

**APPLICATION OF THE BLOCKCHAIN TECHNOLOGY IN
ORGANISATIONAL UNITS WITH LEGAL CAPACITY OR LEGAL
PERSONALITY, FOR THE LAW AS IT STANDS AND THE LAW AS IT
SHOULD STAND (*DE LEGE LATA AND DE LEGE FERENDA*), ON THE
EXAMPLE OF REGULATIONS OF POLISH LAW**

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ABSTRACT

The statement concerns the scope of possible application of the blockchain technology in organisational units with legal capacity or legal personality, for the law as it stands and the law as it should stand (*de lege lata and de lege ferenda*) in the regulations of Polish law. Organisational units in which the use of this technology is being considered (*de lege lata*) in the area related to trading in stocks in dematerialised form, include companies. This technology can be used – in the event of the adoption and entry into force of the proposed provisions – in accordance with the current draft amendments to the Code of Commercial Companies in a so-called simple joint-stock company in the area of keeping stock records. The organisational units in which the use of blockchain technology in a wider scope than mentioned above can be considered *de lege ferenda* should include, with the assumption of dematerialisation of equity interest (or other participation units than equity interest), primarily capital companies, mutual insurance companies (or mutual reinsurance companies) and cooperatives, including in particular European cooperatives, as well as commercial partnerships. One cannot exclude the admissibility of using blockchain technology, for the law as it should stand, also with regard to other organizational units having legal capacity, in which there are legal institutions identical or similar to those above-mentioned, also in other legal systems than in Poland. This study applies primarily the formal-dogmatic method in relation to generally applicable legal acts, and within this methodology, as a rule, all available methods of interpretation, including in particular linguistic interpretation and systemic interpretation.

Keywords: *blockchain technology, organisational units, commercial companies and partnerships, cooperatives, mutual insurance (or reinsurance) companies*

INTRODUCTION

Blockchain is a decentralised and distributed database (register) in the open source model in a peer-to-peer internet network without central computers and without a centralised data storage facility, used for recording individual transactions, payments or accounting records encrypted with cryptographic algorithms[1]. Each participant in a given network has access to the distributed register and can add an operation which must then be verified by all other participants of the network. The register consists of blocks that contain operations carried out within the network, time-marked and thus authenticated. Each block contains the end of the previous block, which allows them to be connected in a chain[2]. Each blockchain consists of two groups of participants: 1) register operators (parties that carried out an operation between them (e.g. entered into a sales contract), 2) all users of a given blockchain network (peer-to-peer network), who certify the authenticity of the operation (contracting parties, a notary, city

council, etc.). Transactions are digitally signed using the so-called public key cryptography with Elliptic Curve Digital Signature Algorithm (ECDSA) and are public[3].

As part of the blockchain technology, so-called smart contracts are used. These are digital versions of traditional, classic “paper” contracts – computer protocols (software) designed to digitally facilitate, verify or force the negotiation, conclusion, modification or performance of a contract[4]. As a result of their application – like in the case of a classic contract – the parties of a contract are legally bound to the extent as specified in its content. Smart contracts enable the execution of credible transactions without involving third parties. These transactions are recorded and are irrevocable. Some contractual clauses used in smart contracts may be partially or fully self-executable or self-enforceable or have the characteristics of the former and the latter. Smart contracts can also combine and cooperate with other smart contracts[5]. They are designed to provide transaction security beyond the traditional, classical, “paper” contract law and to reduce other transaction costs associated with contracting.

The advantages of the implementation of a blockchain, resulting directly from the properties of this technology[6], are elimination of intermediaries and reduction of process fragmentation (the blockchain technology, being based on encoded cryptographic structure, does not require any intermediary institution to verify transaction data or confirming its participants), increased transparency, better security (blockchain technology is resistant to cyber-attacks, security is ensured by cryptography), innovation, the fact that distributed network eliminates the need for duplication of accounting documents, and therefore eliminates the risk of double records, lower risk for liquidity of the financial system, lower requirements for guarantee capital, the fact that due to distributed and decentralised character, a blockchain is resistant to all kinds of IT system failures, as well as transparency, efficiency and authentication (authorisation) of blockchain-based registers.

