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The use of blockchain technology in the public procurement system: international legal experience

The subject of the research is the analysis of international experience in the application of blockchain technology in public procurement systems, with particular reference to China, United Kingdom, Japan, Mexico, and South Korea. The purpose of the scientific work is to examine the theoretical and international legal aspects of the use of blockchain technology in public procurement systems. The methodological basis of the research includes a set of general scientific and private scientific methods, such as systemic, structural-functional, historical, and analysis synthesis, comparative law. The principles of transparency, fair competition, equal access for participants, and legality are outlined in regulatory legal acts regulating the field of public procurement, which in turn forms the legal basis for organizing the procurement process. To fully implement these principles, the introduction of distributed ledger technologies, such as blockchain, is considered a harmonious direction. Blockchain technology ensures data immutability and allows you to obtain an accurate digital footprint of each transaction, thereby strengthening control over decisions made and executed contracts as well as increasing the transparency of these procedures. The authors propose to introduce blockchain technology into the public procurement system and determine the legal status of a smart contract to optimize the level of data security protection of the public procurement procedure and increase their transparency and accessibility.

Keywords: Public procurement, blockchain, blockchain technology, digitalization, tender, international experience, law.

Introduction

Recognized as one of the key directions in the development of the digital economy, blockchain technology has become a subject of global attention. The study of blockchain technology is not limited to the fields of technical or economic sciences, currently this system is attracting attention in the field of law. One of the main advantages is the low level of modification of the entered information and its availability in an open registry. This structure is considered one of the effective tools that allows ensuring information transparency and reducing corruption risks in the public sector, as well as in the public procurement system. The public procurement system is generally the main mechanism that ensures the targeted, efficient and legal use of budget funds.

Public procurement constitutes a fundamental mechanism for ensuring the lawful and efficient allocation of public budget funds. Nevertheless, in many countries—including the Republic of Kazakhstan—the challenges of maintaining fairness and transparency throughout the procurement process remain pressing. In this context, blockchain technology is increasingly recognized as an innovative instrument capable of recording all stages of the procurement cycle thereby facilitating monitoring and audit procedures.

According to the legislation of the Republic of Kazakhstan, the concept of “Blockchain” is defined as “an information and communication technology that ensures the immutability of information in a distributed data platform based on a chain of interconnected data blocks, specified integrity confirmation algorithms and encryption tools” [1].

Blockchain technology was first introduced in 2008 as the foundational infrastructure for a digital currency Bitcoin. And other cryptocurrencies took this architecture as a basis for collective maintaining. Therefore, financial institutions, government agencies and private sector organizations started exploring the poten-

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tial of blockchain as an instrument for upgrading efficiency, transparency and reliability in date management processes [2].

Primarily, blockchain is a sequence of data blocks which are ordered chronologically and linked cryptographically to one another. Each block contains a timestamp and a hash reference connecting it to the preceding block, thereby preventing any subsequent alteration of the recorded information. Any modification would require the recalculation of all subsequent blocks in the chain. This immutability, combined with decentralized validation mechanisms based on consensus protocols, ensure a high degree of integrity and resistance to fraud or other malicious interference [3].

S. Abdul Mateen provides a stage-based analyzes of the evolution of blockchain research. According to the author, the chronological development of scientific and practical studies on blockchain technology can be described as follows:

- 2008–2015. Early research on blockchain focused primarily on understanding the operational principles of Bitcoin and other cryptocurrencies. During this period, blockchain was viewed mainly as the core infrastructure of digital payment systems.

- 2016-2017. The first academic inquiries into the application of blockchain in public procurement emerged. These studies concentrated on assessing the technology's potential to enhance transparency and reduce corruption risks.

- 2018–2020. Conceptual models and pilot projects aimed at integrating blockchain into public procurement systems were developed. Several countries and organizations initiated practical trials to test blockchain-based procurement solutions.

- From 2021 onwards. A shift from pilot prototypes to limited forms of operational deployment became evident. Blockchain-enabled procurement systems began to be launched in test mode within real economic sectors [4].

