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## **ARBITRATION IN SMART CONTRACTS DISPUTES – A LOOK INTO THE FUTURE**

*The paper explores the growing integration of blockchain technology in the legal field, specifically focusing on the emergence of smart contracts with their automated execution of contractual obligations. Technology experts believe that the use of smart contracts contributes to the eradication of disputes. However, the author challenges this claim while analyzing the disputes that may arise in this area, including classic contract law disputes and new issues specific to smart contracts. The paper focuses on whether arbitration is the optimal forum for resolving these disputes. The relationship between traditional and blockchain arbitration is explored, examining disputes that would be resolved using established methods and those suitable for the newly created mechanism. The interests of traditional arbitration do not coincide with those of blockchain arbitration. Both should cooperate and take advantage of each other. The author asserts that the flexibility and adaptability of arbitration will be its dominant advantage in addressing these disputes.*

**Key words:** *Smart contracts. – Blockchain technology. – International arbitration. – Blockchain arbitration. – Alternative dispute resolution.*

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## 1. INTRODUCTION

For most lawyers, even globally, the subject matter of this paper pertains to the realm of science fiction. Encoded, self-executing contracts, often praised as “smart”, which lead to disputes capable of being resolved privately rather than relying on national courts, appear far-fetched. Nevertheless, the current reality not only challenges but also contradicts such skepticism.

The reality that this is not a 22<sup>nd</sup> century topic is apparent from the fact that smart contracts are already revolutionizing business in various sectors of the economy. Forecasts indicate that specific industries will undergo substantial transformation due to the ongoing implementation of smart contracts, which is evident in certain segments that are already experiencing these changes.<sup>1</sup> These contracts are based on the so-called blockchain technology, i.e., distributed ledger technology, which is considered to be one of the greatest discoveries after the Internet (Werbach 2018, 489) and will change the business world in the coming decades (Tapscott, Tapscott 2016). Blockchain technology became relevant as a result of the shaken trust in classical financial institutions after the financial crisis of 2008 and the desire to move from centralized institutions to a decentralized cryptocurrency market. However, this technology<sup>2</sup> has far broader applications than solely cryptocurrencies<sup>3</sup>, with one notable use being the basis for smart contracts. According to some authors (Lefèvre, Delwaide 2019, 226), its true potential does not primarily lie within cryptocurrencies, the more prominent aspect, but rather in the domain of smart contracts.

One of the primary touted advantages of smart contracts is their ability to eliminate reasons for disputes by ensuring certainty in contract execution, with claims that they may render dispute resolution mechanisms unnecessary. In our paper, we aim to demonstrate that such assertions do not align with reality. We plan to achieve this by first providing a brief introduction of smart contracts<sup>4</sup> and subsequently analyzing both the

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1 One of the best examples of an industry that will be significantly changed by the development of smart contracts is the insurance industry, where new products and services are introduced, but where smart contracts can also serve to facilitate the detection of fraud, as well as to reduce costs for existing services of insurance companies. See Đurović 2020, 312.

2 On the legal framework of blockchain and DLT technology, see Cvetković 2020, 134–137.

3 Cryptocurrencies are just a segment of digital assets.

4 Especially considering that it is a new institute in domestic and foreign theory and practice.

traditional contractual disputes likely to persist in the future and the novel disputes unique to smart contracts. Considering the distinctive features of smart contracts and the disputes they may generate in the future, we intend to examine whether arbitration, known for its private dispute resolution features, serves as the optimal forum for their resolution. This examination will involve evaluating the relationship between traditional (classical) and blockchain arbitration, and determining the types of disputes suitable for previously known dispute resolution mechanisms and those better resolved through the newly developed ones. The conclusions are that today blockchain arbitration is suitable only for low-value and low-complexity disputes, due to the different presented factors. Accordingly, traditional arbitration is here to stay. Nevertheless, there is a need for arbitration to show one of its greatest advantages – flexibility, in order to be(come) the primary forum for resolving this category of disputes.

## **2. SMART CONTRACTS – OPENING NEW HORIZONS**

When presenting the institute of smart contracts, it is necessary to understand the technology on which they rest, the basis of their functioning. Distributed ledger technology is a digital record of transactions that is replicated, validated, and updated simultaneously across a network of participants, whether they are known, pseudonymous, or completely anonymous (Athanassiou 2018, 105). Distributed ledgers store information related to the exchange of various values, including but not limited to cryptocurrencies, tangible assets, and intellectual property. All of this operates without the necessity for a central authority as the accuracy of information is ensured by multiple copies of the distributed ledger held by all participants (Lefèvre, Delwaide 2019, 255), creating an immutable record. Distributed ledgers are often based on blockchain technology, so the two terms are regularly used interchangeably. Data is organized into blocks and stored on these chains, which, once verified through network consensus, are permanently appended to the chain and interlinked with previous blocks (Lefèvre, Delwaide 2019, 226). The principal strengths of blockchain technology lie in its decentralization and immutability – nothing relies on a singular authority, and there is minimal risk of alterations or manipulations within the chain.

Smart contracts, initially introduced by computer scientist Nick Szabo at the close of the last century, were defined as “a computerized transaction protocol that executes the terms of the contract.” Szabo illustrated their essence by comparing them to a vending machine for snacks and drinks

(Szabo 2018). When a customer chooses a product and inserts the required payment into the machine, it initiates the fulfillment of the request by dispensing the desired item. A contract is concluded between the buyer and the “machine” by selecting the product and entering the requested amount (the price is known in advance, and the product becomes known by selecting the buyer, which fulfills the elements of the sales contract).<sup>5</sup> The buyer, by taking these actions, effectively accepts the offer and fulfills their part of the contractual obligation. Subsequently, the machine is tasked with executing its part of the contract, namely, dispensing the requested item. Once the money is inserted, no further human intervention is necessary for the contract’s execution. The machine, hence, *independently* and *automatically* executes the contractual obligation, demonstrating precisely the core concept of smart contracts. In this light, Szabo refers to these machines as “the primitive ancestors of smart contracts”.

A smart contract can be defined as a computer code<sup>6</sup> that was created to automatically perform contractual obligations after the occurrence of a certain event or as an agreement between the parties whose execution is automated through a computer program.<sup>7</sup> Recently, Serbia has joined in the circle of countries that have legally regulated the legal aspects of digital assets.<sup>8</sup> The importance of the Law on Digital Assets<sup>9</sup> is also reflected in the fact that Serbian law gained a pioneering definition of a smart contract. Smart contract is defined as a computer program or a computerized protocol based on the distributed ledger technology (DLT) or similar technologies, which is partly or wholly performed by software and which automatically executes, controls or documents legally relevant events and actions according to the terms of a contract already concluded, whereby the contract may be

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5 See Serbian Law on Obligations, [Zakon o obligacionim odnosima], *Official Gazette of the SFRY*, Nos. 29/78, 39/85, 45/89 – Decision of the Constitutional Court and 57/89, *Official Gazette of the FRY*, No. 31/93, *Official Gazette of SCG*, No. 1/2003 – Constitutional Chart and *Official Gazette of the RS*, No. 18/2020, Arts. 458–466.

6 This is about turning contractual provisions into code, as one aspect of law algorithmization. For more about this phenomenon, as well as about the so-called *LegalTech*, see Cvetković 2023, 316–326.

7 Definitions derived from Durovic, Janssen 2019, 4.

8 At the time of enacting the Law on Digital Assets, Serbia was among the few countries to do so. Not long ago, countries often referred to as offshore jurisdictions, such as the British Virgin Islands, also enacted regulations on the digital assets market. This led some crypto companies to move to other jurisdictions without regulation.

9 Law on Digital Assets, [Zakon o digitalnoj imovini], *Official Gazette of the RS*, No 153/2020.

concluded electronically by such program or protocol.<sup>10</sup> However, different types of these more or less “smart” contracts have been developed: i) a traditional (paper) contract with automatic execution through computer code, ii) a hybrid contract,<sup>11</sup> and iii) a contract drawn up exclusively in computer code.<sup>12</sup>

The first two types necessitate the formation of a conventional (paper) contract, prompting some authors to label them as smart *legal* contracts.<sup>13</sup> In contrast, the third type embodies the true essence of a smart contract, existing entirely in code, without a separate written document. Smart contracts function based on the if-then principle, operating in binary logic. The latter type is currently limited to simpler transactions with automatic payment capabilities. These transactions encompass straightforward consumer interactions (such as payment to the seller upon receipt of package), compensation for insured passengers for flight delays or cancellations, cryptocurrency or digital token transactions (where the entire transaction takes place in the digital world). In these specific domains, smart contracts significantly enhance efficiency by reducing administrative costs, eliminating the necessity for physical documentation, and bypassing external verification and intermediaries (Wiegandt 2022, 679). It is acknowledged that, presently, smart contracts might not be the optimal solution for very complex commercial transactions wherein contractual rights and obligations rely on abstract concepts such good faith, reasonable efforts, or due care in long-term business commitments (Wiegandt 2022, 679). However, the author suggests that this limitation primarily concerns the third type of smart contracts, which are entirely expressed through computer code. In contrast, hybrid contracts possess the capability to incorporate binary rights and obligations via code, while also accommodating abstract concepts and contractual provisions such as governing law and dispute resolution clauses in a traditional contract.

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10 Law on Digital Assets, Art. 2, para. 1, it. 39.

11 Law Commission (2021, 6) defines a hybrid smart legal contract as a contractual agreement where certain obligations are articulated in natural language, while others are encoded within a computer program. The execution of some or all contractual obligations is automated through the underlying code. There is also a possibility that the terms of a hybrid contract are primarily written in code with a few natural language terms.

12 For more details on the forms of smart contracts, see *Ibid.*

13 The English term *Ricardian contract* is also often used.

Regarding all the questions arising from smart contracts solely expressed in code – such as jurisdiction, applicable law, interpretation and liability, the primary issue is whether parties can autonomously express their intentions to create a legally binding contract solely through code. We accept the opinion that one of the fundamental principles under most contract laws is the freedom of choice,<sup>14</sup> which allows parties to select any form for their contractual relationship. This principle contributes to making smart contracts legally enforceable.<sup>15</sup> Moreover, it is stated that there is no need to change existing contract law to tailor it to smart contracts.<sup>16</sup> Existing principles and doctrines are sufficiently flexible to also be applied to smart contracts.

### 3. FUTURE DISPUTES RELATING TO SMART CONTRACTS

It is frequently suggested that the primary advantage of smart contracts lies in their ability to eliminate reasons for disputes by ensuring the certain execution of contractual obligations. The premise is that if execution is independent of human factors, the need for litigation diminishes. However, the question arises: is this actually the case?

Smart contracts not only introduce new legal issues but also fail to eliminate traditional disputes inherent in contract law. Similar to other forms of contracts, parties may seek a nullity of a smart contract due to lack of consent or duress, or if the contract execution violates public policy (Lefèvre, Delwaide 2019, 232). The Serbian Law on Obligations allows parties the freedom to arrange their contractual relations as they please, within the confines of compulsory legislation, public policy and good faith,<sup>17</sup> similarly applicable when expressing agreements through a smart contract.

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14 For Serbian law see Law on Obligations, Art. 10 and Art 67, para. 1. For English law see Durovic, Lech 2019, 76.

15 Durovic and Lech (2019, 92–93) state that under current English law, commercial transactions conducted through smart contracts should be enforceable by the courts if they meet the existing criteria for contract enforcement. It appears that no alterations to English law are necessary to ensure the enforceability of smart contracts. Smart contracts should be seen as an extension of the freedom to contract, where they serve as a tool for fulfilling promises made under a contract. For types of contracts that necessitate a written form for enforceability, smart contracts entirely based on computer code can meet the statutory “in writing” requirement.

16 For considerations under US law, see Raskin 2017, 306, 321–329.

17 Serbian Law on Obligations, Art. 10.

Additionally, parties can invoke traditional contract law principles, such as the impossibility of performance, for instance, when trade is prohibited due to imposed sanctions on an enemy country.

Classical issues in contract law, such as contract modification or termination, take on new dimensions when viewed within the realm of smart contracts. These “new problems” are akin to those encountered in the operation of vending machines for food and beverages. Similar to a customer changing its mind after inserting money or the machine failing to dispense a product, smart contracts, despite their automation, can encounter analogous issues during automatic execution (Sherata 2018, 6). They too can end up being void after execution, necessitating dispute resolution for refunds. More frequent disputes may focus on unjust enrichment<sup>18</sup> rather than the non-performance of a contractual obligation.

By their nature, smart contracts are inflexible<sup>19</sup> and immutable, and no one can stop the execution of the contract when the software recognizes that an event has occurred that activates the execution of the obligation. This is both an advantage and a disadvantage of a smart contract. The performance of the obligation does not depend on the will of the contracting party. Thus, if one person would like to buy a car from another person through a smart contract, the smart contract will automatically transfer money from the buyer’s account to the seller’s account (at a moment that is considered relevant for the fulfillment of the seller’s obligation, for example when the car crosses the border of the buyer’s country),<sup>20</sup> while it will automatically change the owner of the property right. Even with automatic execution, the possibility of a car having substantive defects remains, leading the buyer to question the seller’s fulfillment of their obligation. Smart contracts are likely to decrease disputes related to non-payment of the contract price, but

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18 For more on unjust enrichment in relation to the contract, see Lutman 2020, 111-113.

19 This inflexibility actually rises a plethora of new and additional costs during the negotiations, drafting and enforcement of a smart contract. Accordingly, it is up to parties to decide whether it is convenient to them to conclude a smart contract or a paper contract. For one of the examples where smart contracts increases the costs see in Sklaroff 2017, 292-293.

20 The smart contract notifies an oracle, an external data source that sends information to a computer program, about external events. For example, if flight delay or cancellation insurance is in the form of a smart contract, oracle transmits the information about delay or cancellation to the smart contract. See Law Commission 2021, 21.

conversely, they may notably increase disputes<sup>21</sup> concerning buyer rights and seller responsibilities due to the delivery of goods with substantive defects.<sup>22</sup>

The language used in contracts can sometimes be problematic, failing to clearly express the true intent of the contracting parties at the time of conclusion. Such issues can become more pronounced with smart contracts, as translating the will of the parties into code can lead to discrepancies between the actual intent and the developer's understanding or coding capabilities. Consequently, disputes regarding the genuine intent of the parties may become more frequent. Interpreting contracts written in part or entirely in code presents a new dimension that must be adapted to the reality of the digital world. Modes of interpretation traditionally developed for plain language provisions now face the challenge of interpreting codified provisions. Hence, various proposed solutions seek to adapt existing principles to these new challenges.<sup>23</sup>

Proving the existence, form, and content of a smart contract can be the subject of dispute, particularly when the contract is solely in the form of code, lacking a paper contract (Lefèvre, Delwaide 2019, 232). In addition, in most jurisdictions a contract is valid if entered into by parties with adequate legal capacity. Frequent pseudonymity or anonymity of parties in smart contracts makes it difficult to assess the fulfillment of this condition (Sherata 2018, 11).

