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# Use of Artificial Intelligence in Arbitration

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## Abstract

The digital revolution of the 20th century made information available everywhere and anytime. Now in the age of Artificial Intelligence, this information is used for automating the decision-making process in the hope of a better and improved future. Bearing all the positives in our minds, we simply cannot forget about the concerns that artificial intelligence will have on dispute resolution. For these reasons, this article aims to analyze the use of artificial intelligence in the process of arbitrary decision-making. Exploring the technical aspects as well as the theoretical implications for decision-making.

## Keywords

Arbitration; Artificial Intelligence; Decision-making.

## 1 Introduction

New technologies and their applications in practice are experiencing an unprecedented boom. Our society has moved from its primary development from a collection-oriented economy, through production to current mass production. Industrialization also meant a shift of society to the so-called knowledge society, societies where goods and services are based on information.<sup>1</sup> Information thus began to be a very valuable asset and contributed to the dynamic development of technology. It is technologies based on collecting and analysing information that are the driving force of current society. At this very moment, the entry of a new technology into the game can be observed. Technology that has the potential to further

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<sup>1</sup> See GYURÁSZ, Z. and M. MESARČÍK. *Nové technológie a regulačné výzvy*. In: ANDRAŠKO, J. et al. *Právo informačných a komunikačných technológií (2. diel)*. Bratislava: TINCT, 2021, 328 p.

influence the paradigms of our lives. Artificial intelligence (“AI”) has already entered the daily existence of society. At the same time, however, according to some, it poses threats that need to be approached prudently.<sup>2</sup>

Even though the development of AI has begun as early as the 1950s, a significant step forward did not occur until the last decades, while the original product did not reach the original ambitions and expectations. These ambitions and expectations, simply put, were the goal of developing a machine that can replicate human thinking and thus solve tasks more efficiently and make work easier for our society. We are still a long way from general AI and thus from a machine that will handle universal tasks. Nevertheless, at present, we can see the application of AI in specific areas.<sup>3</sup> One of these areas is the arbitration process.

In these days of rising concerns about the resources and time that takes to decide disputes, AI has the potential not only to reduce the time and cost of resolving disputes but by increasing predictability and reducing risk, and to discourage unmeritorious claims to create incentives to settle early. However, at the same time, concerns are raised about the impact that AI will have on decision making and access to justice depending on who has access to its benefits, the transparency of, and control over, the arbitral data and algorithms, including publication of awards and potential risks to confidentiality and personal data protection, to name a few.

## 2 Arbitration and Use of Modern Technology

In the last years, we are witnesses of an immense impact of the new technologies on our life. Transformational innovations change the way how people live their everyday lives, how they perform daily task, communicate, and even carry out their work task. The new and modern technology had tremendous impact to legal processes as well. The international arbitration,

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<sup>2</sup> BLACK, J. Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a ‘Post-Regulatory’ World. *Current Legal Problems* [online]. 2001, Vol. 54, no. 1, pp. 103–146 [cit. 6. 6. 2021]. Available at: [https://www.researchgate.net/publication/30527050\\_Decentring\\_Regulation\\_Understanding\\_the\\_Role\\_of\\_Regulation\\_and\\_Self-Regulation\\_in\\_a\\_%27Post-Regulatory%27\\_World](https://www.researchgate.net/publication/30527050_Decentring_Regulation_Understanding_the_Role_of_Regulation_and_Self-Regulation_in_a_%27Post-Regulatory%27_World)

<sup>3</sup> See CORRALES, M., M. FENWICK and N. FORGO (eds). *Robotics, AI and the Future of Law (Perspectives in Law, Business and Innovation)*. Singapore: Springer, 2018, 358 p.

as one of the methods of alternative dispute resolution is not an exception. In this part of the article, our goal is to analyze the role of the technology in the current arbitration processes and effect that the technology had so far in field of dispute resolution via arbitration, e.g., the e-mail and other types of electronic communications between arbitration tribunal, arbiters and parties, storage of information for access by the parties and the tribunal using portable or fixed storage media, hearing room technology, etc.<sup>4</sup>

Recently, the international arbitration as well as any decision-making process has been facing unprecedented challenges in the form of the world pandemic changing all the processes as we knew them. The answer of the international arbitration community lies in increased interest and the support of the technology in the processes.

The impact of the modern technologies in the decision-making processes can be divided in two categories. First one enshrines all technological tools or methods helping the arbiter. For example, online dispute resolution methods, online communication, remote videoconference hearings, etc. These technologies' main goal is not to resolve the case. The second category is use of AI itself, which can reach the final judgment by itself.

