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## Digitization of monetary transactions in the field of public-private partnership: International-legal experience

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### ABSTRACT

The purpose of the work is to analyze the international legal experience of digitization of monetary payments in the field of public-private partnerships, as well as to highlight key features and positive trends in this matter. The object of the study is the international legal experience of digitization of monetary settlements in the field of public-private partnerships. The research methodology consists of the following research methods: theoretical generalization, scientific abstraction, system analysis, comparative analysis, historical method, and a group of logical methods. With the help of the conducted research, the peculiarities of digitization of monetary settlements in the field of public-private partnerships in different countries were analyzed. In particular, it was determined that the process of digitization of monetary payments in the sphere of public-private partnership differs in different countries.

KEY WORDS: digitization, public-private partnership, monetary policy, contract law.

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## Digitalización de transacciones monetarias en el ámbito de la colaboración público-privada: Experiencia jurídica internacional

### RESUMEN

Teniendo en cuenta que cada vez se digitalizan más esferas de la vida pública, es necesario analizar la digitalización de los pagos monetarios en el ámbito de la colaboración público-privada, teniendo en cuenta la experiencia jurídica internacional. El objetivo del trabajo es analizar la experiencia jurídica internacional de digitalización de pagos monetarios en el ámbito de las asociaciones público-privadas, así como destacar las principales características y tendencias positivas en esta materia. El objeto de estudio es la experiencia jurídica internacional de digitalización de liquidaciones monetarias en el ámbito de las colaboraciones público-privadas. La metodología de investigación consta de los siguientes métodos de investigación: generalización teórica, abstracción científica, análisis de sistemas, análisis comparativo, método histórico y un grupo de métodos lógicos. Con la ayuda de la investigación realizada, se analizaron las peculiaridades de la digitalización de liquidaciones monetarias en el ámbito de las asociaciones público-privadas en diferentes países. En particular, se determinó que el proceso de digitalización de los pagos monetarios en el ámbito de la asociación público-privada difiere en los distintos países.

**PALABRAS CLAVE:** digitalización, asociación público-privada, política monetaria, derecho contractual.

### Introduction

The fast development of technologies contributes to the digitization of the economy and other spheres of social life. Moreover, the coronavirus pandemic and the spread of online payments created the prerequisites for the introduction of innovations in previously familiar systems: monetary payments, and the conclusion of contracts. Globalization and integration processes contribute to determining the need to introduce new tools for national economic development and highlight advantages in the main areas of the economy.

Therefore, in the modern conditions of the development of social relations, it is extremely important to review the concepts of public-private partnership to understand the peculiarities of the implementation of such projects and the digitization of monetary transactions in the implementation of such a partnership. Today, it is important to get a comprehensive understanding of public-private partnership projects. In particular,

governments of developing countries face problematic issues regarding financing, implementation, and infrastructure support (including agricultural projects) to provide and support services and economic growth in general.

The experience of foreign countries shows that public-private partnership projects can improve service, and infrastructure and can contribute to economic "updating".

It is worth noting that public-private partnerships are generally defined as a way of contracting for the development and maintenance of infrastructure services, using the innovation and skills of the private sector to manage operations that often involve private financing. However, a single generally accepted definition of public-private partnership has not yet been formed. In particular, different definitions are used to describe the project depending on the country. Public-private partnership is a universal form of cooperation between the state/territorial communities and businesses, which allows for solving a wide range of problems related to digitization (Vinnyk, 2020).

Digitization of monetary settlements in public-private partnerships has many advantages for both public and private partners. Thus, the private partner gets the opportunity to innovate and interact with customers, and the public partner can regulate, monitor, and ensure trust in such a partner. A major role in ensuring trust is a clear understanding of legal regulation and the consistency of the state's actions both internally and during communication and cooperation with other states.

International experience shows that many countries successfully implement projects in the field of public-private partnerships and digitize monetary transactions for such projects. Projects in the field of introducing innovations in agriculture and infrastructure projects are being successfully implemented. At the same time, there are different models of such digitization: from innovations in currency (implementation of digital currency) to the actual process of making transactions. The differences are seen precisely in the variety of digital currency. Although, the experience of foreign countries in embedding digital currency in other assets and incentivizing them is also interesting (smart contracts to program the simultaneous exchange of currency and bonds). At the same time, as foreign practice shows, it is also important to ensure the participation of a private partner for the digitization of monetary payments, because, for the public sector, the implementation of innovations is a complex, expensive, and potentially inefficient process.