Obstacles to the implementation of the blockchain technology may include mostly [7,8] the costs related to the implementation of this technology to the banking system (in terms of the relationship between outlays and profits), high energy cost of technology use due to high computing power in certain types of blockchain technology, regulatory conditions (existence of relevant legal regulations that allow the use of this technology), relatively low trust in blockchain technology and the resulting rare use thereof, the fact that the introduction of a common system by banks may lead to a loss of control and performing the role of an information processing point only.

The category of organisational entity that has legal personality or does not have legal personality, on which the statute confer legal capacity, and the scope of application of blockchain technology

The basic context in which the legislature uses the conceptual category of organisational unit is the normative distinction of legal entities other than natural persons, i.e. legal persons (Article 33 of the Act of 23 April 1964 – The Civil Code, consolidated text: Journal of Laws of 2019, item 1145 – CC, e.g. limited liability company and joint-stock company) and organisational units that are not legal persons on which as statute confers legal capacity (i.e. the so-called third category of entities in civil law – Article 33¹ of the CC, e.g. commercial partnerships: general partnerships, limited liability partnerships, limited partnerships and partnerships limited by shares)[9]. The context may also include a normative distinction of organisational units that are not legal entities at all: they do not have personality or at least legal capacity, thanks to which they could be included in the category of entities from the so-called third category of entities (e.g. entities operating in the area of public finance, such as so-called

stationes fisci)[10]. Legal person is an organisational unit, which is granted legal personality (the attribute of legal personality) by a statute, while an entity from the so-called third category is an organisational unit that is not a legal person (not having legal personality), which is granted legal capacity by a statute. Taking into account differentiated criteria of typology of organisational units that constitute legal persons as compared to organisational units in general, the following types and kinds (examples) of these units can be distinguished[11]: 1) those not having legal-subjective separateness (not being legal entities), those having legal-subjective separateness (being legal entities), including those having legal personality or those not being legal entities but having legal capacity, 2) corporate entities and foundation-type entities, 3) public and private entities, 4) those only liable with their property and those for whose obligations also other persons are liable, 5) independent and dependent.

In the group of organisational units constituting separate legal entities, i.e. being legal entities, or organisational units without legal personality granted legal capacity by a statute, in which the application of the blockchain technology seems, due to the regulations currently in force in the Polish legal system, most feasible and most reasonable both from a theoretical and practical perspective, are commercial companies and partnerships. Commercial companies and partnerships in Polish law include: 1) partnerships (general partnership, limited liability partnership, limited partnership, partnerships limited by shares), and 2) companies (limited liability company, joint-stock company, including a European company incorporated in the Republic of Poland).

In addition to typical companies/partnerships, the literature also distinguishes so-called para-companies/para-partnerships *quasi* based, to a significant extent, on the legal structure of commercial companies/partnerships (including a specific company/partnership) due to the fact that regulations on specific commercial companies/partnerships are applied accordingly to them under the law[12]. This refers to European Economic Interest Groupings (EEIG) based on the territory of the Republic of Poland (constituting a so-called para-partnership), to which the provisions on general partnership are applied accordingly, pursuant to the EEIG Regulation and the Polish Act on EEIG and SE, and mutual insurance company (or mutual reinsurance company) constituting so-called para-companies, to which the provisions on joint-stock company shall apply accordingly[13].

European cooperative based in the territory of the Republic of Poland has, on the one hand, the elements of commercial companies/partnerships, especially companies (specifically limited liability company) and, on the other hand, cooperative (a legal construct distinct from company/partnership), which is sometimes treated as a special form of company, especially due to the fact that its incorporation and operation requires paying in the share capital divided into shares, characteristic of limited companies. These shares, like shares in limited liability company (or shares in a joint-stock company) are negotiable, so they can be traded legally (which requires mentioning from the perspective of the potential use of blockchain in this area).