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21 The considered problem can be mitigated, for example, by providing the option for the party that is dissatisfied with the performance of the contract by the other party to order the automatic return of funds, and to activate the dispute resolution clause.

22 About the buyer's rights when it receives goods with substantive defects, see Art. 488 of the Serbian Law on Obligations. Under Art. 35 of the United Nations Convention on Contracts for the International Sale of Goods (CISG), the seller must deliver goods that are of the quantity, quality and description required by the contract and that are contained or packaged in the manner required by the contract. For an analysis of whether the CISG can be applied to smart contracts, see Janssen 2022, 9–17. If the affirmative answer is accepted, on other questions concerning CISG and smart contracts, see Duke 2019.

23 Thus, the question of how a reasonable person would understand the terms of the contract is replaced by the question of how a functioning computer would understand them. There is also a proposal with even more supporters – the application of the standard of a reasonable programmer (coder). In that case, the programmer would have the role of an expert who would “translate” the code to the forum with the main task of providing an expert opinion on what instructions the code is giving the computer. See Law Commission 2021, 16.



The issue of arbitration jurisdiction arises when the arbitration agreement is exclusively expressed in code,<sup>24</sup> without a traditional written contract. Within legal literature, extensive consideration is given to whether such a scenario fulfills the criterion stipulated in the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York Convention),<sup>25</sup> which requires the arbitration agreement to be in writing<sup>26</sup>. Additionally, this raises questions concerning compliance with more permissive national arbitration laws.<sup>27</sup>

Beyond traditional disputes, the unique features of smart contracts give rise to new issues. Inevitable “holes” or bugs in the code<sup>28</sup> significantly affect execution. The famous DAO incident serves as a stark example, illustrating how a single code vulnerability allowed hackers to withdraw \$40 million (Shehata 2018, 6). Studies indicate that Ethereum-based smart contracts have an average of at least one hundred errors per thousand lines of code (Zaslowsky 2018, 360). This brings forth the crucial question of liability, particularly regarding the third party responsible for creating the smart contract.<sup>29</sup>

Completely new questions will arise regarding disputes from smart contracts with the currently most common subject matter – digital assets. These disputes will share many similarities with other commercial disputes with issues of contract enforcement, property rights, intellectual property rights, and vitiating factors. Nevertheless, the immaterial (intangible) nature of digital assets, the potential anonymity (or pseudonymity) of parties and the immutability of the distributed network, open completely new horizons of substantive law (Scott *et al.* 2022, 2).

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24 If arbitration agreements in the form of code become widespread, this may prompt arbitral institutions to create a model clause in that form.

25 The New York Arbitration Convention on the Recognition and Enforcement of Foreign Arbitral Awards, New York, 10 June 1958. According to the UNCITRAL, it is a convention that has been ratified by 172 countries to date. It entered into force in Serbia in 1992.

26 New York Convention, Art. 2, paras. 1 and 2. For affirmative answer see Sharma 2022, 80, for the negative see Michaelson, Jeskie 2019, 130.

27 Serbian Arbitration Act, [Zakon o arbitraži], *Official Gazzete RS*, No. 46/200 was modeled after the UNCITRAL Model Law on International Commercial Arbitration (UNCITRAL Model Law) and provides for a more liberal regime regarding the form of the arbitration agreement than the New York Convention. See Pavić 2010, 12.

28 Bill Gates said that software is a great combination of art and engineering. However, given that art, engineering and software are products of humankind, perfectionism is a utopia. See Michaelson, Jeskie 2019, 114.

29 In the future, it should be defined whether this is contractual or non-contractual liability. See Lefèvre, Delwaide 2019, 233.

Often the parties to the contract will not be from the same country, therefore, the answers to all these questions will depend on the applicable law. However, given the absence of smart contract regulation in many countries, the development of judicial and arbitration case law becomes pivotal. Resolving these unaddressed issues and legal gaps will largely depend on the willingness and intellectual capacity of decision-makers to navigate these novel aspects within the relevant legal frameworks. Taking into account that the parties will most often be located in different jurisdictions and unknown to each other (due to anonymity or pseudonymity), and that the distributed network is not present only in one country, there will be many pressing issues of private international law, which will concern above all, the jurisdiction of the courts or arbitration and applicable law (Scott *et al.* 2022, 2).

#### **4. ARBITRATION AS A FORUM FOR RESOLVING DISPUTES OUT OF SMART CONTRACTS**

Arbitration is a private way of resolving disputes that rests and largely depends on party autonomy. Not only is it up to the parties whether they will resolve the dispute in arbitration, but they have the opportunity to choose the seat of arbitration, the arbitrators, shape the procedure and otherwise use their party autonomy within the limits of the mandatory norms of the arbitration laws of the seat.<sup>30</sup> This adaptability to the needs and preferences of its users is one of arbitration's foremost advantages over court proceedings. In addition to commercial transactions, this way of resolving disputes has been adapted to the specific requirements of various other areas, giving birth to sports arbitration, commodity arbitration,<sup>31</sup> investment arbitration,<sup>32</sup> arbitration concerning intellectual property,

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30 For a detailed analysis of the limitations of party autonomy in international arbitration, see Ferrari, Rosenfeld 2023, 49–80.

31 Within the Belgrade Arbitration Center, there are special rules on settlement of commodity disputes, which establish a faster procedure for settlement of this category of disputes. For more about this see Pavić 2021, 371–375.

32 On the differences between investment and commercial arbitration, see Paunović 2018, 173–189; Jovanović 2018, 345–364.

inter-state arbitration, etc. In recent times, the domain of arbitration has expanded to include all arbitrable disputes,<sup>33</sup> and we are witnessing the birth of special arbitration rules even regarding inheritance disputes.<sup>34</sup>

The attractiveness of arbitration<sup>35</sup> has already been recognized by companies dealing with cryptocurrencies, which most often include arbitration clauses in their contracts.<sup>36</sup> The decentralized nature of cryptocurrencies aligns well with party autonomy and the (relative) freedom of arbitration from interference by national courts (Taylor, Wu, Li 2022). Most of its characteristics, which are also differences in comparison to state courts, correspond to the business world in general. In other words, arbitration is suitable for adaptation to the requirements of any type of dispute that can be resolved privately.

#### **4.1. Features of Arbitration in Relation to the Parties' Demands in Smart Contracts**

Serbia has traditionally struggled with poor contract execution speed, which is a critical concern for users of smart contracts. Efforts have long been ongoing in Serbia and worldwide to promote alternative dispute resolution, particularly arbitration and mediation, aiming to enhance the

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33 Different countries define the arbitrability of the subject matter of the dispute in different ways, and the question of the governing law for objective arbitrability also arises. See Jovanović 2021, 416–418.

34 Thus, the 2021 Vienna Arbitration and Mediation Rules contain supplementary rules for disputes related to inheritance, which apply, for example, when the testator provides so for the disposition of the property after death. See VIAC Arbitration and Mediation Rules 2021, Annex 6.

35 Due to Queen Mary University of London, White & Case (2021, 5), international arbitration is the preferred method of resolving cross-border disputes for 90% of respondents, either on a standalone basis (31%) or in conjunction with alternative dispute resolution (59%).

36 When concluding an arbitration agreement, the parties must consider the seat of arbitration that is friendly to digital assets, as well as conduct extensive analysis of the position of the courts of the countries in which the arbitral award will potentially be enforced. Every suspicion is justified. Thus, the Chinese court annulled the arbitral award made in China where the respondent was required to pay damages in Chinese yuan because he did not transfer the Bitcoins to the claimant. The court cited that the decision is contrary to public policy because it facilitates the circulation of cryptocurrencies and their exchange for money, contrary to Chinese law. See Scott *et al.* 2022, 4. Also, a Greek appellate court refused to enforce an arbitration award set out in Bitcoin citing public policy. See Taylor, Wu, Li (2022).

efficiency of the dispute resolution system (Pavić, Đorđević 2014, 244–245). Users of smart contracts have specific and apparent requirements. Their pursuit of automated contract execution and exclusion of intermediaries highlights their prioritization of speed, efficiency, confidentiality, expertise, and cost-effectiveness. Thus, for arbitration to become the preferred forum for resolving these disputes, it must effectively cater to these needs.

In this sense, arbitration holds an initial advantage over state courts. The length of the proceedings is a serious issue, especially in cases of disputes involving new technologies that might become obsolete before the court proceedings are concluded (Benton 2017). While court proceedings notably are prolonged and sluggish, arbitrations typically involve a more flexible, single-stage process, often governed by simplified delivery procedures and institutional rules that frequently impose deadlines for rendering a final award (Knežević, Pavić 2013, 21). For instance, in line with the expedited procedure<sup>37</sup> or even the “regular” rules of some arbitral institutions,<sup>38</sup> the deadline for reaching a decision is often set at six months from the case management conference or the constitution of the arbitral tribunal. Moreover, arbitration can be conducted through the electronic exchange of submissions, making it entirely paperless. Even if an oral hearing requiring evidence presentation is necessary, virtual (online) arbitrations have become a common practice.<sup>39</sup> Yet, for parties engaging in smart contracts, who prioritize efficiency, waiting for half a year for an award, along with at least a month for the procedural phase before the arbitrator appointment, might seem too lengthy to cease a business relationship and withhold disputed funds. At first glance, this may appear as a drawback of traditional arbitration, however, it is important not to overlook that parties, within their arbitration clause, can stipulate a shorter deadline for rendering an award. Nonetheless, it remains at the discretion of the permanent arbitral

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37 See, for example, Rules of Arbitration of the International Chamber of Commerce (ICC), Appendix VI Expedited Procedure Rules, Art. 4, para. 1.

38 Rules of the Belgrade Arbitration Center (Belgrade Rules) – BAC Rules, Art. 32, para. 1.

39 Serbian law contains no obstacles to the arbitration being completely virtual. Both in Serbia and globally, it is expected that the option of virtual arbitrations will become a regular feature. Pavić, Đorđević 2021, 536. Additionally, the Queen Mary University of London, White & Case (2021, 27) survey shows that there appears to be a growing expectation that virtual hearings will become the default option for procedural hearings.

institution to assess the compliance of such provisions with its rules.<sup>40</sup> This assessment will shed light on the flexibility and adaptability of different arbitration institutions.

Arbitration significantly favors efficiency.<sup>41</sup> Once an arbitral award is rendered, the parties engaged in arbitration can benefit from the facilitated recognition and enforcement of the award across any member state of the New York Convention. Given that parties involved in smart contracts often come from different countries, this advantage elevates the attractiveness of arbitration, especially when considering the prevailing difficulty in international recognition of court decisions.<sup>42</sup> Moreover, arbitrations commonly operate as a single-stage process, usually without the option for an appeal. Dissatisfied parties have recourse against an arbitral award through the far narrower grounds for annulment, a remedy distinct from an appeal against a court decision, which has significantly broader grounds.<sup>43</sup>

Parties engaging in smart contracts often prioritize confidentiality, frequently operating under the principles of anonymity or pseudonymity to safeguard their identity and prevent alarming current or potential business partners or investors about any disputes. Arbitration distinctly upholds confidentiality; the identities of disputing parties remain undisclosed other than to the involved parties, the arbitrator, and the institution's secretariat. In the event of a dispute, parties would be obligated to disclose their identities. However, they can be assured that only a limited circle of individuals will be privy to this information and are required to maintain confidentiality.

In arbitration proceedings, unlike court proceedings, parties hold the autonomy to select the arbitrators who will adjudicate their dispute. Opting for an expert well-versed in the field pertinent to their dispute, comprehending the mechanisms of smart contracts, ensures a legally and

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40 For example, BAC Rules in Art. 3, para. 1 stipulates that the procedure is governed by these Rules, as well as by the rules agreed upon by the parties, except for the rules whose application would be irreconcilable with the provisions of these Rules and the principles of arbitration.

41 For its users, the most valuable feature of international arbitration is the enforceability of awards, followed by avoiding specific legal systems/national courts, flexibility and ability of parties to select arbitrators. See the Queen Mary University of London, White & Case (2018, 7).

42 On the exequatur procedure and certain difficulties in Serbia, see Jovanović, Vučinić 2022, 535-552.

43 Perhaps the most significant difference is that, during setting-aside proceedings, the court does not review a wrongly established factual situation or a wrong application of substantive law, unless the mistakes are so significant that they also constitute a violation of public policy. See Stanivuković 2013, 30.

professionally sound final decision. The opportunity for parties to choose arbitrators based on their reputation serves as a powerful incentive for arbitrators to enhance their expertise in the relevant subject area and stay updated on the constantly evolving trends. This becomes especially significant in fields experiencing continuous and rapid development, pushing boundaries to extents that are currently beyond imagination.

Individuals engaging in contracts with automatic execution of obligations typically aim to eliminate additional intermediary costs. Similarly, in case of a dispute, they prefer a less costly resolution. Despite arbitration having predictable and predefined expenses, its costs cannot be currently deemed an advantage. In fact, it often proves more expensive than going to court, especially when abiding by the rules of the world's most prestigious arbitration institutions. Opting for an institution in Serbia might entail lower costs compared to the rules of renowned institutions in, for example, Paris or Singapore. Although this does not make arbitration notably inexpensive, "you can't have your cake and eat it too," so given its other advantages<sup>44</sup>, participants in international commerce continue to regard it as their primary choice for dispute resolution.

As certain authors recognize (Landbrecht, Wehowsky 2022, 315), studying the past is essential to predicting the future. Classical arbitration has evolved various subtypes and adapted significantly in specific areas, such as commodity disputes<sup>45</sup> (focusing on speed, short deadlines, and reduced costs), aligning well with the process of resolving disputes from smart contracts. Therefore, as a further step toward the integration of arbitration in smart contract disputes, permanent arbitration institutions can create special rules. One notable example is the American Judicial Arbitration and Mediation Services (JAMS), which has introduced the JAMS Smart Contract Clause and Rules.<sup>46</sup> With just 18 articles, these rules establish a swift procedure with short deadlines, catering to the demands of simple, almost binary disputes, seeking quick, cost-effective solutions. This procedure is

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44 For other advantages, see Knežević, Pavić 2013, 18–22.