Therefore, taking into account the above, it is essential to study the features of international experience in the field of digitization of monetary payments for the implementation of public-private partnership projects.

## 1. Theoretical Framework or Literature Review

Public-private partnerships and digitization became the subject of many scientists. Vasylichenko (2022) analyzed the international experience of using public-private partnership tools. In the article so far, attention was drawn to the economic and legal foundations of the formation of the mechanism of public-private partnership, as well as the peculiarities of the regulatory provision of financing of this process. The researcher also analyzed the legal framework of the countries of the world and concluded that its presence is not always a guarantee of the effective implementation of public-private partnership projects, on the contrary, for the successful implementation of joint activities of the state and business, it is necessary to match the goals and key parameters of their implementation, an effective mechanism of interaction, ensuring informational component, availability of mutually beneficial bilateral cooperation and business interest in bilateral cooperation.

Public-private partnerships and other forms of collaboration in the context of digitization have been explored by Vinnyk (2020). The author drew attention to the importance of implementing socially important projects using artificial intelligence, and also analyzed in more detail the legal regulation of public-private partnerships in Ukraine.

Digitization as a source of new opportunities for the development of entrepreneurship was considered by Melnychuk (2021). The author notes that the use of digitization opportunities requires digital transformations in the activities of business entities, in particular, introducing modern digital technologies, equipment, or software into business processes, working on the development of new digital or digitized products and services, as well as working on the system management.

Chmyl (2021) explored opportunities and threats for the digitization of consumer market activities. The work of Krutov and Kashchena (2020) substantiates the main areas of improvement of state policy in the financial and innovation-investment spheres, aimed at creating prerequisites for ensuring the desired level of economic activity of enterprises.

Moreover, Psaila (2016) explored Malta's experience in public-private partnerships. In particular, the study draws attention to the future trajectory of the development of public-

private partnerships in Malta, and also notes the evolution of public-private partnerships as a global phenomenon.

Baker's article draws attention to the benefits of private sector participation in the digitization of payments. Thus, the head of the French central bank spoke about the potential benefits of private sector participation in the development and issuance of the future European digital currency (2020).

A study by Battisti (2019) describes the role of people in the process of social innovation. The author emphasizes that the social entrepreneur plays a key role, acting as a bridge between innovation managers and people who reflect on technology.

In a study by Louis Witters, Revital Marom, and Kurt Steinert (2012) the role of public-private partnerships in the development of innovation was reviewed and it was pointed out that they help private companies embrace innovation and pool new financial resources and business capital to open the door to the creation of new industry clusters, thus ultimately promoting innovation in the increasingly competitive environment. In addition, public-private partnerships allow private companies to participate in large-scale projects that are far beyond their traditional capabilities.

The Korean experience in the field of public-private partnership is revealed by Kim (2019). The author noted that Korea has made significant progress in digital governance.

Also, questions regarding public-private partnerships and digitization were considered by Tobias Adrian (2020). From the point of view of digital transformation in a public-private partnership, Tolstolesova, Glukhikh, Yumanova, and Arzikulov (2021) also considered the issue.

Jay-Hyung Kim, Jungwook Kim, Sung Hwan, Shin Seung-yeon Lee (2011) explored the characteristics of infrastructure projects.

Peter J. Baldacchino, Norbert, Tabone, Daniel, Galea, Simon, Grima (2021) also looked at public-private partnerships in Malta.

As can be seen from the above analysis of the literature, the issue of the international legal experience of the digitization of monetary payments in the field of public-private partnership has been insufficiently and fragmentarily investigated, and therefore there is further research on this issue.

## 2. Methodology

During the conducted research, the method of theoretical generalization was utilized. This method is a set of sequential actions to combine specific single facts into a single whole and identify typical features and patterns inherent in the digitization of monetary payments in the sphere of public-private partnership. The usefulness of the generalization method in the analysis of the international legal experience of regulation of digitization in the field of public-private partnership made it possible to understand the essence of the digitization of monetary payments in the field of public-private partnership in different countries, as well as to single out the common features and qualities, and the peculiarities of the implementation of digital tools in the field of public-private partnership in each country.

The method of scientific abstraction played a vital role in the analysis of the international legal experience of digitization of monetary settlements in the field of public-private partnerships. So, the specified method aims to distract from insignificant, secondary features and the imaginary selection and generalization of the most significant features characteristic of the object under study. Therefore, the study of the international experience of digitization of monetary settlements in the field of public-private partnership using the specified method made it possible to form a categorical apparatus and to single out the individual principles of the functioning of monetary settlements, as well as to understand the peculiarities of the digitization of such settlements because of the general principles.

