BLOCKCHAIN INDUSTRY AS A TOOL FOR MODERNIZING PUBLIC SERVICES

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Transformation the entrepreneurial idea into economic activity made market environment possible with further transfer of innovations to the B2B area, creation of new business structures, that enable business and the state act effectively for their own existence in a present competitive environment. Study conducted by the University of Texas found that 85% of business structures are entirely dependent on accounting and analytical resources generated in real-time by multidimensional management systems; 43% of companies that do not have a plan for uninterrupted functioning, in the event of a crisis situation are not able to resume their own activities. At the same time, the business entities that formed the plan of preventive measures in the field of information security, controlling, logistics, energy saving in the unforeseen circumstances, were significantly smaller, 2.5 times the loss of income. Mentioned actualization of the issue connected with introduction of international measures of business continuity and implementation of state programs of sustainable development by domestic enterprises.

In this context the Ministry of Economic Development and Trade of Ukraine, with the support of the UN, launched national consultations on adaptation and localization of the development agenda until 2030 and 17 Sustainable Development Goals. According to the regulations, the effectiveness of management is based on the well-known doctrine of sustainable development, that proceeds from the main assumption – managerial decisions and their consequences must be based on the economic, social and environmental responsibility of the business. This approach defines the general vector of the ontogenesis of the business unit, that is based on four common scientific research areas: industrial ecology and economics, circular business models and product designs, environmentally friendly technologies and resource efficiency. It requires changes in theoretical and methodological approaches to accounting as a key management function. In the context of the orientation of the management system to the concept of sustainable development, the process of formation of accounting and analytical support goes to a qualitatively new level, which allows managing business processes that are responsible for changes in the structure of capital; promptly restore activity after the crisis; minimize financial losses; to equally meet the requirements of clients, shareholders, managers; to maintain a business reputation The analysis of modern scientific sources provided proves that the study of the accounting formation and analytical support for the sustainable development of business entities has traditionally been conducted in two areas - economic (managerial) and accounting. In the article we focus on the economic (managerial) aspect. The international analytical agency Gartner published its forecast, in which 10 trends in the development of the international economy and finance are presented. All of them, as noted by analysts of the agency, are united by a common theme – this is already taking place a digital revolution and its scope will grow over time. Among the "dozens of

Gartner" blockchain technologies for the first time were designated as a new phenomenon that could change the global economy and finances. Gartner analysts predict that by the turnover of the blockchain-based business will reach $ 10 billion. At the same time, recognized that the technologists of the distributed registry are still far from maturity, but they express confidence that they have great potential in terms of cost savings in the area of financial services. It is argued that the blockchain can be used in any industry where you need to verify transactions [1]. Blockchain 2.0 is the second important step in the development of the blockchain industry, that in the fall of 2014 was still in the active formation phase. Since the Blockchain 2.0 space is still being developed, there are many different categories of it, descriptions and conceptualizations. The basic idea is that with the decentralized log of transaction records, you can register, confirm and transfer all types of contracts and property. Blockchain allows you to redefine all types of financial transactions, including operations with securities, stocks and company shares, crowdfunding tools, debt instruments, mutual funds, annuities, pension funds and various kinds of derivative financial instruments (futures, options, swaps, etc.).Publicly available documents can also be moved to a distributed journal of records: certificates of title to land and real estate, certificates of vehicle registration, business licenses, marriage certificates, and death certificates. With the help of the blockchain, you can confirm digital IDs, for example, driver's licenses, ID cards, passports and voter registration certificates. You can also store private documents, for example, IOUs, loans, contracts, betting, signatures, wills, powers of attorney and escrow. By means of the blockchain, verification of insurance certificates, certificates of ownership and notarization of documents can be performed.

Intangible assets, such as patents, trademarks, copyrights, reservations and domain names, can also be protected and transferred through a distributed journal of records. For example, to protect an invention, instead of registering a trademark or patent, it is possible to encode it in a distributed journal of records, with a date and time stamp. Therefore, it will be possible to confirm the existence of the invention at a certain point in time. Blockchain technology can be used to maintain registers of any kind, inventory and accounting of transactions with assets in the financial sector, various sectors of the economy and in cash payments; in operations with real (physical world objects) and intangible (votes, ideas, reputation, intentions, medical data and information) assets. Such use of blockchain technology creates opportunities for the development of various classes of applications in all business segments related to money, markets and financial transactions. The asset presented on the blockchain becomes a smart asset that can be traded through smart contracts. The main idea of smart assets is making deals with any property in blockchain-based models. Assets can be either material (home, car, bicycle, computer) or virtual, such as stocks, orders, or copyright (books, music, illustrations, and digital art images) [2]. A smart asset is an asset whose ownership is regulated by means of a blockchain using contracts in accordance with applicable law. For example, an appropriately configured smart contract can automatically transfer vehicle ownership from a financial company to an individual after all loan payments are made, which is automatically confirmed by other

smart contracts on the blockchain.

