EXPECTED CHANGES IN KAZAKH LEGISLATION RELATED TO THE IMPLEMENTATION OF THE BLOCKCHAIN TECHNOLOGY

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Introduction

The Parliament of the Republic of Kazakhstan is currently considering a draft law of the Republic of Kazakhstan 'On the Introduction of Amendments to Some Legislative Acts of the Republic of Kazakhstan on the Regulation of Digital Technologies' (hereinafter - the '**Draft Law**'). The Draft Law provides for changes to a number of regulatory legal acts regarding legal support for the implementation and application of digital technologies in Kazakhstan.

One of the most important novelties of the Draft Law is the provisions aimed at the introduction and application of the blockchain technology in Kazakhstan, which can be called a key breakthrough in the area of information technology over the past ten years. The Draft Law also provides for consolidation of the blockchain concept and key provisions thereon by amending and supplementing the Law of the Republic of Kazakhstan 'On Informatisation' (hereinafter - the '**Law**') dated 24 November 2015.

Blockchain Technology Background

The start and development of the blockchain technology is closely related to Satoshi Nakamoto's pseudonym, who is the developer of the Bitcoin protocol and first version of the software implementing this protocol. This term first appeared in the article titled 'Bitcoin: A Peer-to-Peer Electronic Cash System' by Satoshi Nakamoto, which contained a description of the Bitcoin payment system and the so named digital currency. According to the article, 'blockchain' is the name of a fully replicated distributed database. The blockchain technology was often referred to as transactions with various digital currencies, since the payment system and the Bitcoin digital currency became the first application area for this technology. The application potential for using this technology, however, turned out to be much wider, which was discovered and implemented by the technology community in the future.

The blockchain technology scope is not limited only to the area of digital currencies and finance and is of interest in a wide variety of areas, which involve any interconnected information blocks. At the moment, the blockchain technology is actively developing, new methods of application appear, the number of states and companies using this technology in their activities is also growing.

What is blockchain?

The name 'blockchain' reflects the way of data storing. Transaction data are stored in blocks, which being interconnecting with each other form a chain of blocks. As the number of transactions grows, so does the blocks chain. Each block records and confirms the time and sequence of transactions, which are then recorded on the blockchain network regulated by the rules agreed upon by the network participants. Each block contains a hash.

A hash is the result of any data processing with a specific algorithm that converts input data of arbitrary length into an output bit string of a specified length. The hash of the previous block links the blocks together and prevents any block change or block insertion between two existing blocks. Thus, each subsequent block enhances the verification of the previous one and, therefore, the entire chain of blocks. This method makes the blockchain protected from unauthorised interference, since its key characteristics is immutability.

The blockchain contains transaction data and does not replace databases, messaging technology, transaction processing, or business processes. Instead, the blockchain contains proven transactions evidence. Although the blockchain essentially serves as a database for recording transactions, its benefits are far beyond the limits of traditional databases. In particular, it eliminates the possibility of database hacking by attackers.

Changes By the Draft Law

As mentioned above, the Draft Law introduces new concepts in the area of digital technologies and establishes the legislative framework for some of them. As to the blockchain technology, the following concepts are proposed to introduce to the Law:

– *"**blockchain'** is an information and communication technology that ensures the information immutability in a distributed data platform based on a chain of interconnected data blocks, given integrity confirmation algorithms and encryption tools";*

– *"**distributed data platform** is a technological platform, whose components are interconnected by predetermined algorithms, are located on various network nodes, may have one or more owners, and may also have a different level of data identity";*

– *"**digital asset** is property created in electronic digital form using cryptography and computer calculations, which is not money, securities, derivative financial instruments, which underlying asset is securities, as well as an electronic digital form of the property rights certificate";*

– *"**digital mining** is a process of performing calculation operations using computer and energy capacities in accordance with predetermined encryption and data processing algorithms, which provides for confirmation of the data blocks integrity in information objects via blockchain";*

– *"**digital token** is a type of digital asset that is a digital means of accounting, exchange and certification of property rights."*

According to the Draft Law, the above concepts are interact as follows:

1) the blockchain technology is used in a distributed data platform and ensures the information immutability;

2) the basic blockchain principle is to store transaction data in blocks that form a chain of interconnected blocks;

3) the data stored in the blocks are digital assets, which transfer procedure is called a transaction;

4) one of the digital assets types provided for by the Draft Law is a digital token;

5) the activity of creating new blocks to ensure the functioning of the blockchain is called digital mining and is carried out by miners;

6) for maintaining the blockchain and creating new blocks, miners receive a reward, which may be a unit of digital currency or a commission fee.

The Draft Law provides for the inclusion in the Law of new Article 33-1 'Legal Regime for Digital Assets Circulation'. This provision establishes the requirements and rules for the circulation of digital assets, regulates public relations when concluding transactions with digital assets as objects of property rights, and provides for legal protection. According to the article:

– digital assets are not means of payment;

– digital assets are secured[1] and unsecured[2];

– the issue and circulation of unsecured digital assets is prohibited, except for the cases provided for by the laws of the Republic of Kazakhstan;

– digital assets are not financial instruments and do not provide their holders or owners with the relevant rights in relation to legal entities;

– the right to a digital asset is certified by recording in the blockchain by the person, who issued the digital asset, on a distributed data platform;

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[1] Secured digital assets include a digital token and other digital assets, which are a digital means of certifying property rights to goods and(or) services issued (provided) by a person, who issued a secured digital asset.
[2] Unsecured digital assets include digital tokens received as a reward for participating in maintaining consensus on the blockchain in the procedure specified by the legislation of the Republic of Kazakhstan.