The system analysis method made it possible to reveal the interrelations between the development of digital payments and the use of digital currency in different countries and the implementation of public-private partnership projects using the techniques of systemic thinking. This method helped to understand the reasons for successful and unsuccessful reforms in the field of digitization of monetary payments in the field of public-private partnership, as well as to identify patterns among different countries that successfully apply for digital payments in public-private partnership. Moreover, the identification of such regularities made it possible to find and solve problematic aspects of the digitization of monetary settlements, and in general to understand the ways of improving the system of execution and payment of contracts in the field of public-private partnership. Thus, the method of system analysis played a significant role in conducting research: from posing problems to choosing optimal ways to solve them.

The benefit of the method of comparative analysis helped to compare the experience of different countries regarding the digitization of monetary payments in the field of public-private partnership, to highlight key differences, as well as the peculiarities of the procedure for legal and technical support of such digitization. Using the example of comparing the experience of different countries in this field, the main difficulties in the legislative and contractual regulation of the digitization of monetary payments, as well as opportunities for ensuring cyber security, became clear.

The historical research method made it possible to analyze the emergence, formation, and development of monetary settlements in chronological order. In particular, it allowed identifying the factors that positively and negatively affect the digitization of monetary payments in various countries and more clearly formulate recommendations for further safe reformation of monetary payments during the implementation of public-private partnership projects.

The service of logical methods (analysis, synthesis, induction, deduction, analogy) made it possible to formulate the key concepts of this research ("monetary settlement", "digital monetary settlement", "digitization"), as well as to reveal the properties of these phenomena, relying on the techniques of formal logic.

### 3. Results and Discussion

Before analyzing the international experience of digitization of monetary payments in the field of public-private partnerships, we should consider the general theoretical provisions regarding the regulation of this concept.

The United Nations defines public-private partnership as innovative long-term contracts for the development of infrastructure and provision of public services with the involvement of financial resources, expertise, and motivation of the private sector in those areas that traditionally belong to the state's sphere of responsibility (Vasylchenko, 2022).

Regarding the successful experience of digitization of monetary payments in the field of public-private partnership, we will consider the practice of foreign countries in this field.

Great Britain obtained a rich experience in the field of implementation of public-private partnerships (one of the first projects was the construction of London docks in 1981). A model of the private finance initiative has been created, which led to the transfer of rights to the private sector for financing (construction, reconstruction, management, operation) of



state facilities in the industrial and social spheres. According to this model, a consortium is formed between the state and a private investor, and a special project company is created. During the term of the contract, the Consortium provides services that were previously provided by the state (Vasylchenko, 2022).

In France, state funding in such projects is reduced to a minimum, which provides an opportunity for innovation by a private partner, but the implementation of the main goals is focused on the state. As for risk distribution, it depends on each specific project (Vasylchenko, 2022).

In Germany, the use of public-private partnership projects began in the construction sector, and only later moved to the agricultural sector (Vasylchenko, 2022).

In Canada, the Ministry of Infrastructure and the Public-Private Partnership Council of Canada plays an important role in the implementation of public-private partnership projects. Their main functions are information support, implementation of foreign experience and best practices in the use of public-private partnerships, and preparation of analytical reports in this direction. That is why the digitization of transactions depends on the direction of the policy of the central bank and the Ministry of Infrastructure (Vasylchenko, 2022).

In the USA the issue of digitization of payments is considered together with the private sector of cyberspace protection. According to Directive No. 63 to assist the private sector in achieving and maintaining infrastructure security: "The State Coordinator and the National Infrastructure Protection Council propose and develop ways to involve the private sector in the periodic risk assessment of critical processes involving information and telecommunication systems. The Department of Commerce and the Department of Defense, in coordination with the private sector, provide expertise to private owners and operators of critical infrastructure to develop security best practice standards. The Ministry of Justice and the Ministry of Finance warrant a comprehensive study that includes demographic indicators of computer crime, compares state approaches to computer crime, and develops ways to prevent and respond to computer crime by minors." In addition, the creation of Information Sharing and Analysis Organizations (ISAOs), which should serve as information exchange points between enterprises, the private sector, and the government, plays an important role in the regulation of cyber security. (Public-private partnership in the field of

cyber security: international experience and opportunities for Ukraine: analytical report, 2018)

Thanks to the implementation of projects in the field of agriculture and the involvement of the private sector in such projects (state investments in Latin America did not exceed 2%-2.5%), there was a significant increase in GDP (Public-Private Partnership in Latin America. Facing the challenge of connecting and improving cities, 2018).