## **2.1 Use of Technology in the Arbitral Rules**

In this chapter of the article, we are analysing the regulation of the use of modern technology in chosen arbitration rules guidelines. Namely, of the International Court of Arbitration at the International Chamber of Commerce (“ICC”), the Singapore International Arbitration Centre (“SIAC”) as two leading arbitration institutions.

Recently, the ICC revised its arbitration rules and published ICC Rules of Arbitration 2021 introducing multiple changes, including some crucial changes in connection to the use of a new technology. Technology has always an irreplaceable role in the process of international arbitration, mostly because of its international nature. New amendment regulating written notifications or communications (Art. 3 para. 1 of the ICC Rules of Arbitration) removes

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<sup>4</sup> ICC Commission Report on Information Technology in International Arbitration 2017. *International Chamber of Commerce* [online]. [cit. 6. 6. 2021]. Available at: <https://iccwbo.org/content/uploads/sites/3/2017/03/icc-information-technology-in-international-arbitration-icc-arbitration-adr-commission.pdf>

an obligation of a party to provide each document in a sufficient number of copies for each party, each arbitrator and to the Secretariat.<sup>5</sup> The new regulation also called a green arbitration simply states the obligation to “send” each document to each party, arbitrator and to the Secretariat presuming only electronic communication. Additionally, several articles of the ICC Rules of Arbitration 2021 confirm the step towards electronic communication by stating that sending hardcopies of the documents shall be performed when requested.<sup>6</sup> In practice, electronic filing and electronic communication between the parties have a potential to significantly change the character of the arbitration proceeding since electronic delivery is not only faster method but also more economically and ecologically convenient. ICC Rules of Arbitration 2021 also regulates another ground-breaking innovation, i.e., remote conference hearings introduced in the Art. 26 of the ICC Rules of Arbitration 2021. No necessity to conduct hearing in person is established. It remains solely up to the arbitrators whether they decide to conduct in person hearing on basis of the relevant facts and circumstances of the case or if the parties must be consulted as a preliminary step. The Art. 26 para. 1 lists individual means of the remote hearings, like videoconference, telephone, and other appropriate means of communication. At the beginning of the COVID-19 pandemic, when the new electronic measures were adopted and new amendments introduces, the question arose whether the “online” communication and hearing will prevail, or the world will come back to normal and to face to face hearings. Now, at least in the field of the arbitration, the ICC Rules of Arbitration 2021 confirm that electronic communication will be the future of the hearings rather than the temporary covid prevention measure.

It is necessary to add, that the format of remote hearing might not be suitable for every arbitration proceeding therefore in person hearing are certainly not over. At the same time, even if the ICC Rules of Arbitration 2021 allows virtual hearing to take place, they remain obstructed by the *lex arbitri*.

The situation is slightly different while comparing ICC Rules of Arbitration to the SIAC 2016 Rules unlike the ICC Rules of Arbitration do not directly

<sup>5</sup> Art. 3 para. 1 ICC Rules of Arbitration 2021.

<sup>6</sup> Art. 4 para. 4 letter b) ICC Rules of Arbitration 2021.

regulate a possibility to conduct remote hearings, on the other side,<sup>7</sup> videoconferences are not explicitly excluded. Consequently, as a response to the pandemic, the SIAC issued guidelines called *Taking your arbitration remote*. Guidelines issue in August 2020 specifically enumerates main consideration of remote arbitration hearing in all phases of the proceeding, e.g., efficiency to hold virtual hearing in individual cases, requirements of the contract law or under any applicable law in connection to the remote hearing, etc.<sup>8</sup> Guidelines at the same time provide instruction on how to proceed with arbitration hearing in the online environment.

Among other leading world arbitration centres, the London Court of International Arbitration (“LCIA”) introduced possibility to use online hearing earlier than the ICC by adopting LCIA Rules of Arbitration 2020 which similarly to ICC Rules of Arbitration 2021 support use of the electronic communication and e-mail delivery of documents instead of sending a hardcopy.<sup>9</sup> According to the Art. 19.2. of the LCIA Rules of Arbitration 2020: *“The Arbitral Tribunal shall have the fullest authority under the Arbitration Agreement to establish the conduct of a hearing, including its date, duration, form, content, procedure, time-limits and geographical place (if applicable). As to form, a hearing may take place in person, or virtually by conference call, videoconference or using other communications technology with participants in one or more geographical places (or in a combined form).”*<sup>10</sup> Therefore new methods of arbitration hearing are introduced allowing more flexible way to resolve dispute by using technology.