45 The Belgrade Arbitration Center has special rules for commodity disputes. The Rules of the Belgrade Arbitration Center on Commodity Arbitration (the Belgrade Rules on Commodity Arbitration) were adopted on 26 March 2018, and came into effect on 21 June 2021.

46 JAMS Smart Contract Clause and Rules (DRAFT) – JAMS, <https://www.jamsadr.com/rules-smart-contracts> (last visited 14 November 2023).

conducted electronically, with some deadlines measured in hours<sup>47</sup> and the arbitration award typically rendered within 30 days of appointment.<sup>48</sup> In the case of an objection to the arbitrator's jurisdiction, a decision is made within 72 hours of the objection.<sup>49</sup> According to these rules, proceedings will conclude within a maximum of 45 days<sup>50</sup>, significantly shorter than existing expedited procedure rules.<sup>51</sup>

The emergence of arbitration institutions exclusively dedicated to blockchain and new technologies disputes is a global occurrence. The first institution was established in Japan, followed by another in Poland, marking the first appearance on the European continent (Kasatkina 2022, 147). In addition to the traditional arbitration options, there are also specialized platforms specifically tailored to meet the requirements of these distinct groups of users.

#### **4.2. Traditional Arbitration and Blockchain Arbitration: Alternative or Cooperation?**

A spectrum of online dispute resolution platforms has emerged beyond the traditional arbitration as we know it today. Within the realm of resolving disputes from smart contracts, a key differentiation exists between off-chain solutions (external to the blockchain platform), employing classical arbitration, and on-chain resolution (within the blockchain itself), directly

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47 For example, within 72 hours of the arbitration statement being filed and served, the parties shall appoint an arbitrator, who shall be a JAMS panelist. See JAMS, Art. 4, para. 1, it. 2. Any party may request clarification of the decision within 120 hours of issuance. See JAMS, Art. 13, para. 2.

48 JAMS, Art. 13, para. 1.

49 JAMS, Art. 7, para. 2.

50 The short deadlines are not a significant concern in low-value and low-complexity disputes, as detailed in the later part of the paper. Furthermore, the appointed arbitrators might not be senior professionals. Considering the rapid resolution expectations under these rules, arbitrators will largely handle cases with extremely tight deadlines, giving young arbitrators an opportunity to gain experience in these simpler cases.

51 The Permanent Arbitration (PA) at the Chamber of Commerce and Industry of Serbia prescribes in its Rules a 6-month deadline for reaching an award. Nevertheless, Art. 61, para. 1 of the Rules of PA, on the other hand, provides that the sole arbitrator will make the arbitral award within 15 days of the day when the hearing was held or within 15 days of the day when the conditions for making the award without holding a hearing were fulfilled. Provisions on the extension of the deadline are not provided. See critics in Đorđević 2021, 482–483.

addressing disputes within the blockchain network. Perhaps the most successful example of the latter<sup>52</sup> is Kleros<sup>53</sup>, an online platform based on the Ethereum blockchain, which uses cryptocurrencies and game theory to resolve disputes. Parties submit their case and evidence to the platform. The dispute is decided by the so-called jurors who play the role of arbitrators, while the final decision is taken by the majority of votes. Jurors invest their cryptocurrencies in order to participate in the decision making, and further developments depend on whether they voted in accordance with the majority. If they did not – they lose part of the invested funds, if they did – they earn part of the funds of those who lost, with additional compensation paid by the parties.

Given that jurors cannot communicate with each other, they must make a decision based on what they think other conscientious and well-informed jurors will decide. In game theory,<sup>54</sup> this approach is known as a “focal point” or “Schelling point”, which represents the result that well-informed decision makers are most likely to reach as a consensus without mutual communication.

The functioning of Kleros as a blockchain arbitration is interesting, however, it raises the question of whether the decision made in that procedure can be enforced under the rules of the New York Convention. The main concern is whether procedural due process has been respected, which is a condition for the recognition of an arbitral award under the Convention. The selection of arbitrators, conduct of the proceedings, engagement in the dispute, and decision-making should align with the parties’ right to equal treatment and fairness. This includes the opportunity for both parties to present their perspectives, evidence, and responses to the actions and

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52 In this paper, we will pay attention to this platform because, as stated, Kleros is currently the most advanced project (Sharma 2022, 100), and furthermore, within this platform, the first ever arbitral award decision was made that was indirectly enforced by a Mexican court (more about that below).

53 In Kleros White Paper is stated: “Existing dispute resolution technologies are too slow, too expensive and too unreliable for a decentralized global economy operating in real time. A fast, inexpensive, transparent, reliable and decentralized dispute resolution mechanism that renders ultimate judgments about the enforceability of smart contracts is a key institution for the blockchain era.” See Lesaege, Ast, George 2019, 1.

54 Legal scholars have already explored game theory, e.g., in the context of international law and the World Trade Organization. See Cvetković 2018, 90–94.



propositions of the opposing party.<sup>55</sup> Moreover, the award must be made by arbitrators who are impartial and independent,<sup>56</sup> otherwise the parties have the right to challenge them during proceedings.<sup>57</sup>

Considering that the parties involved in proceedings before Kleros are unaware of the jurors' identities, they do not have the opportunity to fully respond to the evidence of the other party and the jurors in the proceedings potentially have a financial bias (with their compensation or loss of invested funds dependent on their alignment with the winning or losing party), a question arises whether the Kleros award can be recognized and enforced under the New York Convention due to the application of Art. 5 para. 1, its b) and d), and Art. 5 para. 2 it. b) (public policy). Furthermore, in order for a decision to be considered an arbitral award, it is important that a fair and impartial procedure is ensured during the proceedings and that the decision is based on law or principles of equity.<sup>58</sup>

We believe that the concerns raised in the literature and in practice are exaggerated. The New York Convention outlines various obstacles to recognizing a foreign arbitral award, categorizing them into groups that a court reviews only upon a party's objection and those it monitors *ex officio*. In the Kleros process, if Art. 5, para. 1, it. b) and d) are violated, we regard that the court may not refuse recognition of such an award. This is because these conditions are considered only upon a party's objection, and the party accepted this dispute resolution method by submitting it to Kleros, thereby

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55 Serbian Arbitration Act, Art. 33, paras. 1 and 2, UNCITRAL Model Law, Art. 18. The party must have the right to be heard and to present its evidence at the oral hearing. The growth of opportunities for virtual arbitrations allows the oral hearing to be held without tremendous costs and time, and to be fully in line with the requirements of expedited procedure. See Uff 2021.

56 Serbian Arbitration Act, Art. 19, para. 3.

57 UNCITRAL Model Law, Art. 12, Serbian Arbitration Act, Art. 23.

58 In 2004, the German Supreme Court made a decision exemplifying this point. The case involved a member of a dog breeders association who initiated proceedings before an "arbitral tribunal", established based on the association's bylaws. Upon losing the case, the applicant challenged the "arbitral award" through set-aside proceedings. The Supreme Court concluded that the dispute resolution body did not meet the criteria of a genuine arbitral tribunal. The court reasoned that the tribunal was designed to resolve internal administrative disputes among members of the association's bodies. The association's bylaws lacked provisions for ensuring a fair and impartial procedure, and did not mandate decisions based on law or equitable principles. Furthermore, the parties did not have an equal opportunity to participate in forming the arbitral tribunal. Due to these reasons, the court determined that the decision could not be considered an arbitral award. See Ferrari, Rosenfeld 2023, 61.

precluding procedural challenges to the award. However, if the deficiency infringes upon the public policy of the state of recognition, the award's recognition must be refused.<sup>59</sup>

It is important to recognize that blockchain arbitration, at present, is suited for low-value and relatively straightforward disputes. Consider an example where a Serbian entrepreneur hires a freelancer from Argentina to build a website for a small business at a cost of 3,000 euros. If the entrepreneur is dissatisfied and seeks redress, turning to traditional legal proceedings presents challenges. The process begins with proceedings before Kleros, during which the jurors will have three choices: to issue a refund of 3,000 euros, to allow freelancer to retain 3,000 euros, or to provide an extended deadline for completing the website.<sup>60</sup> Engaging in court proceeding in Argentina for a dispute of such small value would be impractical and costly. Even opting for arbitration in Serbia would likely incur expenses close to the value of the dispute.<sup>61</sup> Consequently, the entrepreneur might opt for a more informal process, such as blockchain arbitration through Kleros, in order to seek “rough” justice without the procedural assurances guaranteed in court proceedings or traditional arbitration. This shift reflects the choice of efficiency over the intricacies of procedural fairness and equal treatment, often valued in traditional legal frameworks. The question arises regarding the extent to which parties can waive fundamental procedural guarantees and which ones they can or cannot forego. The concept of public policy, as the baseline checked *ex officio* by the court, will likely set the minimum threshold. However, as the values and complexities of these disputes grow, participants may become less inclined to rely solely on methods that do not ensure the comprehensive safeguards of due process, which have established through the centuries, ensuring fundamental principles of equitable treatment, a fair

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59 It is worth mentioning, however, that in arbitration laws, such as the Serbian one, provisions concerning the equality of the parties in the proceedings and the right to respond to the allegations and evidence of the opposing party, as well as the rule on an odd number of arbitrators and their independence and impartiality, can be considered imperative. Hence, any gross violation of these provisions in the Kleros procedure could be deemed a violation of Serbian public policy.

60 A similar example is used in the Kleros White Paper. See Lesaege, Ast, George 2019, 2–3.

61 Thus, the registration fee, administrative costs and fee of the sole arbitrator before the Belgrade Arbitration Center would amount to a total of 2,700 euros in this case. See Belgrade Rules, Annexes 1, Arts. 2–4.

hearing,<sup>62</sup> and independent and impartial decision-makers. This will lead to the (re)emergence of traditional arbitration as a preferred forum for such disputes.

However, the legal challenges of blockchain arbitrations do not stop there. In addition to the abovementioned, many more questions are raised. Can an on-chain award even be considered an arbitral award within the meaning of the New York Convention and national arbitration laws?<sup>63</sup> Relatedly, does it have a *res judicata* effect preventing the initiation of off-chain arbitration or court proceedings? Does the arbitrator have to give the reasons for the decision? Is the arbitrator obliged to comply with the arbitration laws and if so, which ones?<sup>64</sup> Can national courts enforce an on-chain award based on the New York Convention? Can the award be set aside under national arbitration laws? There are many more questions, and for now very few definitive answers, with a fertile ground for legal science and practice to reach them.<sup>65</sup>

Beyond the essential considerations of due process, an additional issue surfaces in blockchain arbitration – including within the Kleros framework. The lack of reasoned decisions poses a significant challenge since parties have no guidance when formulating their arguments. This absence leads to an increase in resource demand in decentralized adjudication over time. The absence of previous case law, provided by traditional courts and tribunals for traditional contracts, means that each dispute must be argued from scratch, with no predictions of how these disputes will be assessed by decision-makers. Regrettably, this leads to increased business costs, contrary to the intended cost reduction through digitalization (Sklaroff 2017, 301–302).

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62 The principle of equal treatment of parties has a rich history and is associated with the right to a fair trial. The principle has its roots in the *Magna Carta Libertatum* from 1215. Today, Art. 18 of the UNCITRAL Model Law is considered as the Magna Carta of arbitral procedure. See Scherer, Prasad, Prokic 2023, 1128–1130.

63 On the conditions in Serbian law, see Stanivuković 2022, 43–44.

64 These two questions are also raised in Scott *et al.* 2022, 9.

65 Moreover, it is questionable whether the prevailing party, having already benefited financially from the arbitration award, would willingly return the gains if the court subsequently annulled the award. If the party resists, a new dispute might have to be initiated, likely in court, undermining the speed and efficiency of dispute resolution. This is a critical question, since arbitrators could potentially place their award on the blockchain, enabling automatic execution of the award through a smart contract mechanism as soon as it is posted and verified on the chain, provided the parties agreed to such terms in their smart contract and deposited the funds or voluntarily provided a cryptographic key.

It remains to be determined whether classical and blockchain arbitration act as alternatives in competition or as cooperative mechanisms. It has been recognized that they serve distinct purposes and address different kinds of disputes, which suggests that they are not in competition. Furthermore, they have the potential to complement each other and enhance the dispute resolution landscape through collaboration. Within this collaborative mood, we see two possibilities for interaction. The first possibility is for on-chain arbitration to function as a preliminary dispute resolution mechanism before engaging in “real” arbitration proceedings. This concept is reminiscent of the recognized multi-tier arbitration clauses. For example, in construction contracts using FIDIC conditions, the process involving the Dispute Avoidance/Adjudication Board (DAAB) acts as an initial phase before progressing to final arbitration; traditional arbitration then provides the conclusive determination of rights and obligations, which can be enforced through state intervention.

Another solution could be the one that has already appeared in practice and was decided by the Mexican court (albeit in the context of domestic arbitration). The claimant initiated proceedings before an arbitrator in classical arbitration, while the arbitration clause stipulated that the arbitrator would refer the parties to settlement before Kleros, through a procedural order. Three jurors were appointed in the manner previously described and rendered a decision in favor of the claimant. Subsequently, the arbitrator incorporated the Kleros decision into the arbitral award and it was enforced before the national court as a domestic arbitral award.<sup>66</sup> Party autonomy is the primary postulate in arbitration and implies that the parties can create the procedure and the way of decision-making up to the limits of the imperative norms of the seat of arbitration. Unquestionably, arbitrators must be careful about the eligibility of the decision to be recognized in the country where the decision is going to be executed, and it remains to be seen how national courts will accept the incorporation of blockchain arbitral awards into the classic arbitral awards in the recognition process. At first glance and with a high level of abstraction, we see no reason why such awards would not have a bright international future.

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<sup>66</sup> For additional details about the case, see Carrera 2022, 16–18.

### 4.3. The Most Suitable Type of Arbitration in Relation to the Value and Complexity of Smart Contract Disputes

As observed so far, blockchain arbitration is not an alternative to traditional arbitration. Both mechanisms should mutually support their legitimacy: the former to address low-value and low-complexity disputes, and the latter to ensure the certain enforcement of the former through its established mechanisms. Smart contract disputes vary in value and complexity. Also, they stem from either hybrid or fully coded smart contracts. Presently, not all types of arbitration are universally appropriate for these disputes. Hence, in the context of this study, we offer a tabular presentation categorizing different dispute groups according to their value and complexity, delineating the most suitable methods for their resolution through arbitration, as a more appropriate means of dispute resolution in comparison to the court system.

