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Blockchain and the Law:
a Roadmap of the Most Important Issues

Abstract

This paper presents an analysis of legal issues related to the use of a blockchain in business. Considering the legal aspects at as early a stage as possible is one of the key areas which are crucial for the success and timely realisation of a project. The scope of legal issues depends on the type of the decentralised solution chosen by the organisation. The authors explain the differences between an open blockchain and a closed one, noting the degree of control and the advantages of both solutions. When it comes to the following paragraphs of the paper, the meaning of jurisdiction selection and the manner of managing personal data in projects related to the use of blockchain are discussed. The authors explain what smart contracts are to the reader. They point out sector regulations which may have an influence on the carrying out of blockchain projects in individual sectors that are regulated. They analyse the issues of the cryptocurrency market and explain to the readers why the taxation of cryptocurrencies is controversial. In the final part, they signal that organisations planning to implement a blockchain-based solution should take the Anti-Money Laundering (AML) regulations and related issues concerning Know Your Customer (KYC) into consideration. The paper makes it possible to understand why the legal regulations discussed may turn out to be an essential project risk if they are not recognised in time, and how addressing legal issues smoothly helps in the transformation of a project at the Proof of Concept stage, into a solution that works productively.

Keywords: blockchain, smart contracts, cryptocurrency, outsourcing, AML, personal data

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Introduction

The use of blockchain in business requires an analysis of a number of aspects – starting from the desired functionalities to the selection of appropriate technical solutions. The already existing business environment, which consists of not only the current IT infrastructure and processes in a given organisation, but also of the legal environment, is equally important for a project. Legal aspects may influence the selection of specific technical solutions or the costs of integrating with existing systems. For that reason, the analysis of legal aspects at as early a stage as possible is one of the key areas which are crucial for the success and timely realisation of that project.

There are countless ways to use Blockchain, and as a result its use is not limited to strictly defined areas of law. Experience shows that a project concerning trading in securities by using a blockchain may generate threads which are completely different from the use of a blockchain in the energy sector, which require an analysis. On the other hand, there are completely different stories in the context of using solutions from the cryptocurrency market. The technological diversity of blockchains results in the fact that the legal context may be very different for – seemingly – similar projects. Thus, the analysis of the legal aspects of blockchain solutions requires a customised attitude. In this paper, we will attempt to discuss universal issues which are worthy of particular consideration when implementing a blockchain.

Governance

In the context of managing a decentralised solution such as a blockchain, it is extremely important to specify whether an open blockchain (in other words, a public blockchain) or a closed (private) one is being discussed. Public blockchains are understood as blockchains used typically as cryptocurrency transaction systems which are supported by communities with an unlimited circle of members. To a large extent, the functioning of those networks is influenced by groups associated with the main developers of the protocols of those networks. The software of such networks frequently uses open-source licenses which force one to share all modifications to such software publicly.

From a business perspective, using an open blockchain, one needs to be aware of the fact that one basically has no influence over what happens to that blockchain next. Due to the nature of licenses, in some cases, it may be difficult to develop "property" solutions. It should be noted that they will be real obstacles, but they will certainly be essential circumstances for many business uses.

When it comes to private blockchains, however, they are understood as solutions which are controlled by a strictly defined group of entities (let us call such a group "a consortium"). In this scenario, the consortium basically develops a common solution, that is, a common database that functions on the basis of a P2P network. In this case:

a. the entities whose infrastructure maintains the network are known
b. the number of those entities is limited
c. access to the data is limited for individual actors
d. access to the initiation of transactions is limited
e. the localisation of data processing is known.

Creating closed blockchains, due to the fact that they are solutions which are mainly beneficial when used by a group of entities, forces an attitude that includes the creation of ecosystems. In other words, it is a technology of group co-operation. For those involved, the most important issue is access to a given blockchain as the common source of real information. Such an attitude results in the fact that from the legal perspective, one of the key issues is defining and settling the terms of co--operation of all the members involved. The previously mentioned "consortium" developing the blockchain needs to know, especially the rights and obligations of individual members, as well as the criteria of joining the consortium. It also needs to have an established process of decision-making and clearly defined scopes of responsibility for individual persons involved. Establishing such rules generally requires an appropriate contractual "packet". When creating agreements for the purpose of such co-operation, one should take especially those regulations which concern competition protection law – prohibition on agreements restricting competition – and license issues concerning the tools used into consideration. In addition, there is obviously the question of appropriate agreements with the technological supplier on the realisation of the project – implementing, maintaining, and developing the solution.

