The American Journal of Political Science Law and Criminology
(ISSN – 2693-0803)
Published: June 30, 2021 | **Pages:** 116-121
Doi: https://doi.org/10.37547/tajpslc/Volume03Issue06-17

IMPACT FACTOR
2021: 5. 952

Journal Website: http://theamericanjournals.com/index.php/tajpslc

Legal Framework Of Using Smart-Contracts In The Public Procurement System

Malikaxon Pirnazarovna Kalandarova
Member Of The Supreme Council Of Judges Of The Republic Of Uzbekistan, Judge Of The Supreme Council Of Judges Of The Republic Of Uzbekistan, Candidate Of Law Sciences, Uzbekistan

ABSTRACT

This article is devoted to the analysis of the legal framework for the digitization of public procurement, doctrinal approaches to the use of smart contracts in procurement. It studies the process and technologies of formation and development of smart contracts, blockchain, contracting in ethereum, the mechanisms of using smart contracts in public procurement. It also explores aspects that need to be addressed in improving the procurement system through smart contracts and develops recommendations.

KEYWORDS

Public procurement, digitalization, smart contracts, blockchain, online platform, Ethereum technology.

INTRODUCTION

Nowadays "New Uzbekistan" is taking comprehensive measures to develop the digital economy, the widespread introduction of modern information and communication technologies in all sectors and industries, especially in public administration, education, health and agriculture. In particular, it is true that these changes will not bypass the public procurement process. In the Decree of the President of the Republic of Uzbekistan dated October 5, 2020, № 6079 On approval of the Strategy "Digital Uzbekistan – 2030" and measures for its implementation, it is marked that ensuring online placement of information on public procurement by government agencies and organizations on the Open Data Portal of the Republic of Uzbekistan on the development of e-

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government, improving the special information portal of public procurement [1].

To date, significant changes have been made to the electronic system of public procurement, an electronic platform has been created, a module "e-shop" has been launched on a special information portal of public procurement. The next stage in the public procurement system is the digitalization through the transition to "smart" technologies (blockchain, smart contracts, artificial intelligence).

According to the Resolution of the President of the Republic of Uzbekistan dated July 5, 2018 № 3832 "On measures to develop the digital economy in the Republic of Uzbekistan", the task is given to introduce blockchain technology in public procurement from January 1, 2021 [2].

These days, e-shop, auction, competition, tender and single customer purchases are made almost electronically. The transformation of public procurement into digital is done through placement on e-government platforms. In the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated January 26, 2021, № 37 "On measures to further improve the process of organizing procurement procedures in public procurement using information and communication technologies" by September 1, 2021, it is planned to take measures to create a software package of the Central Information Portal of Public Procurement, which will collect all information on public procurement and provide electronic interaction with external information systems.

The use of advanced information technologies (e-commerce systems, online stores and e-commerce platforms, mobile applications, B2B market, etc.) serves to implement technical methods to combat abuse, inefficiency and corruption in the field of procurement. The new phase of procurement development will expand the opportunities for the use of advanced information technology in public procurement to create a smart procurement system based on the use of blockchain, smart contracts and neural networks.

The use of smart contracts allows suppliers to automatically ensure the execution of the contract (pledge) and transfer funds for the execution of the contract to their accounts.

The offer of such services in the commercial market of foreign countries has also begun. In particular, in Russia, Sberbank has introduced an updated version of the "guaranteed account service", an online tool to protect mutual settlements between suppliers of goods and services and buyers. This system allows the seller to guarantee payment for the delivery of goods or services, and the buyer - to receive the product or service[3]. In the Russian Federation, smart contracts are also being used in government procurement[4].

Smart contracts can also be used in contracts with a single supplier: based on elementary algorithms, the system can select the most suitable product, work, service according to the description and automatically conclude a contract according to the established criteria. In general, the use of smart contract technology is a sign of the change in the traditional institutions of regulation applied in jurisprudence and the beginning of the

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process of termination of classical contract law[5].

Smart contracts allow to create an intellectual contracting system. The first version of the intelligent contracting system, produced in the 1980s, was the American Information Exchange (AMIX), which made it possible to use split (semi-smart, semi-human interfering) contracts. In this electronic platform, contracts can be converted into computer code, stored in the system and repeated, controlled by a network of computers based on a chain of blocks. It has also led to the emergence of a reverse billing mechanism such as transferring money after receiving a product or service.

One of the most promising startups providing decentralized online services (with a market capitalization of more than $ 100 billion) is the Ethereum blockchain platform, which provides a smart contracting system developed by Vitalik Buterin in late 2013. Ethereum technology is based on a decentralized database of contracts, such as blockchain, which allows you to register transactions with any assets without resorting to traditional legal procedures[6].

Smart contracts ensure performance, minimize the risk of unfair performance of the transaction, and reduce transaction costs associated with concluding and executing contracts. They have more development potential than traditional contract law. Smart contracts can be considered as an innovative element of the contract system, including a system used in the procurement of goods, works and services for the needs of state and budgetary organizations.