Chinese scholars, in their work "How to Use Blockchain in Procurement and Ranking Contracts" associate the principal advantages of blockchain in public procurement with enhanced information transparency and data immutability [5]. According to the authors, a blockchain-based platform ensures equal for all participants to tender documentation, bid submissions, and contract records, while significantly increasing the verifiability and auditability of such information.

According to R. Davila, blockchain systems can be classified into two types according to their characteristics: permissioned and permissionless systems. These systems operate within a specific function. In permissioned systems, access to the network is limited, and the ability to verify transactions is granted only to counterparties with special permission. If we talk about the advantages of this system, we can note that it saves electricity works faster, as an example is the Hyperledger Fabric platform. The second type permissionless, that is public. In this system transactions are publicly available, meaning counterparties can anonymously participate in verifying any stage of the process. As for the disadvantages of this system, since every transaction is accessible to anyone, it leads to slow system performance and high electricity consumption. An example is the Ethereum platform. Both types of blockchains operate within a consensus protocol [6].

From the perspective of public procurement, these requirements are particularly significant. Public authorities frequently encounter challenges related to coordinating numerous participants and maintaining verifiable records within complex procurement procedures. In such circumstances, a distributed ledger enables the establishment of a "single authoritative version" of information—accessible to authorized parties and protected from external interference.

A pronounced transition toward digitalization is evident in the public procurement sector of the Republic of Kazakhstan. The new law adopted in 2024 not only formalizes this development at the normative level but introduces specific mechanisms aimed at enhancing transparency throughout procurement procedures. One such mechanism is the institution of public monitoring of public procurement. Public monitoring is defined as a systematic process of collecting, aggregating, and analyzing information related to the planning, implementation, execution, and oversight of procurement, carried out through the government web portal and based on data made publicly available to an unrestricted group of individuals [7]. By delegating this oversight function to society at large, the system enables real-time verification of procurement activities. Furthermore, within the same legal framework, it is essential to emphasize that, since 2014, public procurement contracts in Kazakhstan have been concluded excluded exclusively via the state web portal and authenticated through an electronic digital signature. Accordingly, the formation, amendment, and execution of such contracts are fully recorded within an integrated information system. Taken together, these two legal

norms—the public monitoring mechanism and the mandatory electronic form of procurement transactions—constitute important prerequisites for the future integration of blockchain technology into the national public procurement system.

The transition to a fully electronic format of public procurement in Kazakhstan has been underway since 2016. However, the existing system does not yet provide full automation, particularly with respect to ensuring data immutability and the automatic execution of contractual obligations. In this regard, the examination of the legal and organizational foundations for integrating blockchain technology into the national public procurement system―taking into account relevant international experience―acquires particular significance for Kazakhstan.

The aim of the study is to identify the theoretical and legal foundations for integrating blockchain technology into Kazakhstan's public procurement system, drawing on relevant international experience.

The objectives of the research are as follows:

1. Analysis of the experience of using blockchain technology in public procurement based on foreign examples;

2. Identifying the advantages of implementing blockchain technology in the public procurement system in the Republic of Kazakhstan;

3. Identifying issues arising from the introduction of blockchain technology into the public procurement system in the Republic of Kazakhstan.

Methods and materials

A combination of general scientific and specialized legal methods was employed in the course of the study. Among the general scientific approaches, the system-based method made it possible to examine the field of public procurement as a complex institutional structure in which legal norms, organizational procedures, and digital technologies are interconnected. The methods of analyzes and synthesis were utilized to determine the extent to which the introduction of blockchain technology may contribute to enhancing the transparency of procurement procedures, ensuring the immutability of data, and reducing corruption risks. Among the specialized legal methods, the formal-legal approach was applied to examine the Law of the Republic of Kazakhstan "On Public Procurement", as well as the Law of the Republic of Kazakhstan "On informatization". The comparative-legal method was applied to examine the experience of countries such as South Korea, the United Kingdom, China, Mexico, and Japan in developing blockchain-based public procurement system. Particular attention was devoted to the works of Zhang Shiyan, Li Yao, Pryanikov M.M., Raquel Carvalho, Abdul Mateen, Syed, Davila R., Walport M. which enabled a meaningful comparison between international approaches and the context of Kazakhstan. In addition, the legal modelling method served as a basis for proposing potential regulatory mechanism aimed at incorporating distributed ledgers, smart contracts, and automated monitoring tools into public procurement processes.