In view of the above, this study will be devoted to a significant, predominantly use of blockchain technology in commercial companies, para-companies (para-partnerships), as well as European cooperatives.

APPLICATION OF THE BLOCKCHAIN TECHNOLOGY UNDER THE LAW AS IT STANDS (*DE LEGE LATA*)

The current legal provisions do not directly provide for the possibility of using blockchain in general, including in the area of commercial companies/partnerships or so-called para-

companies/para-partnerships. Due to the construction and advantages of blockchain (the presentation of which goes beyond the framework hereof), in the practice of legal transactions the possibility of using it in the area of capital companies has been noticed, especially with regard to a joint-stock company in terms of dematerialised participation units in this company (including e.g. shares), to issue shares or trade these shares primarily in the so-called exchange trading (this refers to a settlement system based on the technology of a distributed register of dematerialised shares).

It would be debatable whether the legislature should introduce a clear legal basis for the use of blockchain in relation to specific legal institutions, in the case of which the admissibility of the use of this technology is within their nature. It seems that, as a rule, the need to introduce a clear legal basis for the use of blockchains exists only where due to the essence of a given legal institution, including institutions in the area of company law (and so-called para-companies/para-partnerships), doubts arise about the possibility of using a blockchain. One may consider whether the introduction of such regulations should first refer to the so-called e-companies (established using model activities available in the ICT system).

Article 300³¹ § 3-4 et seq. of the draft amendment to the Code of Commercial Companies and certain other acts [14] regarding the so-called simple joint-stock company (SJSC) proposed the option of “keeping” records of shares of this company in the form of a distributed and decentralised database, which ensures the security of data contained therein and proper performance of the duties of a record-keeping entity. The basis for the use of this option is the total dematerialisation of shares of a SJSC (waiving the possibility of issuing shares in the form of documents), which should be assessed as a fairly correct legal structure from the perspective of current conditions and needs of business transactions. In contemporary legal and business transactions, in the face of the growing digitisation of all areas of life, the use of documents becomes less cost-effective, and moreover: there are many risks associated with them, including the risk of counterfeiting or a more complex process of trading them. In addition to the above-mentioned Article 300³¹ § 3-4 et seq. of the draft amendment to the Code of Commercial Companies, other regulations included in the draft with regard to SJSC do not refer directly to a decentralised database (presumably subject, within the remaining extent, to the requirements characteristic of the traditional manner of organising stock records).

Under this regulation, it would be reasonable to ask the question as to whether the record can be arranged on a public blockchain, or the ability to run it will be limited to a private blockchain. The draft promoter in the Grounds for the draft Act on amending the act – Code of Commercial Companies and certain other acts of 12 February 2019 (grounds for the draft Act on SJSC)[15] refers to a decentralised database with limited access (without going deeper into this issue), whereas the proposed provisions do not directly provide for such a requirement (limitation). It seems that it would be possible to “keep” records of shares on a public blockchain as long as, according to the above-mentioned regulations, the security of the data contained therein and proper performance of duties of the record-keeping entity are ensured. Due to the nature of blockchain, the term “record keeping” is more of a metaphorical sense in this case. As regards records maintained in a decentralised manner by globally distributed entities supplying computing power for the needs of a distributed network, the more appropriate term would therefore be “maintaining and controlling” the records infrastructure.

In the practice of applying the above regulation, “record keeping” should mean the possibility of appropriate interference of the “keeping” entity in the register, including in particular: 1) verification of new entries and denial of their execution in a situation where the sale of shares would take place with omission of the restriction on their negotiability or was

made without legal basis; 2) interference in existing entries in order to make updates (including modifications) resulting, for example, from the obligation to enforce a final court judgment or enforcement proceedings. So-called smart contracts can be helpful in this respect.