The proper functioning and making decisions by the consortium is one of the key challenges for creating ecosystems of co-operation which is based on shared "blockchain" databases. It can be clearly seen in problems with decision-making in the case of open blockchains. The lack of procedures in this regard sometimes results in many months of impasses in the development of the technology or divi-

sions of the network (a so-called fork). Supposing that from the perspective of blockchain implementation in production, solution management may be considered a key "challenge" of the project, there are still some more legal issues which are worth mentioning. We present a brief review of 8 areas which should be analysed when evaluating a solution in legal terms.

Jurisdiction

Blockchain as a global technology which has an influence on very many areas of law sometimes requires meandering between legal regulations of individual countries. Regulations concerning a blockchain – particularly the cryptocurrency market – are not regulated uniformly in all countries. For this reason, planning a project in terms of the selection of the appropriate jurisdiction may save one many legal problems, especially those on the grounds of taxes and related to contacting the regulator.[3] This can be seen especially in the case of technological projects in the financial industry (broadly understood FinTechs) in which an essential decision to be made is the selection of the jurisdiction where one intends to get an appropriate license.

Personal data

A blockchain, due to the fact that is a decentralised, non-modifiable database which is based on a P2P network, naturally raises questions about personal data protection. In this context, the following specification is pivotal: will any data of this kind be processed in a blockchain? The question seems to be easy, however, it raises many doubts in practice. One should remember that processing data in a blockchain means processing data in a decentralised computer network, in parallel in numerous locations. In the case of the processing of personal data, it is essential to know what entities using which infrastructure maintain the nodes of the network where copies of the database are stored. It is also important to know what entities have

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3   A. Provasoli, *Worldwide: Regulation Of Blockchain Business – A Jurisdiction Comparison*, "Mondaq", 16.07.2018, http://www.mondaq.com/Gibraltar/x/719070/fin+tech/Regulation+Of+Blockchain+Business+A+Jurisdiction+Comparison (access: 3.01.2019).

access to a specified type of information processed in such a database. Those entities may differ from the ones which maintain the nodes of the network.[4]

The fact whether an open blockchain (e.g. the Bitcoin or Ethereum blockchain)
or a closed one (e.g. developed on the basis of R3 Corda or Hyperledger platforms)
is to be used is a big difference. In the case of the former, publishing personal data
in the global computer network may cause serious GDPR-related problems. However, using closed solutions offers some possibilities of managing that area. It makes
it possible to establish the rules of processing personal data on the contractual level
between the entities involved, and also to make a choice of technical tools that allow
for the regulation of the way in which those data are processed.

When it comes to personal data, "the right to be forgotten" on the grounds of
the GDPR, and one of the main functionalities provided by a blockchain – the non-
-modifiability of the data saved in the register – are particularly controversial. If
personal data are processed in a blockchain, organisations which use them should
think about how they will be able to address e.g. their customers' requests for the
deletion or modification of the data which concern those customers. This is an example
of a legal issue which can have an impact on the entire architecture of the solution.
Many projects attempt to handle this in the simplest way possible – by ensuring
that personal data do not enter the blockchain, and they so it for a reason.

Smart contracts

In the context of blockchain, one may frequently see statements that smart contracts
will replace "usual" agreements. Let us remember that a so-called smart contract
is the code of software that allows for the realisation of specified business logic on
the state of affairs described in a given blockchain.[5] The code of the smart contract
itself is also placed in the blockchain, thanks to which it uses the non-modifiability
of that blockchain and works automatically – it is always launched when it receives
input information that is specified for it. The basic question that arises is: is a smart
contract an agreement in the legal sense of the word? The answer is: not necessarily.

A smart contract is an element of reality, whereas an agreement is a legal construction and exists when conditions specified in provisions are met. As a rule, the
mutual consent (consensus) of the contracting parties, i.e. submitting a declaration
of intent with mutual content, is necessary for an agreement to exist. The declara-

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[4]   W. Maxwell, *Do blockchains process personal data?*, [in:] *A guide to blockchain and data protection*, 2017,
       pp. 7–8, https://www.hlengage.com/_uploads/downloads/5425GuidetoblockchainV9FORWEB.pdf

[5]   D. Szostek, *Blockchain a prawo*, Warszawa 2018, pp. 115–119.

tions of intent do not require written form. For instance, one submits an implied declaration of intent as one gets on a bus. A smart contract may, thus, be a form of expressing the mutual will of the parties, but it does not have to. If there is no consensus between the parties, there is no agreement. Then the deployment of a smart contract in the blockchain has no legal meaning regarding the existence of the agreement. In consequence, in our opinion, using a smart contract in no way precludes the possibility of claiming an error or other defects of the declarations of intent on the ground of the general provisions of the Civil Code. However, the practical question is, how should the content of the agreement be shown if the only form of expressing it is a smart contract? The answers in this regard will probably come with the practice of the first disputes concerning it.