Results

In the field of public procurement and tender procedures, enhancing efficiency, improving the interactions between public authorities and suppliers, and introducing innovative approaches have become persistent and increasingly critical requirements.

The increasing level of digitalization in public procurement ensures equal access to information for all participants, standardizes procedures for obtaining procurement documentation, and clarifies the process of evaluating birds. This reduces the influence of subjective factors, enhances the objectivity of decision-making, and contributes to the establishment of fair competition within the market.

In global practice, the integration of blockchain technology—based on distributed ledger systems—is increasingly regarded as one of the key directions in the modernization of public procurement mechanisms [8]. This technology enhances transparency of procurement procedures, limits the possibility of data manipulation, strengthens institutional trust among participants, and accelerates the overall procurement process.

The findings of the study allow for several important theoretical and practical conclusions. First, it has been demonstrated that blockchain technology constitutes an effective mechanism for ensuring transparency and reliability of information within the public procurement system. Chinese researchers emphasize in their work that the immutability of blockchain-based transactions significantly reduced corruption risks [5]. This approach has been incorporated into the PRC's Digital Governance Framework, which integrates an automated registration system for electronic versions of public contracts. Second, the United Kingdom has pro-

posed integrating blockchain infrastructure with state registries in order to ensure the legal validity of smart contracts. Such integration enables the automated verification of contract performance and monitoring of payment compliance. Third, the experience of South Korea demonstrates the effectiveness of blockchain-based digital auditing and oversight mechanisms. In the country's 2023 Public e-Procurement Blockchain Pilot project, all supplier-related data were stored on a decentralized network, thereby eliminating opportunities for corrupt interactions. Fourth, although Kazakhstan has made significant progress in digitalizing its public procurement system, the study indicates that despite the high potential for integrating blockchain technology, both legal barriers and limitations in technical readiness persist.

With regard to the introduction of blockchain technology in Republic of Kazakhstan, several limitations within the current legal framework can be identified:

– First, the legal status of smart contracts has not yet been defined. Although the Civil Code contains provisions on electronic transactions, the legal implications of automated agreements remain unspecified.

– Second, interoperability among information systems is insufficiently developed, which complicates the integration of the public procurement portal with financial monitoring systems.

– Third, the level of institutional and human-capacity preparedness is relatively low: most public authorities possess as theoretical rather than a technical understanding of blockchain technology.

– The use of blockchain technology will help improve the efficiency and quality of tender procedures. The advantage of this approach are as follows:

– the verification of personal data of tender participants and confirmation of their authorized powers are carried out through a secure and traceable chain;

– all information related to the tendering process is equally accessible to all participants, thereby ensuring transparency in decision- making;

– the evaluation and comparison of bids are performed automatically on the basis of predefined, objective criteria;

– since every operation and decision is recorded in an immutable ledger, the monitoring of procedural stages becomes fully traceable;

– smart contracts reduce the need for intermediaries, making interactions between parties more direct and reliable.

Overall, we believe that the introduction of blockchain into public procurement will significantly reduce the risks that arise during the tender process. This technology will increase competition in the market, ensuring transparency and efficiency. In addition, the use of blockchain technology increases the possibility of complete and accurate verification of transactions. It reduces the likelihood of fraud and manipulation, which often occurs in traditional paper-based or previously used electronic system. This reduces the risk of the customer providing technical to preserve accurate information and detect fraudulent activities in the purchasing process. The open nature of blockchain is compatible with public sector accountability and transparency standards. This innovative technology well increases security and reliability, and help make the public procurement system more efficient. Blockchain technology differs in many ways from the traditional method of storing and processing information. In this system, data is stored separately across all network participants in a distributed ledger. This eliminates the need for centralized database management and increases information security.

Discussion

The application of blockchain technology in public procurement has increasingly emerged as an interdisciplinary area situated at the intersection of legal scholarship and public administration at the global level. As demonstrated by the findings of this study, each country has developed its own approach to adopting this technology, shaped by its legal tradition, infrastructural capacity, and the prevailing level of corruption within the public sector.