<b>Dispute Group No.</b>	<b>Type of the dispute in relation of value and complexity</b>	<b>The most suitable type of arbitration for smart contract disputes</b>
<b>1</b>	High value and high complexity	Classic arbitration without a stipulated deadline for making an award; classic arbitration with a deadline for making an award of at least 6 months
<b>2</b>	High value and low complexity	Classic arbitration with a deadline for making an award of up to 6 months; special rules of arbitral institutions for resolving smart contract disputes
	Low value and high complexity	
<b>3</b>	Low value and low complexity	Special rules of arbitral institutions for resolving smart contract disputes; blockchain arbitration (on-chain)

Table 1.  
The most suitable types of arbitration in relation to the value and complexity of smart contract disputes

The determination of whether a dispute is of high or low value is indeed subjective and may vary significantly based on the perspective of the involved parties. Acknowledging this subjectivity, we omitted the classification of disputes of medium value in the initial grouping, although they could certainly fall within the second category.

In cases where disputes hold substantial value – potentially impacting the businesses of the involved parties – it is unlikely that they would forgo the procedural safeguards developed over centuries, the expertise of arbitrators, and the need for meticulous resolution of the disputes. The maximum that the parties might agree to is setting deadlines for rendering an award, but without excessively speeding up the decision-making process.

In the context of disputes that fall within the second group, parties are unlikely to turn to blockchain arbitration. This reluctance may stem from the substantial value involved, where they seek equivalent procedural assurances and expertise, as is the case with disputes in the first group. Alternatively, the complexity of these disputes might require professional arbitrators instead of unknown decision-makers relying on game theory or similar methodologies. However, when dealing with disputes of either low complexity or value, the speed of resolution becomes crucial.

Finally, disputes from the third group are absolutely suitable to be resolved quickly at low cost, with short deadlines, in order to resolve the unwanted misunderstanding as soon as possible. It is worth noting that the suitability of fully coded smart contracts for complex disputes is also a subject of consideration. As mentioned previously, for contracts demanding flexibility and containing vague provisions, such as good faith, the recommended choice should be the hybrid contract. Fully coded contracts, referred to as smart contracts in the true sense, find optimal use in situations with minimal uncertainty or where monitoring performance would otherwise be excessively expensive, particularly in routine transactions.<sup>67</sup> As a significant portion of these transactions involves low-value transactions, the role of the third category of disputes holds immense significance within this domain.

## 5. CONCLUSIONS

New technologies are reshaping the landscape of business contracting and dispute resolution, potentially revolutionizing these spheres. Among the dispute resolution methods, arbitration stands out as having the highest potential to evolve and meet the demands of users engaging with smart contracts and blockchain technology, serving as an alternative to traditional court proceedings. Despite its numerous advantages, arbitration must

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<sup>67</sup> Sklaroff 2017, 302.

continually adjust and cater to the ever-evolving needs of its users in order to prevent users from seeking an alternative to the already established alternative.

The adaptability of arbitration has already given rise to special institutions or institutional rules for the resolution of disputes arising from smart contracts. There are also special types – blockchain arbitrations, whose enforceability according to the New York Convention is questionable, the issue being whether these platforms can be used under the notion of “arbitration”. Either way, they can be a significant factor in resolving disputes that have so far been off the radar of arbitration and courts. In addition, traditional and blockchain arbitration should cooperate and take advantage of each other. On this occasion, we analyzed which type of arbitration is the most adequate for dispute resolution, according to their value and complexity. This shows that the interests of all the variations of traditional arbitration do not coincide with blockchain arbitration in any segment.

It has been proven that smart contracts and blockchain technology will not prevent disputes – in fact we are not even certain that they will reduce them. Issues that will continue to arise are related to classical contract law, only in a new guise, as well as some new ones. However, this will lead to the need for adjustments to arbitration as we know it today. Apart from speed, efficiency, lower costs and arbitrator specialization, this will increase the need for experts who are well versed in programming, but will not cause arbitrators to stop being lawyers.

Beyond the realm of arbitration, it is up to the entire legal system to work on accepting the new institute with great potential. It is desirable for Serbia to establish itself as a jurisdiction that is supportive and accommodating of smart contracts, in order to be competitive in the digital age. When entering into arbitration agreements, parties should be diligent in selecting a smart contract-friendly jurisdiction as the seat of the arbitration. This becomes even more critical when the contract concerns cryptocurrencies, necessitating a jurisdiction that is favorable for this domain. The careful selection of the arbitration seat and the applicable law in such cases becomes essential to ensure the maximum certainty that the arbitration award can be enforced.

The title of this paper may suggest that the subject is futuristic, however, the “future” it denotes is already upon us. Adjustments to new business practices, contract conclusions, dispute resolutions, and the specialization of arbitrators in these evolving disputes cannot happen soon enough. Gašo Knežević (2006, 123) likened the law to Sleeping Beauty, expressing the view that due to its conservative nature, it tends to lag chronically behind societal changes. Presently, there is an opportunity to look ahead. This forward-

looking perspective will distinguish market participants who leverage the transformations brought by new technologies to their advantage, over those who might miss the opportunities or fail to adapt. This inevitable division arises because not all jurisdictions remain dormant. Lawyers from some countries are actively working to position their jurisdictions as favorable for smart contracts, addressing both the procedural and substantive aspects. Serbia's forthcoming activities in this technological revolution remain uncertain. Will it settle for the major players' table scraps, or will it take advantage of the momentum to claim a seat at that table? Given Serbia's thriving IT climate made by numerous companies, including those dealing with smart contracts, the author remains hopeful that Serbia's future will shine brightly in the midst of the clash between dormant law and tireless technology.

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## **ARBITRAŽNO REŠAVANJE SPOROVA IZ PAMETNIH UGOVORA – POGLED U BUDUĆNOST**

*Blokčejn tehnologija polako ali sigurno ulazi u sferu prava, što utiče na nastanak novih instituta. Jedan od najaktuelnijih su pametni ugovori sa glavnom karakteristikom automatskog izvršenja ugovornih obaveza. Tehnološki stručnjaci smatraju da upotreba pametnih ugovora doprinosi nestanku sporova. Autor u radu nastoji da dokaže da ta tvrdnja nije u skladu sa realnošću analizom sporova koji će se javljati u ovoj oblasti, i onih klasičnih iz ugovornog prava i potpuno novih koji će nastati zbog specifičnosti novog instituta. U centralnom delu rada se ispituje da li je arbitraža idealan forum za rešavanje tih sporova. Razmatra se odnos između klasične i blokčejn arbitraže sa rezultatom pregleda sporova koji će se rešavati na do sada poznat način te onih koji su podobni za novonastali mehanizam. Autor daje pozitivan odgovor na to pitanje, smatrajući da će upravo prilagodljivost i otvorenost arbitraže za promene biti njena dominantna prednost i u toj grupi sporova.*

**Ključne reči:** *Pametni ugovori. – Blokčejn tehnologija. – Međunarodna arbitraža. – Blokčejn arbitraža. – Alternativno rešavanje sporova.*

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## 1. UVODNE NAPOMENE

Za većinu pravnika, i kod nas i u svetu, tema ovog rada se i dalje nalazi u domenu naučne fantastike. Kodirani, samoizvršujući ugovori kojima se daje epitet „pametni“, za koji se smatralo da je rezervisan za ljudsku vrstu, a koji uz to dovode do sporova koji se mogu rešavati privatno, a ne pred nacionalnim sudovima – sve to deluje kao pogled u veoma daleku budućnost. Međutim, realnost ne dozvoljava, štaviše opovrgava bilo kakav sličan stav.

Da nije reč o temi 22. veka, pokazuje nam to što pametni ugovori (*smart contracts*) već vrše revoluciju poslovanja u različitim granama privrede. Predviđa se da će se pojedine industrije potpuno promeniti njihovom implementacijom, koja se već u pojedinim segmentima i dešava.<sup>1</sup> Oni se zasnivaju na tzv. blokčejn (*blockchain*) tehnologiji, odnosno na tehnologiji distribuirane knjige (*distributed ledger technology – DLT*), za koju se smatra da je najveće otkriće nakon interneta (Werbach 2018, 489) i da će promeniti poslovni svet predstojećih decenija (Tapscott, Tapscott 2016). Blokčejn tehnologija je postala relevantna kao rezultat uništenog poverenja u klasične finansijske institucije nakon finansijske krize 2008. godine i želje da se sa centralizovanih institucija pređe na necentralizovano tržište kriptovaluta. Međutim, ta tehnologija<sup>2</sup> ima daleko širu upotrebu od digitalnog novca<sup>3</sup>, a jedna od njih je upravo to što pametni ugovori počivaju na njoj. Postoje mišljenja (Lefèvre, Delwaide 2019, 226) da njen stvarni potencijal nije u kriptovalutama, kao najčešće isticanom pojmu, već upravo u pametnim ugovorima.

Kao jedna od osnovnih prednosti pametnih ugovora navodi se da oni otklanjaju razloge nastanka sporova samim unošenjem izvesnosti u izvršenje ugovora te da će ukloniti potrebu za bilo kakvim mehanizmima rešavanja sporova. U radu ćemo nastojati da pokažemo da te tvrdnje nisu u skladu sa realnošću, tako što ćemo, nakon kratkog predstavljanja instituta pametnih ugovora<sup>4</sup>, analizirati one klasične ugovorne sporove koji će se javljati i u budućnosti i one nove koji će biti svojstveni samo sporovima

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1 Jedan od najboljih primera industije koja će se značajno promeniti razvojem pametnih ugovora jeste industrija osiguranja, u kojoj se uvode novi proizvodi i usluge, ali gde pametni ugovori mogu služiti i za lakše otkrivanje prevara i smanjenje troškova postojećih usluga osiguravajućih kuća. Vid. Đurović 2020, 312.

2 O pravnom okviru blokčejna i *DLT* tehnologije vid. Cvetković 2020, 134–137.

3 Kriptovalute su samo jedan segment digitalne imovine.

4 Ovo posebno imajući u vidu da je reč o novom institutu u našoj i stranoj teoriji i praksi.

iz pametnih ugovora. Na osnovu karakteristika pametnih ugovora i sporova koji će povodom njih u budućnosti nastajati, ispitaćemo da li je arbitraža sa svojim obeležjima privatnog načina rešavanja sporova idealan forum za njihovo rešavanje. U tom segmentu će biti potrebno razmotriti odnos između klasične i blokčejn arbitraže i odrediti koji sporovi treba da se rešavaju na do sada poznati način, a koji su podobni za novonastali mehanizam. Autor zaključuje da je trenutno blokčejn arbitraža pogodna samo za sporove male vrednosti i male složenosti, zbog različitih faktora koji su analizirani. Shodno tome, tradicionalna arbitraža zadržava svoj status najpogodnijeg foruma. Ipak, postoji potreba da se pokaže jedna od njenih najvećih prednosti – fleksibilnost, kako bi bila primarni forum za rešavanje te kategorije sporova.

## 2. PAMETNI UGOVORI – OTVARANJE NOVIH VIDIKA

Prilikom predstavljanja instituta pametnih ugovora, neophodno je razumeti tehnologiju na kojoj oni počivaju, koja predstavlja osnov njihovog funkcionisanja. Tehnologija distribuirane knjige predstavlja digitalni zapis transakcija koji je repliciran, validiran i ažuriran simultano u celoj mreži učesnika, bilo da su oni poznati, pod pseudonimom ili potpuno anonimni (Athanassiou 2018, 105). Informacije koje se čuvaju u distribuiranim knjigama tiču se razmene nekih vrednosti kao što su, primera radi, kriptovalute, stvarna imovina i intelektualna imovina. Za sve to nije potreban nijedan centralni autoritet – tačnost svih informacija garantuju kopije distribuirane knjige koju imaju svi učesnici (Lefèvre, Delwaide 2019, 255), a koja je nepromenljiva. Distribuirane knjige se često zasnivaju na blokčejn tehnologiji, tako da se neretko ta dva termina koriste kao sinonimi. Na njima se podaci čuvaju na seriji blokova. Kada blokovi budu verifikovani konsenzusom na celoj mreži, bivaju trajno dodati u lanac (*chain*) i postaju međusobno povezani sa drugim blokovima (Lefèvre, Delwaide 2019, 226). Osnovne prednosti blokčejn tehnologije su decentralizovanost i nepromenljivost – ništa ne zavisi od nekog autoriteta niti postoji opasnost da će nešto u lancu biti promenjeno i izloženo manipulaciji.

Pojam pametnih ugovora prvi put krajem prošlog veka uvodi informatičar Nik Sabo (*Nick Szabo*), koji ih definiše kao „kompjuterizovan protokol transakcija koji izvršava uslove ugovora“. Da bi objasnio njihovu suštinu, „kreator“ ih poredi sa automatom za grickalice i pića (Szabo 2018). Naime, kada kupac izabere željeni artikal i unese traženi iznos u automat, mašina počinje sama da izvršava zahtev izbacivanjem traženog. Između kupca i

„automata“ zaključen je ugovor samim odabirom proizvoda i ubacivanjem traženog iznosa (cena je unapred poznata, a stvar postaje poznata odabirom kupca, čime su ispunjeni elementi ugovora o prodaji<sup>5</sup>). Kupac je svojim radnjama prihvatio ponudu i izvršio svoj deo ugovorne obaveze te ostaje još samo da automat izvrši svoju, koja se sastoji u izbacivanju traženog artikla. Od momenta kada novac dospe u mašinu, više nije potrebna nikakva ljudska intervencija kako bi se ugovor izvršio. Automat, dakle, *samostalno* i *automatski izvršava* ugovornu obavezu, a to je upravo i suština pametnih ugovora. U tom svetlu, Sabo te automate naziva „primitivnim precima pametnih ugovora“.