In the context of conducting transactions by means of smart contracts, it is also worth remembering that legal provisions reserve specific forms for certain activities – e.g. a notarial act for the transfer of immovable property. In this regard, the completion of a transaction exclusively on a blockchain may not have the desired effects in the legal sphere. These are provisions the application of which cannot be excluded with the consent of the parties.

Regulated outsourcing

Provisions concerning outsourcing are an example of sector regulations which may influence the carrying out of blockchain projects in individual industries which are regulated. The issue of regulated outsourcing in the era of organisations' everyday use of IT services provided by external entities has already been quite widely recognised both by legal sciences and statements expressed by the regulator. It is particularly the financial sector that struggles with the practical effects of those regulations in the context of cloud solutions. The Polish legal system manifests quite sublime requirements in this regard which do not necessarily coincide with the contractual practice of global suppliers. It is worth noting in this context that the issue of regulated outsourcing does not omit blockchain solutions, either.

Similarly to cloud computing, in the case of a blockchain, we also have to do with information processing and the realisation of specified projects by some entities for others. It is also not difficult to see the use of cloud computing as an infrastructure for the nodes of a blockchain network. Thus, the question naturally arises, can the usage and maintenance of a common database constitute "the outsourcing of operations", as outsourcing is frequently described by appropriate provisions? It is difficult to unequivocally decide on this issue in separation from specific facts.

The aspect of outsourcing should certainly be included on the list of analysed issues for entities which are subject to restrictions in this regard. Especially if data processed in a blockchain are subject to specific regimes of protection, e.g. bank, payment or insurance secrecy, etc. A potential necessity of obtaining appropriate authorisations may influence the schedule of a project significantly. One should also not ignore the situation in which a technology supplier will be one of the global suppliers that may not accept the quite strict requirements of the Polish regulator in this regard.

Providing services by electronic means / consumer law

In developing a blockchain-based solution, one should not forget the regulations which cover entities providing services by electronic means, and consumers. Those regulations are essential, especially when the services are developed for a wide range of customers. First, the obligation to draw up terms and conditions regarding providing services electronically. In addition to information obligations imposed on entrepreneurs who are active in the Internet, one should consider a consumer's right of withdrawal in 14 days. When it comes to essential information obligations in this regard, one should include the data of the service provider, the identification of whom may cause many problems in the context of consortia. One should also not forget the obligations arising from Article 8 of the Act.

Cryptoland

Issues related to the cryptocurrency market, the creation of which was possible thanks to the blockchain technology, are certainly are certainly very medial topics as of recently. In this case, it is worth sparing a moment to analyse the situation from a long-term perspective because from this perspective, that market is affected by a certain problem of a "philosophical" nature. Namely, an essential number of participants of that market imagines its further development as the creation of a de facto new financial system which is based solely on independent, open public blockchains. In the optics of the national administration, such an idea seems to be a dangerous alternative to the traditional financial system which is based on currencies issued by states. Hence the regulators' scepticism.[6]

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[6]   P. Rosik, *Dozór może skutecznie ograniczać rozwój kryptowalut*, „Obserwator Finansowy", 14.02.2018, https://www.obserwatorfinansowy.pl/tematyka/rynki-finansowe/dozor-moze-skutecznie-ograniczac-rozwoj-kryptowalut/ (access: 3.01.2019).

As long as trading in cryptocurrencies occurs exclusively on the infrastructure of independent blockchains, state control over them is limited. The full anonymity of transactions that is frequently desired on the cryptocurrency market is also something that states fight against systematically. It is manifested e.g. in the drastic reduction of upper limits for cash transactions for entrepreneurs, or proposals for setting up a central register of bank accounts or even abandoning cash completely. The states want to have tools for acquiring knowledge of what resources their citizens have and how they use them. An independent cryptocurrency transaction system that is not controlled by states stands somewhat in opposition to that regulating tendency.

The technical properties of the blockchain make it virtually impossible to eliminate the cryptocurrency market completely. On the other hand, nowadays, regulators have enough "enabling power" to significantly restrict institutional trading in cryptocurrencies. They are able to influence the centralised cryptocurrency exchanges which (paradoxically) are currently responsible for the vast majority of transactions involving cryptocurrencies. Interestingly, the attitude of individual jurisdictions towards this market is not unified. Regulators that see potential in this market and the technology which develops it attempt to "offer" regulations providing space for creating new business around them. One may even observe a kind of regulative race between countries which decided to support this direction of development. For the time being, it is not known whether regulations will hit that market hard or whether they will help it to stabilise. A lot may depend on how the market itself will behave, and whether numerous projects will actually deliver on their promises. Due to the fact that it is a global market, international arrangements and standards seem to be key for the future. One should carefully watch its development and the regulators' current attitudes, especially international tendencies.