From the perspective of the public procurement sector, these requirements are of considerable relevance. Public authorities frequently encounter challenges related to coordinating a large number of participants and maintaining verifiable record within complex procurement processes. A distributed ledger provides information for authorized parties and protection against external interference.

In 2016 report: "Distributed Ledger Technology: Beyond Blockchain", rates particular attention. The document prepared in the United Kingdom was developed by the Government Office for Science and coordinated by the Chief Scientific Adviser, Mark Walport. The authors of the report dispute that distributed

ledger technologies, particularly blockchain, have the potential to build up traditional procurement procedures [9].

The introduction of blockchain technology into the public procurement system will increase the level of date security. This means limiting the possibility of changing information, clearly defining the expiration date, and ensuring the possibility of monitoring all transactions. The issue of transparency and accountability in blockchain technology is reflected in its implementation of the possibilities of accepting applications in the tender process, processing contracts and monitoring.

Currently, the widespread introduction of blockchain technology in the tendering sector abroad is replacing the multi-stage processes that are not adequately ensured in practice and lack transparency. The advantages of introducing this technology into the public procurement system include:

- Automation of procedures between counterparties participating in the tender process.
- Lack of the ability to make changes to date.
- High level of accessibility, transparency and trust in information.
- Prevention of illegal actions such as pre-agreement and price fixing.
- Ensuring the security and efficiency of transactions.

Science all transaction are made electronically using blockchain technology, it is fast, convenient, and limits third-party changes to date, as well as allowing for free control of the process. Moreover, the technology allows for end-to-end monitoring of the supply chain, ensuring that all stages—from contract formation to the delivery of goods—are time-stamped, verifiable, and stored in a unified format [10; 16].

Furthermore, blockchain technology offers the potential to establish a certification and reputation system for suppliers. Within such a system, the quality, timeliness, and outcomes of each supplier's past contract performance can be assessed objectively. Suppliers with higher reputational scores gain greater trust and may benefit from competitive advantages when participating in public procurement. This, in turn, strengthens fair competition in the market and contributes to the more efficient use of public funds. As of 1 June 2025, Kazakhstan has introduced an automated rating-based system for determining winners of public procurement tenders without the involvement of a tender commission [11]. This system is already being applied in the procurement of construction and installation works, design and estimate documentation, and technical supervision of national-level highways.

Platforms built on blockchain technology store transactions and contracts in an open and shared database, where they are encrypted in the form of digital code and rendered impossible to alter or delete. Each operation is assigned an individual digital record and a unique cryptographic signature, allowing for reliable authentication, verification, long-term preservation, and secure transfer to other parties when necessary. Such a system effectively eliminates the possibility of data distortion or unauthorised modification.

As argued by M. Iansiti and K.R. Lakhani, the use of blockchain technology has the potential to substantially reduce—or even completely eliminate—the involvement of traditional intermediaries that have long been regarded as indispensable within public procurement processes, including legal consultants, brokers, banks, and various supervisory institutions [12]. As procurement procedures become more streamlined and costs are reduced, direct interactions between parties increase the overall level of trust among participants, since all information is authentic, uniformly accessible, and subject to automated verification through the blockchain architecture.

Hsieh Y. and colleagues demonstrate that blockchain technology can help reduce corruption levels while simultaneously enhancing the effectiveness of transparency and accountability mechanisms [13]. Rojas and co-authors identify a positive influence of this technology on public trust in procurement processes [14]. According to Tanaka, the use of blockchain enables a faster, more efficient, and substantially more transparent verification procedure for suppliers [15].

At the same time, a number of challenges arise in the process of implementing the technology. It is worth noting that the high costs of creating and implementing the system and the issue of precise and complete regulation in terms of legislation are still the main focus. Additional concerns include insufficient data transparency, the potential for information distortion, and the persistent risk of document falsification.

Tan and Wang demonstrate that the digitalization of public procurement systems reduces administrative costs and enhances the quality of data available for oversight and monitoring. In addition, Wang and colleagues note that automation helps prevent delays in payments to suppliers and improves the overall interaction between procurement authorities and vendors [16].