Pametni ugovor može biti definisan kao kompjuterski kod<sup>6</sup> koji je kreiran da automatski izvrši ugovorne obaveze nakon nastupanja određenog događaja, odnosno kao sporazum stranaka čije je izvršenje automatizovano kompjuterskim programom.<sup>7</sup> Odkoro se Srbija ubraja u krug zemalja koje su zakonskim putem uredile pravne aspekte digitalne imovine.<sup>8</sup> Značaj Zakona o digitalnoj imovini<sup>9</sup> ogleda se i u tome što srpsko pravo dobija prvu definiciju pametnog ugovora. Pametan ugovor se određuje kao kompjuterski program ili protokol zasnovan na tehnologiji distribuirane baze podataka ili sličnim tehnologijama, koji, u celini ili delimično, automatski izvršava, kontroliše ili dokumentuje pravno relevantne događaje i radnje u skladu sa već zaključenim ugovorom, pri čemu taj ugovor može biti zaključen elektronski, putem tog programa ili protokola.<sup>10</sup> Međutim, razvile su se različite vrste

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5 Vid. Zakon o obligacionim odnosima – ZOO, *Službeni list SFRJ* 29/78, 39/85, 45/89 – odluka USJ i 57/89, *Službeni list SRJ* 31/93, *Službeni list SCG* 1/2003 – Ustavna povelja i *Službeni glasnik RS* 18/2020. čl. 458–466.

6 U pitanju je pretvaranje ugovornih odredaba u kod, kao jednog aspekta algoritmiranja prava. Vid. više o toj pojavi i o tzv. *LegalTech* u Cvetković 2023, 316–326.

7 Definicije izvedene iz Durovic, Janssen 2019, 4.

8 Srbija je u vreme donošenja Zakona o digitalnoj imovini bila među malim brojem zemalja koje su regulisale tu materiju. Danas su čak i zemlje koje se često nazivaju *offshore* jurisdikcijama, poput Britanskih Devičanskih Ostrva, usvojile regulativu o tržištu digitalne imovine, zbog čega su brojne kriptokompanije prešle u druge jurisdikcije bez odgovarajuće regulative.

9 Zakon o digitalnoj imovini, *Službeni glasnik RS* 153/2020.

10 Zakon o digitalnoj imovini, čl. 2 st. 1 tač. 39.



tih ugovora, koji mogu biti više ili manje „pametni“: 1) klasičan ugovor sa automatskim izvršenjem kroz kompjuterski kod, 2) hibridni ugovor<sup>11</sup> i 3) ugovor sastavljen isključivo na kompjuterskom kodu.<sup>12</sup>

Prva dva tipa nužno zahtevaju i zaključenje klasičnog ugovora, pa ih pojedini autori nazivaju pametnim *pravnim* ugovorima (*smart legal contracts*)<sup>13</sup>, dok bi treći tip bio pametni ugovor u pravom smislu tog izraza, s obzirom na to da je u celini u formi koda, bez pisanog traga u odvojenom dokumentu. Imajući u vidu da pametni ugovori funkcionišu po principu „Ako to..., onda to...“ (*If that... Then that...*), oni su binarni, te bi poslednji tip trenutno mogao da se koristi samo za prostije transakcije, u kojima se plaćanja mogu izvršiti automatski. Tom krugu pripadaju jednostavne potrošačke transakcije (isplatiti kupovnu cenu prodavcu kada je kupac primio paket), plaćanje kompenzacije osiguranim putnicima u slučaju otkazivanja ili kašnjenja leta, transakcije koje uključuju kriptovalute i digitalne tokene (gde se celokupna transakcija odvija u digitalnom svetu). U tim oblastima pametni ugovori omogućavaju veliku efikasnost, snižavajući interne administrativne troškove smanjenjem fizičkih dokumenata, uklanjajući potrebu za eksternom verifikacijom i posrednicima (Wiegandt 2022, 679). Navodi se da u ovom trenutku pametni ugovori nisu najbolje rešenje za veoma kompleksne trgovinske transakcije, kao što su one na kojima određena prava i obaveze ugovornih strana zavise od apstraktnih koncepata kao što su dobra vera, dužna pažnja, odnosno u dugoročnim poslovnim angažmanima (Wiegandt 2022, 679). Međutim, autor smatra da se to odnosi na treći tip pametnih ugovora, onih koji su u celini izraženi u kompjuterskom kodu. Hibridni ugovori su u stanju da binarni deo prava i obaveza izraze kroz kod, a da apstraktne koncepte i ugovorne odredbe, kao što su klauzula o merodavnom pravu i o rešavanju sporova, predvide u klasičnom ugovoru.

Što se tiče svih pitanja koja proizlaze iz pametnih ugovora koji su isključivo izraženi u kodeksu, kao što su nadležnost, merodavno pravo, tumačenje i odgovornost ugovornih strana, primarno pitanje je da li strane uopšte mogu da izraze volju isključivo putem koda kako bi stvorile pravno obavezujući ugovor. Prihvatamo mišljenje da je jedan od osnovnih principa ugovornog

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11 U *Law Commission* (2021, 6) hibridni pametni ugovor se definiše kao sporazum u kojem su pojedine obaveze određene na prirodnom jeziku, a druge kodirane u okviru kompjuterskog programa. Izvršenje nekih ili svih ugovornih obaveza je automatizovano preko koda. Takođe, postoji mogućnost da su uslovi hibridnog ugovora prvenstveno napisani putem koda sa nekoliko odredaba na prirodnom jeziku.

12 Podelu vid. u *Law Commission* 2021, 6.

13 Koristi se često i engleski termin *Ricardian contract*.

prava većine država sloboda izbora<sup>14</sup>, koja ugovornim stranama omogućava da izaberu bilo koju formu za svoj ugovorni odnos. Taj princip doprinosi da pametni ugovori budu pravno obavezujući i izvršivi.<sup>15</sup> Štaviše, navodi se da nema potrebe da se menja postojeće ugovorno pravo kako bi se prilagodilo pametnim ugovorima.<sup>16</sup> Postojeći principi i doktrine su dovoljno fleksibilni da se mogu primeniti i na pametne ugovore.

### 3. BUDUĆI SPOROVI U VEZI SA PAMETNIM UGOVORIMA

Često se navodi da je prednost pametnih ugovora to što, izvesnošću izvršenja ugovornih obaveza, eliminišu razloge nastanka sporova – ukoliko izvršenje ne zavisi od ljudskog faktora, nestaje i potreba za parničanjem. Međutim, da li je baš tako?

Ne samo da će pametni ugovori pokrenuti sporove sa novim pravnim pitanjima, nego čak neće omogućiti nestanak klasičnih sporova poznatih u ugovornom pravu. Kao i u drugim formama ugovora, stranke mogu tražiti poništaj pametnog ugovora zbog mana volje ili zato što je izvršenje ugovora u suprotnosti sa javnim poretkom (Lefèvre, Delwaide 2019, 231). Srpskim Zakonom o obligacionim odnosima (u daljem tekstu ZOO) predviđeno je da su strane u obligacionim odnosima slobodne, u granicama prinudnih propisa, javnog poretka i dobrih običaja, da svoje odnose uredi po svojoj volji<sup>17</sup>, a to se odnosi i na situaciju kada svoju volju izrazi u pametnom ugovoru. Stranke se mogu pozivati i na ostale klasične institute ugovornog prava kao što je nemogućnost ispunjenja, na primer, zato što su uvedene sankcije neprijateljskoj državi, te je zabranjena trgovina sa njom.

Klasična pitanja ugovornog prava, kao što su izmena ili raskid ugovora, dobijaju novo ruho i time zadaju nove probleme. Međutim, ti „novi problemi“ se mogu lako uporediti sa onima koji nastaju u radu automata za grickalice i pića. Kao što kupac može da promeni mišljenje nakon što je već

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14 Za srpsko pravo vid. ZOO, čl. 10 i 67(1). Za englesko pravo vid. Durovic, Lech 76.

15 Durovic i Lech smatraju (2019, 92–93) da bi prema važećem engleskom pravu komercijalne transakcije koje se sprovedu putem pametnih ugovora trebalo da budu izvršive pred sudovima ako ispunjavaju postojeće kriterijume za izvršenje ugovora. Čini se da nisu potrebne nikakve izmene engleskog zakona da bi se obezbedila izvršivost pametnih ugovora. Njih treba posmatrati kao jedan odraz slobode ugovaranja. Za tipove ugovora koji zahtevaju pisanu formu, pametni ugovori koji su potpuno zasnovani na kompjuterskom kodu mogu ispuniti taj zahtev.

16 O razmatranjima u odnosu na američko pravo vid. Raskin 2017 306, 321–329.

17 ZOO, čl. 10.

ubacio novac u automat ili mašina može da propusti da izvrši prestaciju iz različitih razloga, slični problemi mogu da nastanu i prilikom automatskog izvršenja pametnih ugovora (Sherata 2018, 6). Pametni ugovori, kao i njihovi tradicionalni oponenti, mogu se nakon izvršenja ispostaviti kao ništavi. Tada će biti potrebno da se pokrene spor u vezi sa povraćajem novca te će češći sporovi biti u vezi sa neosnovanim obogaćenjem<sup>18</sup> nego u vezi sa neizvršenjem ugovorne obaveze.

Prema svojoj prirodi, pametni ugovori su nefleksibilni<sup>19</sup> i nepromenjivi, te niko ne može da zaustavi izvršenje ugovora onda kada softver prepozna da je nastupio događaj koji aktivira izvršenje obaveze. To je istovremeno i prednost i mana pametnog ugovora. Izvršenje obaveze ne zavisi od volje ugovorne strane. Tako, ukoliko jedno lice želi da kupi automobil od drugog lica putem pametnog ugovora, pametni ugovor će automatski prebaciti novac sa računa kupca na račun prodavca (u momentu koji bude smatran kao relevantan za izvršenje obaveze prodavca, na primer, kada automobil pređe granicu države kupca)<sup>20</sup> i automatski promeniti titulara prava svojine. Automatski način izvršenja ne menja činjenicu da automobil može imati različite materijalne nedostatke, zbog kojih kupac smatra da prodavac nije izvršio svoju obavezu adekvatno. S tim u vezi, pametni ugovori će smanjiti broj sporova zbog neisplate ugovorne cene, a znatno povećati broj sporova<sup>21</sup> povodom prava kupca i odgovornosti prodavca usled isporuke robe sa materijalnim nedostacima.<sup>22</sup>

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18 Više o neosnovanom obogaćenju u odnosu na ugovor vid. Lutman 2020, 111–113.

19 Ta nefleksibilnost zapravo stvara mnoštvo novih i dodatnih troškova tokom pregovora, izrade i sprovođenja pametnog ugovora. Shodno tome, na stranama je da odluče da li im odgovara da zaključe pametni ili papirni ugovor. Jedan od primera gde pametni ugovori povećavaju troškove vid. u Sklaroff 2017, 292–293.

20 O spoljnim događajima pametni ugovor obaveštava orakl (*oracle*), eksterni izvor podataka koji šalje informacije kompjuterskom programu. Na primer, ukoliko je osiguranje od kašnjenja ili otkazivanja leta u formi pametnog ugovora, orakl prenosi informaciju pametnom ugovoru. Vid. Law Commission 2021, 21.

21 Razmatrani problem može biti ublažen, na primer, omogućavanjem opcije da strana koja je nezadovoljna izvršenjem obligacije druge strane dâ nalog da se automatski izvrši povraćaj sredstava, te da se aktivira klauzula o rešavanju sporova.

22 O pravima kupca kada primi robu sa materijalnim nedostacima vid. ZOO, čl. 488. Prema Konvenciji Ujedinjenih nacija o ugovorima o međunarodnoj prodaji robe – Bečka konvencija, čl. 35, prodavac je dužan da isporuči robu u količini, kvalitetu i vrsti kako je to predviđeno ugovorom i pakovanu ili zaštićenu na način predviđen u ugovoru. Za analizu pitanja da li se Bečka konvencija može primeniti na pametne ugovore vid. Janssen 2022, 9–17. Ukoliko se prihvati pozitivan odgovor, o drugim pitanjima u vezi sa Bečkom konvencijom i pametnim ugovorima vid. Duke 2019.

Jezik ugovora može biti problematičan i postoje mogućnosti da ono što piše u njemu ne iskazuje jasno koja je bila volja ugovornih strana u momentu zaključenja. Sa pametnim ugovorima akvi problemi mogu biti još veći. Imajući u vidu da volju ugovornih strana treba prevesti u kod te da mogu postojati diskrepance između onoga što su ugovorne strane zaista želele i onoga što je programer razumeo (ili mogao da unese), sporovi zbog stvarne volje ugovornih strana mogu biti još češći. Tumačenje ugovora koji su zapisani delom ili u celini putem koda dobija novu dimenziju i mora biti prilagođeno realnosti digitalnog sveta. Načini tumačenja su razvijeni kao pomoć forumu koji rešava da protumači odredbe klasičnog jezika, a ne odredbe zapisane putem koda. Zbog toga se predlažu različita rešenja kojima se prilagođavaju postojeći principi.<sup>23</sup>

Takođe, dokazivanje postojanja, forme i sadržine pametnog ugovora može biti predmet spora, pogotovo u slučaju da je ugovor samo u formi koda, bez klasičnog ugovora (Lefèvre, Delwaide 2019, 232). Osim toga, u većini jurisdikcija ugovor je punovažan ako ga zakluče stranke sa odgovarajućom poslovnom sposobnošću. Česta pseudonimnost ili anonimnost strana u pametnim ugovorima otežava procenu ispunjenosti tog uslova (Sherata 2018, 11).

Ukoliko je arbitražni sporazum izražen samo u formi koda<sup>24</sup>, bez klasičnog ugovora, javiće se pitanje nadležnosti arbitraže. U literaturi se uveliko razmatra da li je u tom slučaju zadovoljen kriterijum iz Njujorške konvencije o priznanju i izvršenju stranih arbitražnih odluka (u daljem tekstu Njujorška konvencija)<sup>25</sup> da arbitražni sporazum mora da bude u pisanoj formi,<sup>26</sup> a može se postaviti i pitanje ispunjenja kriterijuma iz često liberalnijih nacionalnih arbitražnih zakona.<sup>27</sup>

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23 Tako se pitanje kako bi razumna osoba razumela odredbe ugovora, zamenjuje pitanjem kako bi razumeo funkcionalni računar. Javlja se i predlog sa još više pristalica – primena standarda razumnog programera (kodera). U poslednjoj situaciji, programer bi imao ulogu veštaka koji bi forumu „preveo“ kod, sa glavnim zadatkom da da stručno mišljenje o tome koja uputstva kod daje računaru. Vid. Law Commission 2021, 16.

24 Ukoliko postanu aktuelni arbitražni sporazumi u formi koda, to može da podstakne arbitražne institucije da sastave model-klauzulu upravo u toj formi.