There is no doubt that the draft act on SJSC makes it possible to keep records on a private blockchain wholly controlled by the operator (however, this significantly reduces its potential application and cost-effectiveness of use). It is therefore necessary to extend the reflection onto the possibility of dematerialisation of securities other than shares, or instruments of entitlement issued by a SJSC, as well as a joint stock company, such as founder's certificates, utility certificates or subscription warrants, as well as other participation units generally in commercial companies/partnerships and para-companies/para-partnerships and European cooperatives.

APPLICATION OF THE BLOCKCHAIN TECHNOLOGY UNDER THE LAW AS IT SHOULD STAND (*DE LEGE FERENDA*)

Bearing in mind the structure and advantages of blockchain and regardless of the scope of currently applicable regulations in this area, it should be proposed to consider using it primarily in companies and mutual insurance companies (or mutual reinsurance companies), apart from using it to keep the accounts of these companies – which also applies directly to keeping accounting books other than companies and other legal entities), primarily with regard to dematerialised participation units, in particular in terms of: 1) issue of shares (in dematerialised form) in a joint-stock company (including a European company); 2) trading equity interest and other participation units (including both the shares in a joint stock company and European company, and shares in a limited liability company, mutual insurance company, mutual reinsurance company) and related book-keeping for these rights (share register, stock ledger, etc.), which should be referred to, apart from companies and para-companies, also to European cooperative; 3) making additional payments towards shares in a limited liability company (using so-called smart contracts); 4) payment of a dividend (occurring in various legal forms) – using so-called smart contracts; 5) payment of the equivalent for a redeemed equity interest (share) with the use of smart contracts; 6) payment of a dividend (appearing in various legal forms) – using so-called smart contracts; 7) payment of the equivalent for a redeemed equity interest (share) with the use of smart contracts.

Due to the structure and advantages of blockchain and regardless of the scope of currently applicable regulations in this area, it should be proposed to consider using it also in commercial partnerships and EEIGs (based in the Republic of Poland), apart from using it to keep the accounts of these companies – which also applies directly to keeping accounting books other than commercial companies/partnerships companies and other legal entities (primarily assuming the dematerialisation of participation units), in particular in terms of: 1) trading in the entirety of rights and obligations of a participant in a general partnership, limited liability partnership, limited partnership, general partner in a partnership limited by shares, and share in EEIG (based in the territory of the Republic of Poland); 2) payment of profit (using so-called smart contracts); 3) payment of the interest on equity interest (using so-called smart contracts); 4) property settlements with a partner leaving the partnership (including the payment of the so-called equity interest) using so-called smart contracts. As regards limited joint-stock partnership (in the area of shareholder's rights), it may be suggested to use blockchains to the same extent as in a joint-stock company.

One should also notice, in view of the law as it should stand (*de lege ferenda*), the possibility of using the blockchain technology with regard to other organisational units with legal capacity in which there are legal institutions identical or similar to the above indicated, including

dematerialised participation units, justifying the use of this technology. This also applies to organisational units with legal capacity in which there are legal institutions identical or similar to the above indicated, including dematerialised participation units in other legal systems than Polish.

CONCLUSION

First of all, blockchain is a technology of a very large potential from the general perspective of its use in organisational units that are separate legal entities (having legal personality), in particular in commercial companies/partnerships, para-companies/para-partnerships, cooperatives, including primarily in European cooperatives.

Secondly, the currently applicable does not explicitly provide for the possibility of using blockchains in general, but in the practice of legal transactions the possibility of using it in the area of capital companies has been noticed, especially with regard to a joint-stock company in terms of dematerialised participation units in this company (including e.g. shares), to issue shares or trade these shares primarily as part of public trading.

Thirdly, in the draft act concerning so-called SJSC it has been proposed, assuming that total dematerialisation of shares is in place, the possibility of keeping stock records in the form of a distributed and decentralised database that ensures the security of data contained therein and proper performance of the duties of a record-keeping entity, and therefore also on a blockchain, which should be referred directly to both a private blockchain or a public blockchain (in which the security of data contained therein was ensured as well as the proper performance of the duties of a record-keeping entity).