China's experience is characterized by the integration of blockchain technology with elements of decentralized oversight. Blockchain systems in the PRC are supervised through state-controlled servers, which

significantly enhances data security. In 2022, the country introduced the "Blockchain-based Smart Supervision Framework for Government Procurement" a project that enabled automated verification of public procurement contracts and the early detection of irregularities. This model may offer valuable insights for Kazakhstan, as it provides a mechanism that preserves governmental oversight while simultaneously ensuring transparency of information.

South Korea's experience has particularly demonstrated the technical effectiveness of blockchain. Through the Smart Procurement Blockchain System project, introduced in 2019, Korea has automated all stages of e-tendering, from application submission to contract execution, using smart contracts. This system is regulated by the Public Procurement Act [17] and Electronic Procurement Utilization and Promotion Act [18]. The first legislation establishes and regulates issues necessary for the spore, administration and management of public procurement services in order to ensure their fair and efficient implementation, while the second legislation aims to provide the necessary conditions for the electronic processing of procurement services by contracting authorities, thereby guaranteeing security, reliability and fairness in their procurement services, as well as to promote and facilitate the smooth implementation of electronic procurement services. The South Korean experience is characterized by a high level of mutual data exchange between government agencies. In addition, in South Korea, the public procurement system is implemented through the Public Procurement Service KONEPS electronic portal [19]. KONEPS is used to manage the procurement cycle, from notifications through bidding, contracts and payments. It is an online platform for offering goods and services at pre-agreed prices. From 2021 to 2025, PPS implemented a project to replace the old KONEPS system and add new government agencies. The "new generation" upgrade integrates advanced technologies such as AI and blockchain, supports mobile tender applications and provides digital document exchange. Government employees will have access to procurement data in real time, while AI will support users, while blockchain will help prevent misinformation and increase transparency in public procurement. The new generation of KONEPS also offers:

– **Personalized advertising**, which uses supplier information and trading history to create effective opportunities for small and medium-sized enterprises and new market entrants.

– **Demand forecasting**, which analyzes various categories of goods and services to support procurement planning and business decision-making.

– **Trading load forecasting**, which reflects the platform's traffic levels, enables traders to choose convenient times for stable access, and adjusts offers based on purchase history.

Since 2019, the Government of Mexico has begun employing blockchain-based systems in the administration of public procurement procedures. At present, the country is piloting a blockchain application designed to monitor open tenders and government contractors. Mexico's system relies on the Ethereum platform, which operates through smart contracts without the use of cryptocurrencies, to manage public tenders [20]. The peculiarity of this project is the possibility of full monitoring and control of public procurement procedures. That is, it not only ensures the entry of complete data about suppliers participating in the tender, starting from the customer, but also allows you to determine the business reputation of suppliers participating in the tender. This means that by knowing the results of previously concluded contracts, it creates an opportunity to take into account the risks of developing trust or negative attitudes towards the supplier. In addition, it ensures the preservation of all data from the announcement of the tender to its execution, as well as automatically assesses compline with technical requirements. Also, the Blockchain HACKMX network was launched based on the Ethereum system. The blockchain-based network integrates the five stages of the public procurement process: planning, tendering, implementation, contracting and agreement, as well as a sixth evaluation stage [21]. This ensures the transparency of the public procurement system.

Japan has always been very open for blockchain technology and digital currencies. The government has always shown a solid trust towards the two. And now, Japan is going to show stronger support towards blockchain as the government seeks more security by using blockchain. Japan is reportedly looking to integrate blockchain into its online systems for accepting government contract bids [22]. This approach may serve as a model for other countries, as it offers a contemporary governance mechanism grounded in transparency and institutional trust. In addition, Toshiba Digital Solutions Corporation launched an electronic contract system using its own blockchain "DNCWARE blockchain +" in 2020. Toshiba's own blockchain technology is used by national and local governments to achieve a highly secure and transparent digitalization of electronic contracts, which is aimed at contracting procedures between customers and suppliers. This has taken the relationship between private property and government agencies to a new level [23]. Support and Reform in Public Procurement and the Development of the Digital Marketplace: The Digital

Marketplace, which began full-scale use in FY2024, aims to promote its use by national and local governments in procurement, consider its use by independent administrative agencies and other affiliated organizations, and expand the participation of cloud software (SaaS) vendors in public procurement [24].