In addition to the general experience of implementing projects in the field of public-private partnership, it is worth paying attention to the experience of digitization of monetary settlements in the field of public-private partnership. In general, there are two models:

- "one-level digitization";
- "two-level digitization".

The limit of the models depends on the role of the central bank in such transactions. The two-tier model favors the central bank. At the same time, the single-tier model favors the private sector (digital coins denominated in domestic units of account will be issued privately, but they are fully backed by central bank reserves, although the central bank will license these operators and closely monitor them. So, both models have aims to provide an efficient payment tool (Tobias, 2020).

Also, Ukraine's aspirations for digitization of transactions in the sphere of public-private partnership are interesting for analysis. Thus, Deputy Prime Minister - Minister of Digital Transformation Mykhailo Fedorov presented the initiative and projects of digital recovery and development of Ukraine, including the Digital4Freedom initiative. This initiative involves the use of cashless currency instead of cash. Moreover, the minister emphasized that the digital infrastructure is the most stable and effective during wartime (MinDigit is launching Digital4Freedom — an international initiative for the rapid recovery and development of Ukraine through innovation and digitization, 2022). In addition, the implementation of such a project is consistent with the provisions of the Digital Agenda of Ukraine (Digital Agenda of Ukraine – 2020. Conceptual principles. Priority areas, initiatives, and projects of digitization of Ukraine by 2020, 2020).

In addition, it is worth paying attention to the provision of cyber security by European countries in infrastructure and agricultural projects. Thus, with the digitization of transactions, cyber security is a fundamental element for building trust, which is important

for creating and taking advantage of the digital economy. In particular, digitization is beginning to be fragmented, which makes it difficult, on the one hand, for European companies to compete at the national and global levels, and on the other hand, for European citizens and businesses to access viable technology. (Public-Private Partnerships Shaping Europe's digital future, 2016). Therefore, to attract public-private partnership projects in its digital market strategy for Europe on 6 May 2015, the European Commission announced that in the first half of 2016 it would launch a public-private partnership on cyber security in the field of technologies and solutions for the security of online networks (Public-Private Partnerships for Cybersecurity, 2022).

The development and implementation of public-private partnerships for the provision of infrastructure services can be a complex and challenging process. Experience shows that many countries with a track record of successful public-private partnerships have established a robust public-private partnership framework. Therefore, the country's goal is to build a reliable structure to facilitate the implementation of public-private partnership projects (Public-Private Partnerships (PPP): How can PPPs help deliver better services? 2022).

So, as can be seen from the above analysis of international experience, there are different models of implementation of digital monetary payments in the sphere of public-private partnership.

## Conclusions

The following conclusions were made during the study of the international legal experience of digitization of monetary payments in the field of public-private partnership:

1. The use of public-private partnership tools in the implementation of projects in the field of agriculture can have a successful result, subject to preliminary detailed risk analysis, taking into account the risk probability factor.

2. As international practice shows, the presence of a legislative framework is not always a guarantee of effective implementation of public-private partnership projects and the introduction of instruments for the digital transformation of monetary payments in public-private partnership projects (for example, agriculture).

3. Risks associated with the participation of the state partner for project implementations play an important role in the distribution of responsibility between the public and private sectors, which is expressed in the establishment of connections, cooperation, and coordination between project executors, correction of the degree of control and responsibility, and ensuring the awareness of the state and the private sector. In particular, in this context, it is important to ensure the mechanism of digitization of monetary settlements in the sphere of public-private partnership by the state partner, as well as the need to follow it on the part of the private partner.

4. Monetary settlements in the field of public-private partnership in foreign countries testify to the interest of businesses in solving state "problematic issues" and the desire of businesses to digitize the implementation of payments. Although international organizations and banks are also moving (or are already successfully implementing such projects).

5. The formation and development of digital transactions for public-private partnership in various spheres of economic activity (including agriculture), the implementation of management support from state authorities can activate the resource potential, which has a cause-and-effect relationship of ensuring conditions for more effective use of local resources, implementation of entrepreneurial initiatives and, in general, improvement of the level of technological development of certain areas of the economy. At the same time, effective interaction regarding the digitization of monetary payments requires special techniques and mechanisms capable of ensuring the use of payments by the state partner.

Regarding further scientific research, it is important to analyze the features of the introduction of digital currency as a method of transaction in the field of public-private partnership, as well as to analyze in more detail the experience of the introduction of digital currency during the implementation of public-private partnership projects in the field of agriculture.

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