Fourthly, the use of the blockchain technology should be considered as a proposal for law as it should stand (*de lege ferenda*), especially in the area of bookkeeping or dematerialised participation units, including primarily in the field of share issues, trading equity interest and other participation units, making additional payments towards shares in a limited liability company, payment of dividends, payment of the equivalent for a redeemed equity interest (share), dividend payment, payment of the equivalent of the redeemed equity interest (share), trading the entirety of rights and obligations of a participant in a general partnership, limited liability partnership, limited partnership, general partner in a partnership limited by shares, and share in EEIG (based in the territory of the Republic of Poland), payment of profit, payment of the interest on equity interest, property settlements with a partner leaving the partnership – in relation to the above-mentioned participants in commercial partnerships.

Fifth, for the law as it should stand (*de lege ferenda*), it should be noted the admissibility of using the blockchain technology also with regard to other organisational units having legal capacity, in which there are legal institutions identical or similar to those above-mentioned, also in other legal systems than in Poland.

REFERENCES

- [1] Nakamoto S., Bitcoin, A Peer-to-Peer Electronic Cash System, www.bitcoin.org, pp. 1-9, 2008.
- [2] Zimoch D., Wpływ technologii blockchain na efektywność banku, *Zeszyty Naukowe UE w Katowicach*, Poland, No. 281, pp. 222-233, 2016.
- [3] Szostek D., *Blockchain a prawo*, Poland, pp. 36-50, 2018.

[4] Tapscott D., Tapscott A., *The Blockchain Revolution: How the Technology Behind Bitcoin is Changing Money, Business, and the World*, Great Britain (United Kingdom), pp. 72, 83, 101, 127, 2016.

[5] Szostek D., *Blockchain a prawo*, Poland, pp. 113-126, 2018.

[6] Schatsky D., Muraskin C., *Beyond Bitcoin, Blockchain is Coming to Disrupt Your Industry*, Deloitte University Press, pp. 2-3, 2015.

[7] Marzantowicz K., *Największe banki na świecie inwestują w Blockchain, podstawę Bitcoin*, ITWiz, <http://itwiz.pl/najwieksze-banki-na-swiecie-inwestuja-w-blockchain-podstawe-bitcoin/>, 2015.

[8] Korniienko O., *Zastosowanie technologii blockchain w bankach*, <http://www.lazarski.pl/pl/wydzialy-i-jednostki/instytuty/wydzial-ekonomii-i-zarzadzania/centrum-technologii-blockchain/zastosowanie-technologii-blockchain-w-bankach/>, 2019.

[9] Frąckowiak J., *Jednostka organizacyjna jako substrat osoby prawnej i ustawowej (w:) Rozprawy prawnicze. Księga Pamiątkowa Profesora Maksymiliana Pazdana*, ed. Ogiegło L., Popiołek W., Szpunar M., p. 901, Poland, 2005.

[10] Bieniek G., *Reprezentacja Skarbu Państwa i jednostek samorządu terytorialnego w postępowaniu cywilnym*, p. 7, Poland, 2003.

[11] Frąckowiak J. (in:) *System Prawa Prywatnego*, ed. Radwański Z., vol. 1, *Prawo cywilne – część ogólna*, ed. Safjan M., p. 1056-174, Poland, 2007.

[12] Kidyba A., *Prawo handlowe*, pp. 579, 753-764, Poland, 2016.

[13] Kozieł G., *Modele regulacji status materialnoprawnego wierzycieli uczestników w jednostkach organizacyjnych w prawie polskim*, pp. XXXIII, 133-143, Poland, 2019.

[14] Act of 13 June 2019 amending the act – Code of Commercial Companies and certain other acts (the text of the act passed to the Senate in accordance with art. 52 of the Sejm's regulations), <http://www.sejm.gov.pl/sejm8.nsf/PrzebiegProc.xsp?nr=3236>, 2019.

[15] Grounds for the draft Act on amending the act – Code of Commercial Companies and certain other acts of 12 February 2019, <http://www.sejm.gov.pl/sejm8.nsf/druk.xsp?nr=3236>, 2019.