25 Zakon o ratifikaciji konvencije o priznanju i izvršenju inostranih arbitražnih odluka, *Službeni list SFRJ – Međunarodni ugovori* 11/81. Prema UNCITRAL, u pitanju je konvencija koju su do sada ratifikovale 172 države sveta. U Srbiji je stupila na snagu 1992. godine.

26 Njujorška konvencija, čl. 2 (1) i (2). Za pozitivan odgovor vid. Sharma 2022, 80, a za negativan Michaelson, Jeskie 2019, 130.

27 Srpski Zakon o arbitraži, *Službeni glasnik RS* 46/200, donet je po ugledu na Model zakon UNCITRAL-a i predviđa liberalniji režim u pogledu forme arbitražnog sporazuma od Njujorške konvencije. Vid. Pavić 2010, 12.

Osim klasičnih sporova, pojaviće se i oni novi, koji su rezultat specifičnosti pametnih ugovora. Tako, „rupe“ ili greške u kodu su neizbežne<sup>28</sup> i samim tim će imati uticaj na izvršenje. Čuveni *DAO* incident pokazuje da samo jedna rupa u kodu može biti iskorišćena od hakera da povuče sredstva u vrednosti od četrdeset miliona američkih dolara (Shehata 2018, 6). Studije pokazuju da pametni ugovori koji su zasnovani na *Ethereum*-u imaju najmanje sto grešaka na hiljadu linija koda (Zaslowsky 2018, 360). U tom svetlu, postavlja se pitanje odgovornosti treće strane koja je sačinila pametni ugovor.<sup>29</sup>

Potpuno nova pitanja javiće se u sporovima iz pametnih ugovora sa trenutno najčešćim predmetom – digitalnom imovinom. Ti sporovi će imati dosta sličnosti sa ostalim trgovinskim sporovima sa problemima izvršenja ugovora, prava svojine, prava intelektualne svojine i mana volje. Ipak, nematerijalna (neopipljiva) priroda digitalne imovine, potencijalna anonimnost (ili pseudonimnost) stranaka i nepromenljivost distribuirane mreže otvaraju potpuno nove horizonte materijalnog prava (Scott *et al.* 2022, 2).

Često strane u ugovornom odnosu neće biti iz iste države, pa će odgovori na sva ta pitanja zavisiti od merodavnog prava. Međutim, budući da ta materija nije regulisana u mnogim državama, te da će se za nju tek stvarati sudska i arbitražna praksa, odgovori na pitanja biće uslovljeni i spremnošću onoga ko odlučuje da rešava o do sada nerazmatranim temama i da popunjava pravne praznine u merodavnom materijalnom pravu. Uzevši u obzir da će stranke najčešće biti situirane u različitim jurisdikacijama i da će često biti nepoznate jedna drugoj (zbog anonimnosti ili pseudonimnosti), te da se distribuirana mreža ne nalazi samo u jednoj državi, biće goruća brojna pitanja međunarodnog privatnog prava, koja će se ticati pre svega nadležnosti sudova, odnosno arbitraža i merodavnog prava (Scott *et al.* 2022, 2).

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28 Bil Gejts (*Bill Gates*) je izjavio da je „softver sjajna kombinacija umetnosti i inženjerstva“. Međutim, imajući u vidu da su umetnost, inženjerstvo i softver produkti ljudske vrste, perfekcionizam je utopija. V. Michaelson, Jeskie 2019, 114.

29 U budućnosti treba definisati da li je reč o ugovornoj ili vanugovornoj odgovornosti. Vid. Lefèvre, Delwaide 2019, 233.

## 4. ARBITRAŽA KAO FORUM ZA REŠAVANJE SPOROVA IZ PAMETNIH UGOVORA

Arbitraža je privatna način rešavanja sporova koji počiva i umnogome zavisi od volje stranaka. Ne samo da je na njima da li će spor rešavati tim putem već su stranke u prilici da biraju sedište arbitraže i odluče o sporu, da oblikuju postupak i na drugi način se koriste svojom autonomijom volje u granicama imperativnih normi arbitražnih zakona mesta sedišta arbitraže.<sup>30</sup> Prilagodljivost arbitraže sopstvenim korisnicima je među najvećim prednostima u odnosu na sud. Osim trgovinskih transakcija, taj način rešavanja sporova se prilagodio specifičnim zahtevima različitih drugih oblasti, te su se izdvojile sportska arbitraža, berzanska arbitraža<sup>31</sup>, investiciona arbitraža<sup>32</sup>, arbitraža za sporove iz intelektualne svojine, arbitraža između država itd. U novije vreme, širi se domen arbitraže na maltene sve arbitrabilne sporove<sup>33</sup>, te smo svedoci postojanja posebnih arbitražnih pravila čak i za nasledne sporove.<sup>34</sup>

Atraktivnost arbitraže<sup>35</sup> već su prepoznale i kompanije koje se bave kriptovalutama koje najčešće uključuju arbitražne klauzule u svoje ugovore.<sup>36</sup> Decentralizovana priroda kriptovaluta ide dobro rame uz rame

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30 Podrobniju analizu ograničenja stranačke autonomije u međunarodnoj arbitraži vid. Ferrari, Rosenfeld 2023, 49–80.

31 Beogradski arbitražni centar ima poseban Pravilnik o rešavanju berzanskih sporova, kojim se uspostavlja ubrzan postupak rešavanja te posebne kategorije sporova. Više o tome vid. Pavić 2021, 371–375.

32 O razlikama između investicione i trgovinske arbitraže vid. Paunović 2018, 173–189; M. Jovanović 2018, 345–364.

33 Različite države na različite načine definišu arbitrabilnost predmeta spora, te se postavlja i pitanje merodavnog prava za određivanje objektivne arbitrabilnosti. Vid. S. Jovanović 2021, 416–418.

34 Tako, Bečka arbitražna i medijacijska pravila iz 2021. godine sadrže dopunska pravila za sporove koji se odnose na nasleđivanje, koja se primenjuju, na primer, kada to predvidi zaveštalac u raspolaganju imovinom nakon smrti. Vid. VIAC Arbitražna i medijacijska pravila 2021, Aneks 6.

35 Prema Queen Mary and White & Case Survey (2021, 5) međunarodna arbitraža je preferirani metod rešavanja prekograničnih sporova za 90% ispitanika, bilo samostalno (31%) ili zajedno sa ADR (59%).

36 Prilikom zaključivanja arbitražnog sporazuma strane moraju da razmotre kao sedište arbitraže državu koja je prijateljski nastrojena prema digitalnoj imovini i da izvrše opsežnu analizu stava sudova država u kojima će se arbitražna odluka potencijalno izvršavati. Svaka sumnjičavost je opravdana. Tako je kineski sud poništio arbitražnu odluku donetu u Kini prema kojoj je tuženi obavezan da plati u kineskim juanima naknadu štete jer tužiocu nije preneo bitkoine. Sud se pozvao da je odluka suprotna javnom poretku jer olakšava cirkulaciju kriptovaluta i njihovu

sa autonomijom stranaka i (relativnom) slobodom arbitraže od mešanja nacionalnih sudova (Taylor, Wu, Li 2022). Većina njenih karakteristika, koje su ujedno i razlike u odnosu na državne sudove, odgovaraju generalno poslovnom svetu. Rečju, arbitraža je pogodna da se prilagodi zahtevima svake vrste spora koji se može rešavati privatno.

#### **4.1. Karakteristike arbitraže u odnosu na zahteve strana u pametnim ugovorima**

Srbija tradicionalno ima loše statistike u brzini izvršivosti ugovora, što je korisnicima pametnih ugovora najvažnije. Zbog toga se u Srbiji, kao i u svetu, već dugo čine naponi da se popularizuje alternativno rešavanje sporova, pogotovo arbitraže i medijacije, a sve sa ciljem povećanja generalne efikasnosti sistema rešavanja sporova (Pavić, Đorđević 2014, 244–245). Korisnici pametnih ugovora imaju jasne zahteve u pogledu svojih potreba. Sama težnja da se izvršenje ugovora automatizuje te isključe posrednici i treće strane pokazuje da su brzina, efikasnost, poverljivost, stručnost i niski troškovi vrhunske vrednosti koje te ugovorne strane cene. Samim tim, arbitraža, ako ima cilj da bude poželjan forum za rešavanje tih sporova, mora da odgovori tim zahtevima.

U tom smislu, arbitražno rešavanje sporova već ima početnu prednost u odnosu na sudsko. Dugotrajnost postupka je ozbiljan problem kada se stranke sude oko nove tehnologije koja može postati zastarela pre nego što se postupak okonča (Benton 2017). Sudsko rešavanje karakteriše njegova dužina i sporost, dok su arbitraže po pravilu jednostepene, postupak dostavljanja pojednostavljen, a pravilnici institucija često predviđaju i rokove za donošenje odluke (Knežević, Pavić 2013, 21). Na primer, prema pravilima o ubrzanom postupku<sup>37</sup> ili čak i po „redovnim“ pravilima nekih arbitražnih institucija<sup>38</sup>, rok za donošenje odluke je šest meseci od *case management conference*, odnosno od konstituisanja arbitražnog veća. Takođe, arbitraža može da se okonča i samom razmenom podnesaka, potpuno elektronski. Čak i ukoliko je potrebna usmena rasprava gde će se izvoditi dokazi, virtuelne

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razmenu za novac suprotno kineskom pravu. Vid. Scott *et al.* 2022, 4. Takođe, grčki apelacioni sud je odbio da izvrši arbitražnu odluku koja je određena u bitkoinima pozivajući se na javni poredak. Vid. Taylor, Wu, Li 2022.

37 Vid. na primer Rules of Arbitration of the International Chamber of Commerce (ICC), Appendix VI Expedited Procedure Rules, Article 4(1).

38 Pravilnik Beogradskog arbitražnog centra (Beogradska pravila) – Pravilnik BAC-a, čl. 32 st. 1.

(online) arbitaže su postale uobičajne.<sup>39</sup> Međutim, kako strane u pametnim ugovorima kao najveću vrednost neguju ekspeditivnost, čini se da je čekanje pola godine na odluku, uz prethodnih makar mesec dana na fazu postupka pre imenovanja arbitra, predugačak period za prekid poslovnog odnosa i nekorišćenje spornih sredstava. To se može činiti kao mana klasične arbitraže, ali samo na prvi pogled, jer ne treba izgubiti iz vida da strane u svojoj arbitražnoj klauzuli mogu predvideti rok za donošenje odluke, koji može biti kraći od propisanog. Naravno, na stalnoj arbitražnoj instituciji će biti da oceni da li je takva odredba u skladu sa njenim pravilima<sup>40</sup> te će se pokazati koje institucije su fleksibilne i prilagodljive.

Efikasnost definitivno stoji na strani arbitraže.<sup>41</sup> Nakon donošenja arbitražne odluke stranke u arbitraži se mogu uzdati u olakšano priznanje i izvršenje odluke u bilo kojoj državi članici Njujorške konvencije. Kako će strane u pametnom ugovoru često biti iz različitih država, ta prednost arbitražu čini posebno atraktivnom, pogotovo imajući u vidu da se i dandanas sudske odluke teško priznaju i izvršavaju internacionalno.<sup>42</sup> Takođe, arbitraže su po pravilu jednostepene bez mogućnosti izjavljivanja žalbe. Sredstvo koje nezadovoljna stranka ima protiv arbitražne odluke je tužba za poništaj sa daleko užim razlozima od onih zbog kojih se može podneti žalba na sudsku odluku.<sup>43</sup>

Strane u pametnim ugovorima često funkcionišu na principu anonimnosti ili pseudonimnosti jer poverljivost vrednuju kao jednu od najvećih vrednosti, uz istovremenu želju da zaštite od alarmiranja trenutnih i budućih poslovnih partnera (ili investitora) o postojanju spora. Karakteristika arbitraže je upravo nejavnost – osim stranaka, arbitra i sekretarijata institucije, niko ne

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39 Prema srpskom pravu ne postoji prepreka da arbitraža bude u celini virtuelna. I u Srbiji i u svetu se očekuje da mogućnost virtuelnih arbitraža postane jedna od njenih regularnih obeležja. Pavić, Đorđević 2021, 536.

40 Na primer, u čl. 3 st. 1 Pravilnika BAC-a predviđa se da se na postupak primenjuju odredbe Pravilnika i pravila koja ugovore stranke, osim pravila čija bi primena bila nespojiva sa odredbama Pravilnika ili načelima arbitraže.

41 Za njene korisnike, najvrednija karakteristika međunarodne arbitraže je transnacionalna izvršivost odluka, praćena izbegavanjem specifičnih pravnih sistema i nacionalnih sudova, fleksibilnošću i mogućnošću stranaka da biraju arbitre. Vid. Queen Mary and White & Case Survey 2018, 7.

42 O postupku egzekvuturne i određenim teškoćama u Srbiji vid. S. Jovanović, Vučinić 2022, 535–552.

43 Možda najveća razlika je u tome što se u postupku poništaja ne gleda pogrešno utvrđeno činjenično stanje ili pogrešna primena materijalnog prava, osim ukoliko su greške toliko značajne da ujedno predstavljaju i povredu javnog poretka. Vid. Stanivuković 2013, 30.



zna identitet stranaka u sporu. Kada dođe do spora, stranke bi bile dužne da otkriju svoj identitet, međutim, mogu biti sigurne da će samo zatvoren krug ljudi znati za to i imaće obavezu da tako i ostane.

Stranke u arbitražnom postupku, za razliku od sudskog, imaju mogućnost da same biraju arbitre koji će im rešiti spor. Izborom stručnjaka u oblasti na kojoj počiva njihov spor, koji se uz to razume i u funkcionisanje pametnih ugovora, obezbediće da krajnja odluka bude pravno i stručno utemeljena. To što stranke biraju arbitre prema reputaciji predstavlja snažan motiv da se oni usavršavaju u predmetnoj oblasti i da idu u korak sa trendovima, što je od ključnog značaja za oblast koja se kontinuirano i rapidno razvija, do trenutno nesagledivih granica.

