

47. THE IMPACT OF BLOCKCHAIN AND AI ON THE FUTURE DEVELOPMENT OF DIGITAL ECONOMY

Shpoka V.S., Philipovich K.M.

Belarusian State University, Minsk, Republic of Belarus

Vidisheva S.K. – Senior Lecturer,

Sitnikova T.V. – Senior Lecturer

The information about the impact of blockchain and Artificial Intelligence on the future development of digital economy is presented in this paper. As Artificial Intelligence and blockchain are considered to be the most transformative and disruptive technologies of our time, they are worth considering for clarifying their benefits and disadvantages to exclude possible negative impacts and risks in different branches of industries.

Artificial Intelligence (AI) and blockchain technologies are considered to revolutionize industries further and create new opportunities for businesses improving the quality of individuals' lives. Being informed and knowledgeable about their capabilities and applications is essential for staying competitive in today's fast-paced world. AI and blockchain are effective as separate technologies and work well together, enhancing each other's power. AI introduces innovations through advanced data analysis, automation of routine tasks leaving the majority of time for creative work. Besides, it is a main engine of robotics and the Internet of Things. Blockchain provides decentralized and secure systems for transactions, contracts, and data management. The interconnection of these two cutting-edge technologies is already implemented in finance, healthcare, supply chain management and other fields. Certainly, they play a prominent role in modern economic relationships.

Since the world has been experiencing massive digital transformation and it is permanently growing, humans came up with the special term that refers to all economic activities carried out as the result of online connection among people. Initially called "Internet economy" or "Web economy", currently "Digital Economy" has been set. Production and distribution of different goods and services, trade transformation and evolution are becoming easily accessible due to the digital economy which is strongly connected with the fourth industrial revolution integrating the physical world and cyberworld.

Blockchain is a new kind of technology to organize relations between users on the net. This system is a network that saves all the transactions between users without being centralized but contained in special structures called blocks. Every new block contains the data about the previous one. These blocks are linked with types of keys: private and public. Due to this a network can be described as highly secured, reliable and decentralized because it is nearly impossible for the third parties to intrude into transactions. Due to that, common users have no way to change or somehow interfere with verified transactions because the information about them is stored everywhere. It is important to note here that blockchain is an ideal choice for the storage of the systems with immutable data.

According to the latest investigations the integration of a new technology is a relatively long process. A lot of companies which want to be compatible with blockchain technology still do not know how to deal with it as

there are still not enough highly-qualified specialists who are able to work with blockchain as well as there is no certainty that today's specialists could provide their employers with all benefits of blockchain. Besides according to today's situation there is no single standard of the technology. Despite the fact that the core of all projects is based on one idea it is still hard to combine them. It takes lots of money and time to create "bridges" between projects. However, the researches of this matter tend to have a great success what seems promising in the nearest future.

Having analysed the market of blockchain applications in various industries, the program for monitoring drugs turnover in hospitals, which operates on the basis of the Microsoft Azure cloud platform, launched in Russia, Novgorod region, could be a good example. Each patient had access to an electronic system that stored data on prescribed medications. During the pilot project, patients were able to get all the information about the medicines issued at the medical post by simply entering their data into the tablet provided to them.

Also, the National Settlement Depository of Russia involved blockchain technologies into their voting system: every keeper of securities can check the correctness of the counting and check whether their own opinion is correctly taken into account, while maintaining the secrecy of the vote. In addition, blockchain has cornered some part of financial systems. Having introduced this technology in process the financial sector has got lots of benefits: from reducing fees almost to zero to cross-border payments with no need of the third parties like banks or states.

As for AI it should be stated that its structure simulates processes in human's brains. It is a well-known fact that AI was made to do tasks that usually require human intelligence. This digital brain processes a huge amount of data to recognize some patterns there. After noticing them, AI makes a new connection with its

digital neurons. It is important to add that there are many layers of artificial neurons. The right links between them determine the future success of AI.