Theoretically, in the process of introducing smart contract platforms in the field of public procurement, it is expedient to first implement an intelligent information system. In this regard, in order to avoid errors in public procurement, it is recommended to develop a platform that allows you to form the subject of procurement and the initial price in an automated mode before the announcement. [7]. The strategic implementation of such an institutional information environment is the beginning of the formation of a complete intellectual information system.

Indeed, the formation of such systems is the first stage and component of the creation of a smart contracting system in the field of procurement. Experts also believe that today the contract system is based on an archaic technology platform, and the digitization of operations, the creation of a distributed information-analytical and functional network will help to eliminate these risks. [8].

The best solution to regulate the public procurement process is a deeper modernization of the single public procurement information system. In case of non-fulfillment of obligations under the concluded contracts or in case of emergency, the use of blockchain technology can prevent the negative consequences of the contract.

Blockchain is a cryptographically protected open database of transactions. Blockchain technology is based on storing data on distributed servers. The lack of a single data center protects the system from local failures, allowing it to perform activities even when at least one blockchain participant remains. The advantage of a decentralized system is that the information stored in it cannot be altered

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or falsified. A blockchain participant connects to other computers on the network with which they exchange data in the form of data blocks. At the same time, each member of the system automatically checks the accuracy of the data obtained using the cryptographic method, independently transmitting the correct data across the network. Thus, the blocking system guarantees the impartiality of public procurement processes, keeping the "human factor" away from purchasing decisions.

Blockchain may include terms specific to standard contracts, as well as perform the functions of exchanging information and issuing orders to perform actions on them. This function is embodied in the concept of smart contracts. The Ethereum platform is the most advanced technology of smart contracts.

Smart contract-based technology allows not only to automate the transfer of payments between the parties for the fulfillment of the terms of public procurement contracts, but also to determine the additional terms and logic of interaction with the end user.

The proposed smart contracts exclude the human factor from the process of fulfilling obligations, increase the efficiency of transfers, with the exception of intermediaries (including treasury). The main task of such smart contracts is to form universal solutions for public procurement participants, to limit their direct interaction with each other, to transfer control over the implementation of the contract to intellectual technologies.

During the execution of the contract, the algorithm of smart contracts distributes funds between the parties or sets penalties and penalties for non-compliance with certain conditions. A smart contract can also automatically block funds transferred under the contract if required.

The Smart Contract Algorithm is activated when a request is sent from the buyer's computer or a message is received from another regular participant (seller) over the network.

The Smart Contracts' algorithm is written in blockchain technology and is limited to this environment. To make decisions on the implementation of the contract stages, the smart contract must be in contact with data sources outside the blockchain. This resource activity can be performed by barcode participants or other bodies in the blockchain field called "oracle" that are linked to the relevant database.

There are several types of smart contracts. The most acceptable for public procurement are as follows[9]:

- All stages of which are fully written in the algorithm;
- The main part of the contract is written on paper and only the stage of mutual settlements is programmed.

Currently, the use of blockchain technology for smart contracts is widespread on the Ethereum platform. In particular, a contract for the supply of food products within a specified period. At present, the implementation of such an agreement is multi-stage. After each delivery, the buyer develops an internal document on the receipt of goods (act of acceptance of food products), uploads

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it to the online shopping portal (along with the documents attached to the delivery of goods), for the consignment delivered to the treasury sends a request to make payments. The Treasury will review the application within a certain period of time and transfer the funds to a special account of the supplier. After the unnecessary procedures performed, the supplier receives money from the account for the performance of the contract.

Government contracts for the supply of food usually require frequent deliveries of goods to ensure the expiration date. There are time, labor costs, need for specialists and many other issues when performing these operations.

The use of smart contract technology eliminates all the above bureaucratic barriers and allows to deliver the specified contract for a long time (usually within a year) without the participation of supplier and customer representatives, especially financial regulators.

The program code of the single information system on the Internet portal where public procurement is carried out must ensure the compatibility of interaction with blockchain technology. It is necessary to set up operations to automatically track the facts of delivery and receipt of goods, sending the appropriate payment to the supplier for the specified functionality. At the same time, blockchain technology provides decentralized storage in the recording of all transactions between the customer and the supplier.

In the blockchain system, the crypto keys of the seller and the buyer are divided into open and closed. The public key gives access to the publicly integrated data of the system. The private key, on the other hand, gives you access to personal information intended only for you.

CONCLUSION

The process of improving the contractual mechanisms of public procurement is largely determined by the innovative capacity of the system. In this regard, the main factor in the development of the contract system is the improvement of its main institution - e-commerce platforms. The introduction of blockchain-based smart contracts in e-commerce platforms will significantly reduce the labor costs of the parties involved in public procurement (customer, bidder, regulator), minimize "human factor" errors, as well as ensure the transparency of the system.

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