

# Blockchain in Public Administration

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## Блокчейн у Державному Управлінні

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**Abstract**—The article describes the possibilities of using blockchain technology in public administration. Cautions against possible negative consequences of its use, the authors pay attention to the advantages of the technology in question.

**Keywords**—*blockchain; bureaucracy; public administration.*

**Анотація**—The article describes the possibilities of using blockchain technology in public administration. Cautions against possible negative consequences of its use, the authors pay attention to the advantages of the technology in question.

**Ключові слова**—*блокчейн; public administration; державне управління.*

### I. BLOCKCHAIN

Blockchain is a database in which you can store records about objects and events in real life. At the same time, the blockchain is significantly different from other similar technologies due to its openness and reliability. Entries in the blockchain is almost impossible to fake, replace or delete. At the same time, everything recorded in the blockchain is easy to check and make sure that the entries are correct.

Currently, this technology is used most often in cryptocurrencies, such as the well-known Bitcoin. Developers usually try to create their own Bitcoin counterpart, in which they try to take into account the mistakes of the founder and introduce something of their own. That is why, studying the technology of a distributed database, you can see a lot of cryptocurrency technologies similar to each other. [1]

The concept of blockchain originated a long time ago and is now used mainly in combination with a cryptocurrency bitcoin. The essence of technology in the distributed storage of information relating to any vital issues. Simply put, this is the database, the registry, which allows us to constantly record the event.

Blockchain is needed wherever there is a question of potential mistrust between participants. For example, when

buying and selling, there are always at least two questions: whether the seller will receive the money and whether the buyer will receive the service / product. Similarly, when obtaining important documents, it is also necessary to make sure that the documents are not forged and relevant. In addition, in many situations it is necessary to find out the reliable history of a product, service, company or person. For these tasks, the blockchain will be very useful and appropriate. One of the applications of blockchain technology is "smart contracts" that are used in various sectors of the economy, in particular insurance, loans and notarial services.

### II. PUBLIC ADMINISTRATION

The public sector is a complex and inert mechanism, while remaining a centralized system. From the development of this system depends the effectiveness of public administration as such, the uniform coverage of public services by the needs of the population and entrepreneurs (for example, company registration, marriage, receipt of certificates and extracts). Sometimes on the complexities in the interaction of a person and the state apparatus, its non-transparency, whole industries of intermediaries grow up (help in registering LLC, filling in certificates of traffic police, etc.). The more intermediaries - the more expensive and more difficult the service. The organizational structures of the state apparatus are often fragmented and almost always scattered, which makes it difficult to exchange information between departments and departments. Often, intermediaries in the chain of receiving state services are invisible to the recipient (agencies communicate with each other in the "back-end").

Many countries are aware of the demands of a new generation, people who are accustomed to fast and convenient products, conduct research and solve the aforementioned problems - are actively reforming the delivery system of public services. Some mobilize the separated IT departments into unified systems - the so-called "agencies"; others start



using alternative deep data and "dark analytics" for a quick analysis of correspondence and requests from the public; others develop new architectures of interaction between state units; Well, the last, the most advanced, of course, apply the technology of the distributed registry (blockchain), on which we will stop [2].

The speed with which various state departments of the countries of the world today are beginning to use blockchain technologies is not proportional to the real development and the level of practical implementation of this technology - which is quite logical and understandable. The public administration system must be stable, it is an extremely static, slow-moving mechanism, and any implementation must prove its effectiveness. In addition, not all blockchain-based solutions are able to scale and correspond to the load.

### III. HEALTH CARE.

Despite the fact that electronic medical cards, online access to patient data and their modification can be realized without the use of blockchain systems, the problem of reliability and reliability of data remains unresolved. With the use of blockchain-technology, unauthorized modification / access / use of citizens data becomes impossible, since any information about such actions is recorded in the system [3].

Blockchain is ideal for creating a single patient registry. In fact, there will be a single electronic database with a high level of security, stable operation and access from anywhere. Having such an infrastructure, the patient does not have to worry about the synchronization and security of personal data.

### IV. KEEPING THE LAND CADASTER

It is interesting that this direction of the implementation of blockchain is popular both in developed and developing countries. In developing countries, the ownership of land is still poorly documented, as a result of which owners can not sell it, take loans on bail and conduct other operations with land. People suffer from abuse of employees of relevant departments. Developed countries improve operational processes, decreasing the time of the transaction, which often takes several months, reduce the risk of fraud and errors in documents and transactions (transfer of rights, for example), making the process and system more reliable. This leads to an increase in the attractiveness of the country for doing business and investments [4].

In addition to legal certainty, the technology also guarantees the physical preservation of data - even if the server is destroyed, it is stored on the computers participating in the chain.

But, in addition to a few abstract concepts of trust and reputation, developers rely on and quite tangible practical effects from the implementation of the blockade. True, they are all in perspective.

### V. COMPANY REGISTRATION, VOTING

These areas are most closely connected with the exchange of information between government agencies, and thus, existing projects are aimed at reducing the costs associated with the exchange of information and unification in a single information storage system.

Elections using blockchain are similar to the usual deal in the crypto currency. Citizens receive special colored coins from the election commission, which are then transferred to one of the special accounts associated with one or another candidate. To determine the winner, it is enough to check the counts after the election is over. Since a public blockchain can be analyzed by anyone, each user can track the fate of his voice. And in order for the members of the electoral committee not to deanonymize the voters, scientists suggest distributing colored coins with the help of technology of blind signatures.

### VI. REFORMS IN EDUCATION

If educational institutions register registered education diplomas or certificates of training in a detachment, it is not difficult for a potential employer to make sure that you did study at a given institution or course, and did not acquire a "lime" diploma.

Certificates and diplomas confirm the presence of certain skills and knowledge of the candidate. Storing data in one system allows them to be distributed among companies, creating a system of dynamic personnel search by a set of specialist skills for specific enterprises. In turn, this will create demand for certain skills, which, in turn, sets the trend for learning certain courses in real time. The candidate will see what exactly is required to study to obtain the desired position. Educational organizations, adjusting to the new trends of the labor market, will offer "dynamic blocks of courses," where the student chooses only what he needs for further professional growth.

### VII. CONCLUSION

According to a survey of participants of one of the last World Economic Forum, by 2023 the technology of blockchain will be actively used in the sphere of public services by the leading world powers. Moreover, about 10% of world GDP (according to the OECD forecasts) will be created with the direct use of blockchain technology. The main benefits from the introduction of technology are expected in the reduction of operating expenses, reduction of settlement time, risk reduction, an increase in the possibility of receiving additional income. This technology will allow each of us, as a time machine, to jerk, and in another way we do not know how to move from an ineffective bureaucratic state system of cohabitation to a home state, to a modern, easy, convenient, trust system "the state is me" [5].

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