Lica koja zaključuju ugovor sa automatskim izvršenjem prestacija teže da uklone sve moguće dodatne troškove posrednika. Takođe, ukoliko dođe do spora, insistiraće da se spor reši što jeftinije. Iako su troškovi arbitraže predvidljivi i unapred definisani, trenutno se ne može smatrati da su niski troškovi njena prednost. Naprotiv, ona je često, pogotovo ako se ugovore pravila najprestižnijih svetskih arbitražnih institucija, skuplja od odlaska na sud. Razume se, izbor neke institucije u Srbiji značiće i niže troškove od biranja pravilnika najprestižnijih institucija u, na primer, Parizu ili Singapuru. Iako ni to arbitražu neće učiniti jeftinom, nemoguće je dobiti i jare i pare, te zbog ostalih njenih prednosti<sup>44</sup> učesnici međunarodne trgovine je i dalje smatraju primarnim izborom za njihove sporove.

Kao što određeni autori prepoznaju (Landbrecht, Wehowsky 2022, 315) treba proučavati prošlost da bi se predvidela budućnost. U tom smislu, klasična arbitraža je već razvila svoje različite podvrste te prilagođavanja koja su već uveliko izvršena u određenim oblastima, kao što su berzanski sporovi<sup>45</sup> (brzina, kratki rokovi, niski troškovi i drugo), a koja mogu biti adekvatno preslikana i na rešavanje sporova iz pametnih ugovora. Stoga, kao korak dalje ka integrisanju arbitraže u sporovima iz pametnih ugovora, stalne arbitražne institucije mogu sačiniti posebne pravilnike. Upravo to je učinila američka *Judicial Arbitration and Mediation Services (JAMS)* koja je razvila Pravilnik za rešavanje sporova iz pametnih ugovora (*JAMS Smart Contract Rules*), koji je trenutno u fazi nacрта.<sup>46</sup> Sa svega 18 članova uspostavljen je

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44 Osim razmatranih, vid. ostale prednosti u Knežević, Pavić 2013, 18–22.

45 Beogradski arbitražni centar ima poseban pravilnik za rešavanje berzanskih sporova (Pravilnik Beogradskog arbitražnog centra o rešavanju berzanskih sporova usvojen 2018. godine, u primeni od 2021. godine).

46 JAMS Smart Contract Clause and Rules (DRAFT) – JAMS, <https://www.jamsadr.com/rules-smart-contracts>, poslednji pristup 14. novembar 2023.

brz postupak sa kratkim rokovima uz pokušaj da se odgovori na zahteve jednostavnih, gotovo binarnih sporova u kojima stranke žele ekspresno rešenje sa niskim troškovima. Tako, postupak se odvija elektronskim putem i elektronskom komunikacijom, određeni rokovi se mere satima<sup>47</sup>, dok se arbitražna odluka donosi po pravilu za 30 dana od imenovanja.<sup>48</sup> U slučaju prigovora nenadležnosti arbitraže, arbitar donosi odluku o svojoj (ne) nadležnosti u roku od 72 sata od prigovora.<sup>49</sup> Prema tim pravilima, postupak bi bio završen za najduže 45 dana<sup>50</sup>, što je znatno kraće čak i od postojećih pravila ubrzanog postupka.<sup>51</sup>

U svetu se javljaju i prve arbitražne institucije potpuno posvećene sporovima iz blokčejna i novih tehnologija. Prva takva institucija osnovana je u Japanu, a na nivou evropskog kontinenta u Poljskoj (Kasatkina 2022, 147). Međutim, osim prikazanih mogućnosti koje stoje na raspolaganju klasičnoj arbitraži, postoje i posebne platforme koje su nastale kao odgovor na potrebe tih specifičnih korisnika.

#### **4.2. Klasična arbitraža i blokčejn arbitraža: alternativa ili kooperacija?**

Osim klasične arbitraže kakvu danas poznajemo, u poslednje vreme se razvijaju i različite onlajn platforme za rešavanje sporova. Imajući to u vidu, pravi se razlika u pogledu rešavanja sporova iz pametnih ugovora pred klasičnom arbitražom (van blokčejn platforme – *off-chain*) i na samom

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47 Na primer, stranke su dužne da imenuju arbitra sa liste u roku od 72 sata od podnošenja tužbe. Vid. JAMS, čl. 4 st. 1 tač. 2. Stranke mogu zahtevati razjašnjenje odluke u roku od 120 sati od njenog donošenja. Vid. JAMS, čl. 13 st. 2.

48 JAMS, чл. 13 ст. 1.

49 JAMS, čl. 7 st. 2.

50 Ovako kratki rokovi ne predstavljaju veći problem ako je reč o sporu koji je male vrednosti i kompleksnosti, o čemu će biti više reči u nastavku rada. Takođe, arbitri koji bi prihvatili ta imenovanja ne bi bili iskusni arbitri, imajući u vidu da arbitar koji rešava spor prema tim pravilima mora da svoje vreme preokupira predmetom sa izrazito brzim rokovima. To će omogućiti da mladi izdanci arbitraže stiču iskustvo u prostijim slučajevima.

51 Stalna arbitraža pri Privrednoj komori Srbije (SA) predviđa u svom Pravilniku rok od šest meseci za donošenje odluke. Ipak, u čl. 61 st. 1 Pravilnika SA, s druge strane, predviđa se da arbitar pojedinac donosi arbitražnu odluku u roku od 15 dana od održane usmene rasprave ili u roku od 15 dana od kada su ispunjeni uslovi za njeno donošenje, kada se usmena rasprava ne održava. Za komentar vid. Đorđević 2021, 482–483.

blokčejnu (*on-chain*). Možda najuspešniji primer druge vrste<sup>52</sup> je Kleros (*Kleros*)<sup>53</sup>, onlajn platforma zasnovana na *Etherium* blokčejnu koja koristi kriptovalute i teoriju igara za rešavanje sporova. Stranke u sporu podnose svoj slučaj i dokaze platformi. O sporu odlučuju tzv. porotnici (*jurors*) koji imaju ulogu arbitara, dok je konačna odluka ona koja ima većinu glasova. Porotnici ulažu svoje kriptovalute kako bi mogli da učestvuju u odlučivanju, a dalji razvoj događaja zavisi od toga da li su glasali u skladu sa većinom. Ukoliko nisu – gube deo uložениh sredstava, ako jesu – zarađuju deo sredstava onih koji su izgubili uz dodatak naknade koju su platile stranke.

Imajući u vidu da porotnici ne mogu da komuniciraju jedni sa drugima, moraju da donesu odluku u skladu sa onim što misle da će drugi savesni i dobro informisani porotnici da odluče. U teoriji igara<sup>54</sup> takav pristup je poznat kao „fokalna tačka“ ili „šelingova tačka“, koja predstavlja rezultat koji će dobro informisani odlučioци najverovatnije postići kao konsenzus bez međusobne komunikacije.

Funkcionisanje Klerosa kao blokčejn arbitraže je zanimljivo, međutim, otvara pitanje da li se odluka doneta u tom postupku može izvršiti prema pravilima Njujorške konvencije. Glavna nedoumica je da li su poštovane sve procesne garancije, što je uslov da se arbitražna odluka prizna po Konvenciji. Način na koji se biraju arbitri, sporovodi postupak, učestvuje u sporu i donosi odluka moraju biti u skladu sa pravom stranaka na jednak tretman i ravnopravnost te mogućnost da iznesu svoje stavove i dokaze i da se izjasne o radnjama i predlozima protivne stranke.<sup>55</sup> Takođe, odluka mora biti doneta od arbitara koji su nepristrasni i nezavisni,<sup>56</sup> u suprotnom, stranke imaju pravo da tokom postupka traže njihovo izuzeće.<sup>57</sup>

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52 U ovom radu ćemo pažnju posvetiti upravo toj platformi jer, kao što se navodi (Sharma 2022, 100), Kleros je trenutno najnapredniji projekat, a uz to je na toj platformi doneta prva arbitražna odluka na svetu koja je indirektno izvršena pred meksičkim sudom (više o tome u nastavku rada).

53 „Postojeće tehnologije rešavanja sporova su suviše spore, preskupe i nepouzđane za decentralizovanu globalnu ekonomiju koja funkcioniše u realnom vremenu“, piše u Belom papiru Klerosa. „Brz, jeftin, transparentan, pouzđan i decentralizovan mehanizam za rešavanje sporova koji donosi konačne odluke o primeni pametnih ugovora je ključna za eru blokčejna.“ Vid. Kleros Short Paper v1.0.7 („Kleros White Paper“), 2019, 1.

54 U pravu je već pisano o teoriji igara, na primer u kontekstu međunarodnog prava i Svetske trgovinske organizacije, vid. Cvetković 2018, 90–94.

55 Zakon o arbitraži, čl. 33 st. 1 i 2, Model zakon UNCITRAL-a, čl. 18. Stranka mora imati pravo da bude saslušana i da prezentuje svoj dokaz na usmenoj raspravi. Rast mogućnosti za virtuelne arbitraže omogućava da se usmena rasprava održi bez većih troškova novca i vremena te da bude potpuno u skladu sa zahtevima ubrzanog postupka. Vid. Uff 2021.

Imajući u vidu da stranke u postupku pred Klerosom nisu obaveštene ko su arbitri, nemaju mogućnost da se potpuno izjasne na dokaze druge stranke, a arbitri u postupku potencijalno imaju finansijsku pristrasnost imajući u vidu da njihova naknada, odnosno gubitak uložених sredstava zavisi od toga da li su se priklonili pobjedničkoj ili gubitničkoj strani, postavlja se pitanje da li se Kleros odluka može priznati i izvršiti prema Njujorškoj konvenciji zbog primene čl. 5 st. 1 tač. b) i d), te čl. 5 st. 2 tač. b) (javni poredak). Tim pre što je da bi se odluka uopšte mogla smatrati arbitražnom odlukom, bitno da je u toku postupka obezbeđen pravičan i nepristrasan postupak i da je odluka zasnovana na pravu ili principima pravičnosti.<sup>58</sup>

Prema našem mišljenju, zabrinutost u literaturi i praksi je preterana. Njujorškom konvencijom je, naime, propisano više smetnji za priznanje strane sudske odluke, koje se dele u grupu koju sud razmatra samo po prigovoru stranke i na koje pazi po službenoj dužnosti. Ukoliko je u Kleros postupku povređen uslov iz čl. 5 st. 1 tač. b) i d), smatramo da sud ne bi mogao da odbije priznanje takve odluke jer se po tim uslovima vodi računa samo po prigovoru stranke, a stranka je prihvatila takav način rešavanja njenog spora podnošenjem Klerosu, te je prekludirana da se u postupku kontrole odluke poziva na te uslove. Nasuprot tome, ako nedostatak predstavlja povredu javnog poretka države priznanja, tada se mora odbiti priznanje odluke.<sup>59</sup>

Treba imati u vidu da je blokčejn arbitraža trenutno podobna za sporove vrlo male vrednosti i kompleksnosti. Na primer, preduzetnik iz Srbije angažuje frilensera (*freelancer*) iz Argentine da mu napravi sajt za njegov mali biznis uz naknadu od 3.000 evra. Preduzetnik ne bude zadovoljan sajtom i traži povraćaj uplaćene naknade. Pokreće postupak pred Klerosom u kojem će porotnici birati između tri opcije: izvršiti povraćaj 3.000 evra, zadržati 3.000 evra ili dati dodatni rok za završetak sajta.<sup>60</sup> Jasno je da preduzetnik iz Srbije za spor male vrednosti neće pokrenuti sudski postupak u Argentini i plaćati

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56 Zakon o arbitraži, čl. 19 st. 3.

57 Model zakon UNCITRAL-a, čl. 12; Zakon o arbitraži, čl. 23.

58 Nemački Vrhovni sud je 2004. godine doneo odluku uvažavajući navedeno. Vid. više u Ferrari, Rosenfeld 2023, 61.

59 Vredi pomenuti, ipak, da se u arbitražnim zakonima, poput srpskog imperativnim odredbama mogu smatrati one koje se tiču jednakosti stranaka u postupku i pravu da se izjasne na navode i dokaze suprotne stranke, kao i pravilo o neparnom broju arbitara i njihovoj nezavisnosti i nepristrasnosti. Stoga, svako grubo kršenje tih odredaba u postupku Klerosa moglo bi se smatrati povredom srpskog javnog poretka ukoliko se odluka smatra domaćom.

60 U Belom papiru Klerosa se koristi sličan primer. Vid. Lesaege, Ast, George 2019, 2–3.

argentinske advokate da ga u tom sporu zastupaju. Isto tako, čak i da je ugovorena arbitraža u Srbiji, za spor od 3.000 evra moraće da plati troškove arbitražnoj instituciji u visini koja je blizu vrednosti spora.<sup>61</sup> Zbog toga se preduzetniku iz Srbije ne isplati da isteruje pravdu, čime ona faktički postaje nedostupna. Kako bi se to izbeglo, on će biti zadovoljen i „grubom“ pravdom bez procesnih garancija garantovanih u sudskom postupku i klasičnoj arbitraži. Takođe, korisnici blokčejna i pametnih ugovora između pravičnosti, fer i ravnopravnog postupka biraju efikasnost kao vrhunsku vrednost. Kao rezultat takve poslovne realnosti i transakcija između učesnika te vrste, postaće aktuelno i goruće pitanje koliki je obim autonomije volje stranaka, koliko one mogu da se odriču osnovnih procesnih garancija, te kojih mogu da se odreknu a kojih ne. Javni poredak kao osnov na koji sud pazi po službenoj dužnosti biće najniža granica. Kako vrednost tih sporova bude rasla, učesnici će sve manje biti spremni da se podvrgnu takvim načinima rešavanja koji ne garantuju sve ono što se vekovima stvaralo, a to je pre svega sigurnost stranaka da će biti ravnopravno tretirane i saslušane u sporu<sup>62</sup> i da će odluku doneti nezavisni i nepristrasni odlučioци, te će klasična arbitraža isplivati kao adekvatan forum za takve sporove.

Međutim, pravni izazovi blokčejn arbitraža se tu ne zaustavljaju. Osim navedenih, otvaraju se još brojna pitanja. Da li se *on-chain* odluka uopšte može smatrati arbitražnom odlukom u smislu Njujorške konvencije i nacionalnih arbitražnih zakona?<sup>63</sup> Povezano sa tim, da li ima *res judicata* efekat sprečavajući pokretanje *off-chain* arbitraže ili sudskog postupka? Da li arbitar mora da obrazloži odluku? Da li je arbitar obavezan da poštuje arbitražne zakone i, ukoliko jeste, koje?<sup>64</sup> Da li nacionalni sudovi mogu da izvrše *on-chain* odluku na osnovu Njujorške konvencije? Da li se može pokrenuti ponišaj te odluke u skladu sa nacionalnim arbitražnim zakonima? I još mnogo pitanja, a za sada malo definitivnih odgovora, uz pogodno tlo za nauku i praksu da do njih dođu.<sup>65</sup>

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61 Tako bi registraciona taksa, administrativni troškovi i naknada za arbitra pojedince pred Beogradskim arbitražnim centrom iznosila ukupno 2.700 evra u tom predmetu. Vid. Pravilnik BAC-a, Aneks 1, čl. 2, 3 i 4.