The issue of the cryptocurrency market also has a bearing on closed solutions (blockchains) due to the fact that the legislator does not always understand the idea of distributed registers and "lumps" solutions related to closed and open registers together. This, in turn, may make the development of solutions based on distributed networks significantly more difficult.

From the perspective of the "here and now", cryptocurrencies are still a very hot topic that is prospective in terms of business and technology – however, it is basically risky in legal terms. To some extent, this risk can be managed. However, one should be absolutely aware of its existence.

With respect to the detailed problems of the cryptocurrency market, the following issues be are most clearly outlined: What – e.g. from the perspective of the Polish civil law – is a cryptocurrency? For the time being, there is no clear category of civil law in which cryptocurrencies could be classified. It is a key legal issue for

the reliability of business trading using these assets.[7] Attempts to fit cryptocurrencies in the currently existing categories (e.g. property law)[8] encounter certain difficulties.[9] In that case, it is hardly surprising that this topic is widely discussed in the legal environment.[10] However, practice forces the adoption of certain solutions, even if they are theoretically not entirely justified. It is, thus, essential to make business decisions, knowing that currently, one still cannot be absolutely certain when it comes to the legal solutions adopted (e.g. the effectiveness of clauses in agreements, the subject of which are cryptocurrencies). Cryptocurrencies, due to their economic importance that they assumed with the increase of the economic value, undoubtedly deserve a clear regulation of the consequences of activities related to them.

AML/KYC

Another, quite crucial thread which should be considered when preparing a blockchain-based solution are Anti-Money Laundering (AML) regulations and related issues concerning Know Your Customer (KYC). Covering the area of cryptocurrencies with the AML regulations is connected with regulative trends and challenges for states. In July 2018, a definition of a virtual currency appeared in the Polish Act on the Prevention of Money-Laundering and Financing Terrorism.[11] The inclusion of cryptocurrencies in the AML system may generate new obligations related to implementing the solution in an organisation. As for such obligations, despite the fact that they will mainly concern cryptocurrency exchanges, in case of some systems, it may also be necessary to consider them. In this case, entities will be obligated to implement procedures which will be used to detect mechanisms of dirty money laundering, and they will also be obligated to report to the regulator.

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[7]   K. Piech, *Leksykon pojęć na temat technologii blockchain i kryptowalut* prepared under the Stream "Blockchain i Kryptowaluty" [Blockchain and Cryptocurrencies – translator's note] of the programme "Od papierowej do cyfrowej Polski" [From Paper Poland to a Digital One – translator's note], https://www.gov.pl/documents/31305/0/leksykon_pojec_na_temat_technologii_blockchain_i_kryptowalut.pdf/77392774-1180-79ab-4dd5-089ffab37602.

[8]   J. Szewczyk, *O cywilnoprawnych aspektach bitcoina, cz. 2*, „Monitor Prawniczy" 2018, 6, p. 304

[9]   See D. Szostek, op. cit., p. 29 in: P. Baran, *On Distributed Communications. I. An Introduction to Distributed Communications Networks*, Santa Monica 1962, pp. 8–9.

[10]   See K. Zacharzewski, *Bitcoin jako przedmiot stosunków prawa prywatnego*, „Monitor Prawniczy" 2014, 21, p. 1133.

[11]   Art. 2 ust. 2 pkt 26) Ustawy z dnia 1 marca 2018 r. o przeciwdziałaniu praniu pieniędzy oraz finansowaniu terroryzmu (Dz.U. z 2018 r., poz. 723) (Journal of Laws of 2018, item 723).

Concluding remarks

Gartner claimed in one of its analyses that the Blockchain – even if used success-fully in cryptocurrencies – had still not reached the point of production readiness in business.[12] In order to smoothly implement that technology in an organisation, one should not underestimate the legal threads. Depending on the project that is being carried out, different legal issues may be crucial. The threads form the business context of a project in the same way as the existing IT infrastructure, and, likewise, if they are not recognised in time, they may turn out to be quite a significant project risk, whereas addressing these legal issues smoothly may help greatly in transform-ing a project at the Proof of Concept stage into a solution which works in produc-tion terms. Experiences in the carrying out of projects of the enterprise blockchain type point out the necessity of identifying the areas of law which are essential from the perspective of the project that is being realised, at the earliest possible stage. The authors suggest that issues related to jurisdiction, personal data, provisions concerning regulated outsourcing or provisions concerning the prevention of money laundering be taken into account when carrying out projects. One should also not forget the risk resulting from the lack of a well-established legal situation of cryptocurrencies.

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[12]   D. Furlonger, *Hype Cycle for Blockchain Technologies*, "Gartner", 25.07.2018, p. 3.