Blockchain technology differs in many ways from traditional method of storing and processing information. In this system, data is stored separately across all network participants in a distributed ledger. This eliminates the need for centralized database management and increases information security.

Blockchain technology exhibits fundamental distinctions from traditional methods of storing and processing information. This shows that data are not on a single central server and spread among all participants in the network and performing information security. According decentralized nature of blockchain reduces the possibility of data remove and establishes high level of integrity and reliability. In other words, blockchain erases the weakest link, which is critical for ensuring legal security and transparency within the public procurement system.

In other hand, centralized information systems offer advantages of resource efficiency and data manipulation as all information is stored on a single server. Under such conditions, the prerequisites for unlawful actions by hackers or dishonest participants are more easily created.

Blockchain systems increase the ability to provide evidentiary value to transactions because the legal status of each transaction is verified and recorded in an immutable chain. The potential of blockchain technology: increasing legal accountability in the field of public procurement, reducing corruption risks, and ensuring fair competition.

The structural difference of blockchain technology: date is stored among network participants. To break a system in a distributed date network, it would be necessary to attack many nodes of the network simultaneously. The cryptographic protection mechanism significantly reduces the likelihood of information being corrupted or destroyed.

In traditional civil law transactions, the execution of transactions is overseen by banks, brokers, and notaries, i.e. intermediaries. Although the model is effective in building trust between parties, it can lead to increased costs, slowed processes, and corruption.

The transparency of the decentralized ledger and the cryptographic immutability of transactions ensure trust relationships in the blockchain system. The parties interact directly via P2P. This, in turn, allows:

- to reduce transaction costs;
- to automate the execution of transactions;
- to ensure the accuracy and integrity of information [9].

Thus, beyond enhancing data reliability, blockchain technology becomes an essential instrument for ensuring transparency and fair competition within legal relations, particularly in domains that require a high degree of institutional trust, such as public procurement.

Furthermore, the findings of the study indicate that the introduction of blockchain technology in Kazakhstan would be economically advantageous. The annual volume of public procurement amounts to an average of 9.3 trillion tenge (according to the Ministry of Finance, 2024) [25]. Approximately 10–15 % of this financial turnover is inefficiently utilized due to non-transparent schemes and administrative errors. The implementation of blockchain has the potential to reduce these losses by 50–70 %.

Analyses of existing materials show that the introduction of blockchain technology into Kazakhstan's public procurement system, besides being a technical innovation, will contribute to the development of a new level of legal culture. Effective work in this direction will helps save budget funds, resolve issues related to quality and suppliers, increase the fight against corruption and also strengthen the country's international reputation.

Conclusion

The results of the study showed that the introduction of blockchain technology into the public procurement system would be a strategic and innovative solution for Kazakhstan. Blockchain technology creates conditions for greater transparency and trust by maintaining a complete digital trail of transactions, ensuring the integrity of the recorded data. It improves the automation process through smart contracts and a decentralized ledger. That is, increases the objectivity of decision-making, strengthens fair competition in the market, reduces the risks of corruption, and makes it possible applications and ensure the implementation of contracts.

The international experience of South Korea, Great Britain, Chine, Mexico, and Japan demonstrates the effectiveness of blockchain in public procurement. Introducing this practice in Kazakhstan would help coor-

dinate relations between state bodies and product manufacturers and improve the quality of procurement procedures.

In conclusion, we note that the implementation of blockchain technology in foreign countries (South Korea, Mexico, Japan, and China) has demonstrated its crucial importance for ensuring legal security and transparency in public procurement systems. This conclusion is reached despite some discrepancies in the relevant legislation and regulations in these countries.

Based on this study, the following proposals are recommended to optimize the public procurement system in the Republic of Kazakhstan:

1. The Civil Code of the Republic of Kazakhstan and the Law of the Republic of Kazakhstan "On Public Procurement" must clearly define the legal status of smart contracts.