Externally AI and blockchain can seem to be different fields, but essentially they are. Meanwhile, a closer look reveals that AI has the potential to revolutionize numerous market segments. AI's capacity for rapid execution and access to extensive data sets are pivotal in transforming the cryptocurrency market and will fundamentally alter its operational dynamics. In this case AI has every reason to be an asset to blockchain applications, from straightforward ones like landing pages for cryptocurrency businesses to more intricate ones like facilitating cheaper and faster transactions in decentralized protocols, since transactions are a blockchain forte. By analyzing potential vulnerabilities in more details, the technology will bolster security and penetrate all major tiers of the cryptocurrency market.

A prime example of blockchain and AI collaboration is the SingularityNET project, which is a decentralized protocol-based full-stack AI system. They let businesses buy and sell AI algorithms at scale through an automated procedure, which promotes the development of an open and decentralized AI market.

In the cryptocurrency market AI substantially improves trading, data processing and product creation. Neural networks trained on extensive information are extremely valuable in analyzing patterns, growth, charts, and past events. The crucial part is that AI is able to learn and adapt to market developments and changes.

Despite people's fear of losing their jobs due to AI introduction, new jobs seem to be emerged when it comes to intersection of AI and blockchain. The integration of AI and blockchain technologies may lead to the creation of new job categories like neural network calibrators, vulnerability analysts in neural networks, and specialists who can distinguish between a human and a neural network during communication, much as the Internet market produced over 1200 new professions. Artificial Intelligence and blockchain interconnection completely transforms the structure of modern digital platforms. When combined with AI's cognitive data processing powers and blockchain immutability and transparency, inconceivable technologies could emerge.

It should be noted that real examples where AI and blockchain cooperation is already implemented exist at the present, it is not just based on theory. Experts predict that in the nearest 50 years 186 new jobs will appear on the job market. They will definitely be connected with the IT-sphere but they could fully provide these fired people with work in case they develop requisite skills. There are several groups of scientists working to combine our brain with AI. That usually means the system that can be controlled just with our thoughts. For instance, DARPA and the NESD projects by the US military, Neuralink by Elon Musk, Kernel by Bryan Johnson, Neurogress by Honcharenko and Mark Zuckerberg with its so far secret creation. This technology is now known as neurointerface and it will definitely enhance our intelligence.

Nowadays automatization plays a great role in economic development. Everything becomes possible with the help of deep-trained intelligence that can analyse all the work done before in this sphere. And AI and blockchain technologies can be adapted by users for gaining the best results.

The future development of blockchain lies very close to cryptocurrencies. Their systems and algorithms have too many cons to be their evolution latest version. There are already some countries where bitcoin has become an official payment instrument. Bitcoin is the largest cryptocurrency ever created and traded using a decentralized ledger known as the blockchain. Altogether, bitcoin is a network in which every computing node is responsible to service the others and allows shared access to the data, known peer to peer (P2P) network, and provides an adaption of electronic-cash that supports e-payments [1, p. 13]. It is predicted, when the biggest economies of the world become interested in cryptocurrencies and integrate their financial systems, this money will be an unstoppable trend. Similar to numerous other sectors, task automation is anticipated to become ubiquitous within the cryptocurrency realm. Whether it involves activities like intelligent contract audits, risk assessment, or entirely novel functions remains uncertain. However, the convergence of these two dynamic technological domains, AI and blockchain, has investors, developers, and enthusiasts who are anticipating the next breakthrough, underscoring their profound impact akin to that of the Internet. Thereafter, these technologies will enhance each other strongest sides and represent a powerful combination of progress engines.

Now the state of being is in so-called irrational phase of technology development: the idea exists, but there is no infrastructure for its implementation yet. But as soon as constrictions are eliminated and the problems of this approach are solved, blockchain projects will become more in demand in a variety of fields as lots of specialists think.

That is a big question whether these technologies will be demanded. Having analysed lots of resources, it should be claimed that they will definitely occupy niches where blockchain and/or AI will be key features and main instruments. It is absolutely evident that learning something new is a lifeline of modern reality. There is no way to stay afloat without developing any soft skills, and the reason is the extremely high pace of "digital economy fluidity".

References:

1. Sandeep K. P. *Blockchain Technology: Applications and Challenges* / K.P. Sandeep, A.K. Jena, S.K. Swain, S.C. Satapathy. Springer Nature Switzerland, 2021. – 300 p.