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THE ROOTS OF CRYPTOCURRENCIES

Nowadays, because of the high speed of globalization the issue of «Global currency» [1], is very relevant. Currently, modern society is witnessing «The Forth Industrial Revolution» [2], which causes a transformation in different fields, including world economy. The Internet and new technologies have started the era of digital economy. Digital economy is a series of economic, social and cultural activities that are performed online and are related to the use of information and communication technology [3]. It includes activities like banking, buying and selling, and accessing education or entertainment using the Internet and connected devices [4]. Digitalization of economy changed its framework establishing boundless space with new rules of game for trading. Back into 1999 Milton Friedman in his interview mentioned that «…the Internet is going to be one of the major forces for reducing the role of government. The one thing that's missing, but that will soon be developed, is a reliable e-cash, a method whereby on the Internet you can transfer funds from A to B without A knowing B or B knowing A, the way I can take a USD 20 bill and hand it over to you and then there is no record of where it came from» [5]. He was right, digested assets and innovative financial channels, instruments and systems are creating new paradigms for financial transactions and forging alternative conduits of capital [6]. So, as far as existing bank system could not satisfy escalating demand of digital trade market, the necessity of creation of the appropriate tool for high-speed transactions via the Internet regardless any jurisdictions was obvious. This role of such means of payment was occupied by virtual currency.

According to the report of the Financial Action Task Force virtual currency is a digital representation of value that can be digitally traded and functions as (1) a medium of exchange; and/or (2) a unit of account; and/or (3) a store of value, but does not have legal tender status (i.e., when tendered to a creditor, is a valid and legal offer of payment) in any jurisdiction. It is not issued nor guaranteed by any jurisdiction, and fulfils the above functions only by agreement within the community of users of the virtual currency [7]. Virtual currencies represent both the emergence of a new form of currency and a new payment technology to purchase goods and services [8]. Its value is founded on the agreement between the users of the system operating on the Internet and with confidence [9]. Unlike gold or silver virtual currencies have no non-monetary use or value – they are just bits of data [5]. One of the most modern form of virtual currency is cryptocurrency.

Cryptocurrency refers to a math-based, decentralised convertible virtual currency that is protected by cryptography. — i.e., it incorporates principles of cryptography to implement a distributed, decentralized, secure information economy [7]. Currently, hundreds of cryptocurrencies exist in the online market for trade purposes. The common element of these different cryptocurrency systems is the public ledger (‘blockchain’) that is shared between network participants and the use of native tokens as a way to incentivise participants for running the network in the absence of a central authority [6]. Unlike the fiat currency where the federal banks or governments are responsible for the generation and printing of money, the cryptocurrency is generated by a process called mining. Cryptocurrencies use complex hashing and time stamping methodologies to uniquely identify each coin within that currency [10]. The key innovation is the implementation of cryptographic identification techniques into a “distributed ledger,” i.e., a digital record that allows the tracking and validation of all payments to be made. This allows cryptocurrencies to be used in a decentralized payment system while avoiding the possibility of “double spending” [8]. Moreover, cryptocurrencies provide certain anonymity of a user - «pseudonymous». It is reached by following features: it is not attached to the user's personal information; for transactions via blockchain networking, users do not have to submit any personal information, which means that transactions do not contain identifying information about their participants. So, «the public can see that someone is sending an amount to someone else, but without information linking the transaction to anyone» [11].

It should be noticed, that classical money performs several basic functions: a measure of value, a means of payment, a medium of circulation and a means of accumulation. However, what is now understood by cryptocurrency, in fact is a software-digital complex consisting of a payment system, in which transactions can be made, cryptocurrency tokens - exchange units of value in the blockchain system and at the same time, data transfer protocols and transaction verification codes, and also the public database of all transactions that have ever been committed in this system. The database is maintained by all participants and is updated on all computers after each transaction.

So, cryptocurrency is not money in a classical understanding, but it has a market value determined by the demand and supply of account units and an internal cost equivalent to the price of services or goods obtained in this exchange chain. Thus, two of the four main functions of money cryptocurrency fulfils: means of circulation and payment, since they act as an intermediary in the circulation of goods and services and as a registrar of the fact of payment.

As an example, Bitcoin can be taken as the most known and costly, based on blockchain cryptocurrency. Its occurrence coincided with the world economic crises in 2008, when the world observed insolvency of the world banking system. Despite sustainable position, which dollar occupied at that time, its trustability was reduced in consequence of the economic crisis. Dollar’s fluctuation affected most of fiat currencies, which precipitated instability of the world economy. Moreover, it became more obvious that global monetary and bank system was totally dependent and guided by governmental institutions, which were not able to prevent the formation and repercussion of the economic crisis. The centralized global system of financial management failed. As a result, people lost their credence in the reliability of the banking system. Currently, the value of currency is based on the population's trust. Apparently, if citizens do not trust a government, they will not trust its currency. So, eventually the central challenge appears: how to design a system that most effectively facilitates the exchange of goods and services and generates prosperity while preventing the institutions, that manage that system, from abusing the trust that comes with that role [12].

Most likely, the emergence of Bitcoin was a response to the existing social demand for a currency independent from the influence of banking institutions, as far as they lost their reliability. While the world economy was suffering from the effect of economic crisis, Satoshi Nakamoto (still unknown person or group of people) released an article «Bitcoin: A Peer-to-Peer Electronic Cash System». He had proposed anonymous payment network, served by its users without central authorities and agents, which can be used as a system for electronic transactions without relying on trust [12], which year after began to be exploited as a currency via the Internet. Nowadays it is an information technology breakthrough that facilitates both a secure, decentralized payment system and a tool for the storage, verification and auditing of information [13].

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