2. Implement blockchain technology in public procurement in the Republic of Kazakhstan.

3. Improve the integration of the public procurement portal with financial monitoring systems in the Law of the Republic of Kazakhstan "On Informatization".

4. The relevant government agency must take measures to improve institutional and personnel readiness for the implementation of innovative technology.

Overall, blockchain technology is the latest way to develop the public procurement system and ensure compliance with international standards.

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Мемлекеттік сатып алу жүйесінде блокчейн технологиясын қолдану: халықаралық-құқықтық тәжірибе

Зерттеу пәні Қытай, Ұлыбритания, Жапония, Мексика және Оңтүстік Корея мысалында мемлекеттік сатып алу жүйесіне блокчейн технологиясын қолданудың халықаралық тәжірибесін талдау. Мақаланың мақсаты — мемлекеттік сатып алу жүйесінде блокчейн технологиясын қолданудың теориялық және халықаралық құқықтық мәселелерін зерттеу. Зерттеудің әдіснамалық негізі жүйелік, құрылымдық-функционалдық, тарихи, талдау, синтез, салыстырмалы құқықтық сияқты жалпы ғылыми және жеке ғылыми әдістердің жиынтығын құрайды. Мемлекеттік сатып алу саласын реттейтін нормативтік құқықтық актілерде көрсетілген ашықтық, адал бәсекелестік, қатысушылардың тең қолжетімділігі, заңдылық қағидалары, бұл өз кезегінде сатып алу процесін ұйымдастырудың құқықтық негізін құрайды. Осы қағидаларды толық іске асыру үшін блокчейн сияқты таратылған тізілім технологияларын енгізу үйлесімді бағыт болып саналады. Блокчейн технологиясы деректердің өзгермейтіндігін қамтамасыз етеді және әрбір транзакцияның нақты цифрлық ізін алуға мүмкіндік береді, осылайша қабылданған шешімдер мен орындалатын келісімшарттарға бақылауды күшейтеді, сондай-ақ аталған рәсімдердің ашықтығын арттырады. Авторлар мемлекеттік сатып алу жүйесіне блокчейн технологиясын енгізуді және мемлекеттік сатып алу рәсімдерінің деректер қауіпсіздігін қорғау деңгейін оңтайландыру және олардың ашықтығы мен қолжетімділігін арттыру үшін смарт-келісімшарттардың құқықтық мәртебесін анықтауды ұсынады.

Кілт сөздер: мемлекеттік сатып алу, блокчейн, блокчейн технологиясы, цифрландыру, тендер, халықаралық тәжірибе, заң.

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Применение блокчейн технологии в системе государственных закупок: международно-правовой опыт

Предметом исследования является анализ международного опыта использования технологии блокчейн в системе государственных закупок на примере стран Китая, Великобритании, Японии, Мексики и Южной Кореи. Цель научной работы заключается в изучении теоретических и международно-правовых вопросов использования технологии блокчейн в системе государственных закупок.

Методологическая основа исследования включает в себя совокупность общенаучных и частнонаучных методов, таких как: системный, структурно-функциональный, исторический, сравнительно-правовой анализ и синтез. Принципы прозрачности, добросовестной конкуренции, равного доступа участников, законности, обозначенные в нормативно-правовых актах, регулирующих сферу государственных закупок, составляют правовую основу организации процесса закупок. Для полной реализации этих принципов гармоничным направлением считается внедрение технологий распределённого реестра, таких как блокчейн. Технология блокчейн обеспечивает неизменность данных и позволяет получить точный цифровой след каждой транзакции, тем самым усиливая контроль над принимаемыми решениями и исполняемыми договорами, а также повышая прозрачность перечисленных процедур. Авторы предлагают внедрить технологию блокчейн в систему государственных закупок и определить правовой статус смарт-контракта для оптимизации уровня защиты данных в процедуре проведения государственных закупок и повышения их прозрачности и доступности.

Ключевые слова: государственные закупки, блокчейн, технология блокчейн, цифровизация, тендер, международная практика, закон.

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