62 Princip jednakog tretmana stranaka u postupku ima bogatu istoriju i povezuje se sa pravom na pravično suđenje. Princip vuče korene još iz *Magna Carta Libertatum* iz 1215. godine. Danas se čl. 18. Model zakona UNCITRAL-a smatra „Magna Carta-om arbitražnog postupka“. Vid. Scherer, Prasad, Prokic 2023, 1128–1130.

63 O uslovima u srpskom pravu vid. Stanivuković 2022, 43–44.

64 Ova pitanja postavljaju i Scott *et al.* 2022, 9.

65 Osim toga, nedoumica je i da li bi pobednička strana koja je već stekla finansijsku korist od arbitražne odluke oklevala da vrati taj prihod drugoj strani ako sud naknadno poništi odluku. Ukoliko to druga strana odbije, morao bi da se pokreće

Osim suštinskih proceduralnih garancija, dodatni problem se pojavljuje u blokčejn arbitraži, uključujući i one u okvirima Klerosa. Nepostojanje obrazloženih odluka je značajan izazov, imajući u vidu da stranke nemaju na šta da se ugledaju u formulisanju svojih argumenata. U suštini, izostanak ranije prakse koje tradicionalni sudovi i tribunali obezbeđuju za tradicionalne ugovore znači da se svaki spor mora voditi od nule, bez mogućnosti predviđanja kako će se o određenim pitanjima odlučivati. Nažalost, time se povećavaju troškovi, za razliku od njihovog planiranog smanjenja koji je cilj digitalizacije (Sklaroff 2017, 301, 302).

Ostaje da vidimo da li su klasična i blokčejn arbitraža u odnosu alternative i konkurencije ili, pak, kooperacije. Može se primetiti da one nemaju identičnu sferu interesovanja i da nisu namenjene za iste tipove sporova te ne mogu biti konkurenti. S druge strane, jedna drugu mogu da dopunjuju i da uz kooperativan odnos poboljšaju svet rešavanja sporova. U tom odnosu kooperacije vidimo najmanje dve mogućnosti. Jedna od njih je da se *on-chain* arbitraža smatra mehanizmom predarbitražnog načina rešavanja sporova, a da se „prava“ arbitraža odvija tek nakon što se ta inicijalna faza završi. Višeslojne arbitražne klauzule (*multi-tier arbitration clauses*) već su uveliko poznate, te je, na primer, okončani postupak pred Odborom za izbegavanje i rešavanje sporova (*Dispute Avoidance/Adjudication Board – DAAB*) iz ugovora o građenju sa pozivom na *FIDIC* uslove ugovora pretfaza pre konačne arbitraže. Konačnu odluku o pravima i obavezama, koja može biti izvršena putem državne prinude, može da omogućiti klasična arbitraža.

Druga solucija bi mogla da bude ona koja se u praksi već javila i o kojoj je rešavao meksički sud (doduše u kontekstu domaće arbitraže). Tužilac je pokrenuo postupak pred arbitrom u klasičnoj arbitraži, dok je u arbitražnoj klauzuli bilo predviđeno da će arbitar procesnim zaključkom uputiti stranke na rešavanje pred Klerosom. Tri porotnika su određena na način koji je ranije opisan i donela su odluku u korist tužioca. Nakon toga, arbitar je inkorporirao odluku Klerosa u svoju arbitražnu odluku i ona je izvršena pred nacionalim sudom kao domaća arbitražna odluka.<sup>66</sup> Autonomija volje

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novi spor, prema svemu sudeći sudski, te bi brzina i efikasnost rešavanja sporova izgubile svaku smisao. To se postavlja kao pitanje jer arbitri mogu da postavie svoju odluku na blokčejn, te da ona mehanizmom pametnog ugovora bude automatski izvršena onda kada je odluka doneta. Naravno, to bi značilo da su se strane složile, u svom pametnom ugovoru, da se u slučaju spora arbitražna odluka automatski izvrši čim se postavi i verifikuje na lancu i da su sredstva već deponirana, kao i u određenim slučajevima dobrovoljno davanje kriptografskog ključa od strane stranaka.

66 Više o činjenicama slučaja vid. Carrera 2022, 16–18.

je primarni postulat u arbitraži i podrazumeva da stranke mogu kreirati postupak i način donošenja odluke sve do granica imperativnih normi sedišta arbitraže. Naravno, arbitri moraju biti obazrivi u pogledu podobnosti odluke da bude priznata u državi izvršenja odluke, te će se tek videti kako će nacionalni sudovi u postupku priznanja prihvatiti inkorporisanje odluka blokčejn arbitraža u klasičnu arbitražnu odluku. Na prvi pogled i uz veliki nivo apstrakcije, ne vidimo razloge da takve odluke nemaju svetlu internacionalnu budućnost.

### **4.3. Najpogodnija vrsta arbitraže u odnosu na vrednost i kompleksnost spora iz pametnih ugovora**

Kao što se do sada može primetiti, blokčejn arbitraža nije alternativa klasičnoj arbitraži. One zajedno treba da omogućavaju legitimitet jedna drugoj, prva da pomogne rešavanju sporova male vrednosti i niske kompleksnosti, druga da svojim mehanizmima omogući sigurnu izvršivost prvoj. Sporovi iz pametnih ugovora mogu imati različite vrednosti i biti različitih nivoa kompleksnosti. Takođe, mogu nastati i iz hibridnog i samo iz pametnog ugovora. Prema trenutnom stanju stvari, nisu sve vrste arbitraže pogodne za svaki od tih spora. Zbog toga u nastavku prikazujemo tabelarni prikaz, nastao za potrebe ovog istraživanja, različitih grupa sporova podeljenih u odnosu na njihovu vrednost i kompleksnost, sa najpogodnijim načinima za njihovo rešavanje putem arbitraže, kao adekvatnijeg načina rešavanja tih sporova u odnosu na sud.

Velika ili mala vrednost spora je subjektivno pitanje za stranke u postupku, čak i gledano u odnosu na svaku stranku pojedinačno. Zbog toga u tabelu nismo uvrstili grupu sporova srednje vrednosti, ali bi oni svakako mogli da se svrstaju u drugu grupu.

U sporovima izuzetno velike vrednosti, koji mogu znatno da utiču na poslovanje stranaka u postupku, one se neće odricati vekovima sticanih procesnih garancija, stručnosti arbitara i potrebe da se o njihovom sporu sa najvećom pažnjom odluči. Maksimum na koji bi te stranke pristale je da se postave rokovi za donošenje odluke, ali bez prevelikog ubrzanja donošenja odluke.

Sporovi iz druge grupe stranke ne mogu prepustiti blokčejn arbitraži ili zbog toga što je velika vrednost u pitanju, te su im potrebne garancije kao i prvoj grupi, ili zbog velike kompleksnosti koju treba da reše profesionalni

arbitri, a ne nepoznati odlučioi pomoću teorije igara ili na sličan način. Ipak, zbog male kompleksnosti ili male vrednosti, brzina ovde može da igra ključnu ulogu.

<b>Tabela A1*</b>		
<b>Broj grupe sporova</b>	<b>Tip spora u odnosu na vrednost i kompleksnost</b>	<b>Najpogodnija vrsta arbitraže za sporove iz pametnih ugovora</b>
<b>1.</b>	Velika vrednost i velika kompleksnost	Klasična arbitraža bez predviđenih rokova za donošenje odluke; klasična arbitraža sa rokom za donošenje odluke od minimum 6 meseci
<b>2.</b>	Velika vrednost i mala kompleksnost	Klasična arbitraža sa rokovima za donošenje odluke do 6 meseci; posebni pravilnici arbitražnih institucija za rešavanje sporova iz pametnih ugovora
	Mala vrednost i velika kompleksnost	
<b>3.</b>	Mala vrednost i mala kompleksnost	Posebni pravilnici arbitražnih institucija za rešavanje sporova iz pametnih ugovora; blokčejn arbitraža ( <i>on-chain</i> )

\* Tabelarni prikaz najpogodnijih vrsta arbitraže u odnosu na vrednost i kompleksnost sporova iz pametnih ugovora

Na kraju, sporovi iz treće grupe su apsolutno podobni da budu rešeni brzo i uz niske troškove, sa kratkim rokovima, kako bi se neželjeni nesporazum što pre rešio. Vredi napomenuti da je prikladnost potpuno kodiranih pametnih ugovora za složene sporove takođe predmet razmatranja. Kao što je ranije pomenuto, za ugovore koji zahtevaju fleksibilnost i sadrže apstraktne koncepte poput dobre vere, preferirani izbor bi trebalo da bude hibridni ugovor. Potpuno kodirani ugovori, koji se u pravom smislu nazivaju pametnim ugovorima, nalaze optimalnu primenu u situacijama sa minimalnom neizvesnošću i u rutinskim transakcijama.<sup>67</sup> Kako značajan deo tih transakcija čine transakcije male vrednosti, uloga treće kategorije sporova ima ogroman značaj u ovom domenu.

<sup>67</sup> Sklaroff 2017, 302.



## 5. ZAKLJUČAK

Nove tehnologije se brzo razvijaju i mogu napraviti revoluciju i u poslovnom ugovaranju i u rešavanju sporova. Od svih načina rešavanja sporova, arbitraža ima najveći potencijal da se prilagodi potrebama korisnika pametnih ugovora i generalno blokčejn tehnologije. Ona je alternativa sudu, međutim, i pored svih prednosti, mora se konstantno prilagođavati potrebama svojih korisnika kako ne bi počeli da traže alternativu alternativni.

Prilagodljivost arbitraže je već iznedrila posebne institucije ili pravilnike za rešavanje sporova iz pametnih ugovora. Nastaju i posebne vrste – blokčejn arbitraže, čija je izvršivost po Njujorškoj konvenciji upitna, te je pitanje da li te platforme mogu da se koriste nazivom „arbitraža“. Bilo kako bilo, one mogu da budu značajan faktor za rešavanje sporova koji su do sada bili van radara i arbitraže i suda. Osim toga, klasična i blokčejn arbitraža treba da saraduju i da se koriste međusobnim prednostima. Upravo tim povodom smo u radu prikazali, prema vrsti spora u odnosu na vrednost i kompleksnost, koja vrsta arbitraže je najadekvatnija za njihovo rešavanje, iz čega se vidi da se interesi klasične arbitraže u svim svojim varijacijama ni u jednom segmentu ne poklapaju sa blokčejn arbitražom.

Dokazano je da pametni ugovori i blokčejn tehnologija neće sprečiti nastanak sporova, pa čak nismo sigurni ni da će uticati na njihovo smanjenje. I dalje će se javljati pitanja klasičnog ugovornog prava, samo u novom ruhu, ali i neka nova. Međutim, to će dovesti do potrebe prilagođavanja arbitraže kakvu danas poznajemo. Osim u pogledu brzine, efikasnosti, nižih troškova i specijalizacije arbitra, javiće se učestala potreba za veštacima koji su stručnjaci u programiranju, ali zbog toga se neće dogoditi da arbitri prestanu da budu pravnici.

Osim na arbitražnom svetu, na čitavom pravnom sistemu je da radi na prihvatanju novog instituta sa velikim potencijalom. Poželjno je da se Srbija postavi kao jurisdikcija prijateljski nastrojena prema pametnim ugovorima, kako bi bila konkurentna u ovo digitalno doba. Strane prilikom ugovaranja arbitraže moraju voditi računa o tome da kao sedište arbitraže izaberu jurisdikciju sa takvim epitetom, a ako se ugovor tiče kriptovaluta, onu koja je prijateljski nastrojena prema njima. U tom slučaju bi bio nužan izbor sedišta arbitraže i merodavnog prava kako bi se obezbedila maksimalna sigurnost da će arbitražna odluka biti izvršena.

Iako iz naziva ovog rada proizlazi da je ovo tema budućnosti, ta „budućnost“ je prisutna već sada, tako da prilagođavanja novim načinima poslovanja i zaključivanja ugovora te načina rešavanja sporova koji iz njih proizilaze i specijalizacija arbitara koji će te sporove rešavati već kasne. Gašo Knežević

(2006, 123) poredio je pravo sa uspavanom leptoticom smatrajući da zbog svoje konzervativnosti ono hronično zaostaje za promenama u društvu. Trenutno je prilika da pogledamo u budućnost. Taj pogled će odrediti one učesnike na tržištu koji će iskoristiti promene koje donose nove tehnologije u svoju korist i one koji će još jednom propustiti „voz“ ili ispasti iz njega. To je neminovno jer, ipak, nisu sva prava uspavana. Pravnici iz određenih država uveliko pokušavaju da budu prepoznati kao prva grupa učesnika i već sada pripremaju teren da se njihova jurisdikcija smatra prijateljski nastrojenom prema pametnim ugovorima i u procesnim i u supstancijalnim pitanjima. Imajući u vidu informatičku klimu Srbije koju su stvorile brojne tehnološke kompanije koje u njoj posluju, među kojima i one koje se bave upravo pametnim ugovorima, autor se nada da će se ispostaviti da u tom sudaru uspavanog prava i neumorive tehnologije Srbija ima svetlu budućnost.

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## **ARBITRATION IN SMART CONTRACTS DISPUTES – A LOOK INTO THE FUTURE**

### Summary

The paper explores the growing integration of blockchain technology in the legal field, specifically focusing on the emergence of smart contracts with their automated execution of contractual obligations. Experts believe that the use of smart contracts contributes to the eradication of disputes. However, the author challenges this claim while analyzing the disputes that may arise in this area, including classic contract law disputes and new issues specific to smart contracts. The paper focuses on whether arbitration is the optimal forum for resolving these disputes. The relationship between traditional and blockchain arbitration is explored, examining disputes that would be resolved using established methods and those suitable for the newly created mechanism. The interests of traditional arbitration do not coincide with those of blockchain arbitration. Both should cooperate and take advantage of each other. The author asserts that the flexibility and adaptability of arbitration will be its dominant advantage in addressing disputes.

**Key words:** *Smart contracts. – Blockchain technology. – International arbitration. – Blockchain arbitration. – Alternative dispute resolution.*

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