Similarly, you can, for example, change mortgage interest rates in a smart contract based on the blockchain, by checking the website or data element previously specified in the contract to obtain the interest rate on certain dates in the future. The idea of a smart asset is to manage the property and access to the asset, registering it as a digital asset in the blockchain and having access to the secret key. In some cases, real assets can literally be managed using the blockchain. The smartphone can be unlocked after confirming the user's digital ID encoded in the blockchain. Blockchain technology allows authentication and access verification in more subtle, flexible, and real-time configurable ways than are used now. This is achieved by the elegant integration of existing hardware solutions and digital software Internet technologies.

Dealing with smart assets using the blockchain is a completely new idea, to which users are not yet accustomed. Encoded property rights are implemented using code. The code is launched automatically by the technical infrastructure - this means that it is programmed to work depending on the code that is put in, and cannot deviate from it. If the code provides for the transfer of ownership, it cannot fail to occur. Thus, smart blockchain-based assets imply the possibility of implementing distributed decentralized asset management systems, as well as assets that are implemented using code. This can lead to a significant transformation of the legislation in the field of property ownership and to the simplification of any operations with property.

The principle of decentralization of the transaction log, underlying the blockchain technology, is a major factor in the context of smart assets and smart contracts. Giving the property of certain smart properties makes it possible to conduct operations with such objects without requiring a high level of trust. This reduces the cost of insurance against fraud and misconduct, but more importantly, it makes it possible to operate with much more significant amounts than previously accepted, since the parties do not need to trust each other. For example, you can lend money through the Internet, using the borrower's smart assets as collateral, making loans more competitive and profitable. In addition, there is a possibility that due to smart contracts executed in decentralized networks, the number of litigations can be significantly reduced. As is known, most of the litigations are related to contract disputes – 44% in the US and 57% in the UK. This can be avoided due to higher accuracy of drawing up agreements and introduction of automated mechanisms for their execution.

Summing up, we argued that the definition for blockchain technology has been given repeatedly, and yet blockchain is a safe, distributed, open and low-cost database technology, which may make it an ideal tool for modernizing public services. in e-government. There are many areas that are ready for experimentation and innovation. The first and most obvious field of application of the blockchain in e-government includes everything related to the verification and adjustment of various types of activities – licenses, permits, various types of transactions, processes, events. This technology allows convenient, safe and transparent management of such procedures.

References

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ЦИФРОВА ТРАНСФОРМАЦІЯ ФІНАНСОВОГО І УПРАВЛІНСЬКОГО ОБЛІКУ З ВИКОРИСТАННЯМ ТЕХНОЛОГІЇ BLOCKCHAIN

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Початок 21 століття характеризується становленням та інтенсивним розвитком інформаційно-комунікаційних технологій (далі ІКТ) і діджиталізації суспільства, що кардинально вплинуло на політичний та соціально-економічний розвиток та державну безпеку окремих країн світової спільноти. Серед досягнень останніх років в області ІКТ слід виділити технологію blockchain, яка дозволяє в режимі реального часу ефективно обробляти великі масиви даних, що зберігається у вигляді системи блоків, де кожен наступний блок, крім доповненої інформації, містить у собі зашифровану інформацію про транзакції в попередніх блоках. Спочатку blockchain-технологія була спроектована для роботи з криптовалютами, але в міру розвитку вона широко використовується в банківській сфері, логістиці, соціології, державному управлінні, медицині, освіті, менеджменті тощо.

В економічній літературі все частіше ширяться думка, що вітчизняний облік, а, відтак, й аудит, ґрунтуються на застарілих принципах і методах, не відповідають вимогам сьогодення та суперечать новій цифровій економіці, основне місце у якій належить інформаційним технологіям. Останнім часом з’явилася достатня кількість досліджень [1-7], які обговорюють можливості використання blockchain-технологій в управлінні великими підприємствами та корпораціями, у тому числі для організації ефективного фінансового та управлінського обліку. Багато дослідників вказують на те, що на сучасному етапі розвитку національної системи обліку найперспективнішими напрямками її вдосконалення є впровадження blockchain-технології, використання BigData та штучного інтелекту.

Цифровізація системи обліку з використанням blockchain-технології дозволяє скоротити витрати на оплату праці, мінімізувати помилки завдяки підвищенню якості формування та аналізу облікової інформації, прискорити процес обміну інформацією між стейкхолдерами, виключити її дублювання на різних серверах, підвищити рівень захисту даних.

Мета представленого дослідження – аналіз перспектив застосування технології blockchain в обліку великих підприємств, що становлять суспільний інтерес.

Суть технології blockchain полягає у ідеї розподіленого, децентралізованого зберігання записів у цифрових реєстрах (блоках). При проведенні конкретної операції між контрагентами (наприклад, це може бути постачання виробничому підприємству виробничих запасів від іноземного