currency bitcoin. The ledger consists of linked batches of transactions known as blocks (hence the term blockchain), and an identical copy is stored on each of the roughly 200,000 computers that make up the bitcoin network [3]. Each change to the ledger is cryptographically signed to prove that the person transferring virtual coins is the actual owner of those coins. But no one can spend their coins twice, because once a transaction is recorded in the ledger, every node in the network will know about it.

The idea is to both keep track of how each unit of the virtual currency is spent and prevent unauthorized changes to the ledger. The upshot: No bitcoin user has to trust anyone else, because no one can cheat the system.

It allows value exchange without the need for trust or for a central authority. With a blockchain many people can write entries into a record of

information and a community of users can control how the record of information is changed and updated [2].

Using the blockchain technology has quite remarkable **benefits**:

— You have complete control of the value you own, there is no third party that holds your value or that can limit your access to it.

— Value can be transferred in few minutes and the transaction can be considered secure in a few hours, not days or weeks.

— Since anyone at any time can verify every transaction made on the blockchain, full transparency is granted.

However, there are a few **challenges** that need to be addressed:

— Transactions can be sent and received anonymously. On the one side, this preserves the users' privacy but on the other side, this allows non-legal activity in the network as institutions cannot track users' identity.

— The technology is still in its infancy. New tools are developed every day to improve the blockchain security stability.

So, as we can conclude, blockchain technology represents an innovation in information registration and distribution that eliminates the need for a trusted party to facilitate digital relationships and has a great potential to take the leading place in human relations in digital age.

References:

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