- a person engaged in digital mining becomes the owner of digital assets arising from the digital mining.

Blockchain in Kazakhstan

Nowadays, an increasing number of countries are joining the race to introduce the blockchain technology by adopting regulatory legal acts and launching pilot projects related to this technology. Many countries use the blockchain technology to ensure cybersecurity, processes optimisation and services integration, while strengthening citizens' trust in information systems and accountability. The blockchain can be used in many areas of the state and public sector, including digital currency and payments, land registration, identity management, supply chain traceability, healthcare, corporate registration, taxation, voting (elections) and corporate governance.

The popularity of the blockchain technology that has grown over the past few years has also affected Kazakhstan. Het today, the National Association of the Blockchain and Cryptotechnologies Development is functioning in the country, which declares the country's integration into the world blockchain ecosystem; IT clusters involving acceleration programs are created, and Kazakhstani private companies and foreign developers with Kazakhstani participation enter international markets and are already gaining recognition.

The blockchain technology prospects are also highly valued by the state. At present, Kazakhstan is implementing pilot projects based on the blockchain technology in the area of public services and document flow. These projects include:

- 'VAT Blockchain' information system designed to form a decentralised database that allows you to instantly track the chain of financial transactions of taxpayers and give them a guaranteed VAT refund;

- 'Invest Online', a product (mobile app) of the National Bank of Kazakhstan, using which citizens of the Republic of Kazakhstan will be able to invest in securities online;

- The State Register of Medicinal Products and Medical Devices that contain complete information on all domestic and foreign medicinal products and medical devices registered in the Republic of Kazakhstan that are approved for medical use and sale in the territory of the Republic of Kazakhstan;

- The Unified Register of Administrative Proceedings designed to create a single database of administrative proceedings, online registration of protocols and payment of fines on the spot. The entire process of administrative proceedings in this project is automated from the initiation of proceedings to the execution of the administrative penalty decision;

- The State E-Register of Holders of Grain Receipts, which is a collection of information about grain receipts and their holders. The register provides for the identification of grain receipts holders at a certain point in time, registration of transactions with grain receipts, fixes the nature of registered restrictions on the circulation of grain receipts or the exercise of rights thereon, and contains other information.

Potential Participants (Players) of Blockchain Technology Market in Kazakhstan

The presence of potential market players that could work with blockchain technology in Kazakhstan is quite possible. First, it can be local or foreign technology companies that offer their platforms and products for the local market players. Besides, local or foreign financial and technological start-up companies that use the blockchain technology in their activity or completely base their activity thereon may become potential market players.

Blockchain and Data Protection

The blockchain technology has a high degree of protection and security, which allows it being used for the safe processing of personal data. A high level of security is achieved through cryptography (encryption), transparency and immutability of data stored in the blockchain.

However, when using the blockchain, the following circumstances must be taken into account.

1. Using the blockchain to store data is much more expensive than using other types of databases.

2. When using any type of database, it is necessary to comply with the statutory requirements effective in the territory of a particular state. For instance, when collecting and processing personal data of persons located in the European Union, it is necessary to comply with the GDPR (General Data Protection Regulation). The principle of blockchain operation may lead to a violation of many rules and requirements for the personal data protection provided for by GDPR, since:

– personal data is often transmitted across state borders, but it is not always possible to comply with the GDPR requirements for cross-border data transmission;

– incorrect or outdated data cannot be corrected (right to rectification);

– data processing does not stop when the processing goals are achieved (the principle of minimisation and the right to object);

– data cannot be deleted (right to delete).

Thus, in terms of the security of personal data storage, the blockchain is an appropriate and effective solution, however, the economic aspects and legal restrictions that the technology imposes shall be taken into account.

There are many options for using the blockchain, whether or not related to data protection. To understand whether it is necessary for blockchain-based projects to comply with the GDPR requirements, before developing and implementing such a project the following questions shall be addressed:

1) Is data processing involved? As a rule, the answer is "yes", since many blockchain-based projects involve data processing.

2) Are personal data processed?

If the answer is "no", then there are no problems with the need to comply with personal data protection requirements, as data protection laws do not apply to such a project.

If the answer is "yes", then the next question must be answered.

3) Are personal data of EU citizens and other persons located in the EU processed or can be processed during the project implementation?

If the answer is "yes", then you need to answer the following question:

4) Does the GDPR apply to personal data processing activities carried out within the framework of the project?

This requires to analyse the activities carried out within the the project related to the processing of personal data of EU citizens and other persons located in the EU. The GDPR has provisions defining the material and territorial scope of that regulatory legal act. lease note that GDPR applies not only to companies registered in the EU. For instance, a company must comply with the GDPR, if it processes the personal data of persons located in the EU in order to offer them goods or services, even if the company is registered outside the EU.

Please also note that when implementing a project using the blockchain technology related to the personal data processing, it is necessary to observe not only EU legislation, but also the legislation of other states that regulates the personal data processing, if it is applicable to the activities carried out within the project.

Conclusion

The revolutionary nature and promising outlook of the blockchain technology are indisputable facts. This technology is already used in many sectors, from economics and healthcare to public services and entertainment. Securing the blockchain technology at the legislative level is a logical and timely decision of our state. We hope that the Draft Law adoption will contribute to

the spread of this technology in Kazakhstan, which will ultimately revitalise the market, improve the provision of public services and transform other industries.

Sources

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