The UNCITRAL Arbitration rules, which are mostly used in the *ad hoc* arbitrations, were not updated due to COVID-19 pandemic, however their latest version issued in 2010 stipulates in Art. 28 para. 4 that the *“arbitral tribunal may direct that witnesses, including expert witnesses, be examined through means*

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<sup>7</sup> Art. 19 para. 1 2016 SIAC Rules which provides that the tribunal shall conduct the arbitration in such manner as it considers appropriate, after consulting with the parties, to ensure the fair, expeditious, economical and final resolution of the dispute.

<sup>8</sup> SIAC Guides on Taking Your Arbitration Remote. *SIAC* [online]. August 2020 [cit. 6. 6. 2021]. Available at: [https://www.siac.org.sg/images/stories/documents/siac\\_guides/SIAC%20Guides%20-%20Taking%20Your%20Arbitration%20Remote%20\(August%202020\).pdf](https://www.siac.org.sg/images/stories/documents/siac_guides/SIAC%20Guides%20-%20Taking%20Your%20Arbitration%20Remote%20(August%202020).pdf)

<sup>9</sup> See Art. 4 para. 2 LCIA Rules of Arbitration 2020.

<sup>10</sup> Art. 19 para. 2 LCIA Rules of Arbitration 2020.

*of telecommunication that do not require their physical presence at the hearing (such as videoconference).”<sup>11</sup>*

## **2.2 Practical Challenges of Using Technology in the Arbitration Proceeding**

The biggest challenges connected to the use of the technology in the arbitration proceeding are connected to the videoconferencing and they were outlined in the 7<sup>th</sup> Asia Pacific ADR Conference which gave rise the Seoul Protocol, which are possible hacking, confidentiality issues, ensuring the due process and witness tutoring.<sup>12</sup>

In 2017, the ICC issued a report on information technology in international arbitration specifying some issues which needs to be taken into consideration to perform remote hearing and using IT in the arbitration.<sup>13</sup> Below, we have chosen some of the considerations which are most crucial for the successful functioning of the international arbitration.

First, the question which must be considered to successfully use modern technologies in the arbitration process is whether the parties must agree with their use. Should agreement of the parties with use of e-mail or with other type of online communication and online filing be required? And what about the use of the videoconference? And finally, which consideration shall be considered by the tribunal? The specific guideline will have to be set eventually.

In connection to the institutional arbitration, the arbitration rules are applied to the arbitration held therein. Even if, the agreement of the parties shall prevail, in some cases it remains necessary to consider, whether in the event of certain variations from the arbitration rules, the institution will still be prepared to cover the arbitration proceedings.<sup>14</sup> Pursuant to the Rules of Arbitration of the Vienna international Arbitration Center, the Board

<sup>11</sup> Art. 28 para. 4 UNCITRAL Arbitration rules 2010.

<sup>12</sup> CHAKRABORTY, A. and A. CHAKRABORTY. Rethinking the Practicalities of Arbitration in the Age of a Pandemic. SSRN [online]. 18. 5. 2020 [cit. 6. 6. 2021]. Available at: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3628923](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3628923)

<sup>13</sup> ICC Commission Report on Information Technology in International Arbitration 2017. *International Chamber of Commerce* [online]. [cit. 6. 6. 2021]. Available at: <https://iccwbo.org/content/uploads/sites/3/2017/03/icc-information-technology-in-international-arbitration-icc-arbitration-adr-commission.pdf>

<sup>14</sup> GYARFÁŠ, F. et al. *Zákon o rozhodcovskom konaní. Komentár*. Bratislava: C. H. Beck, 2016, pp. 60–82.

may refuse to administer the proceedings if the arbitration agreement deviates fundamentally from and is incompatible with the Vienna Rules.<sup>15</sup> In this problem, two levels can be observed.

First one, considering even the slightest use of the modern technology, meaning e-mail or the online documentation filing which is today connected to the day-by-day functioning of the parties as well as of the arbitration tribunals. Therefore, excluding of any use of the modern technology could have retrograde effect to the decision-making process itself.

Second level considers use of the virtual hearings and possibility for arbitration court to make parties resolve their dispute via online and virtual hearing instead of face-to-face physical communication. As we mentioned above, some institutional rules already presume performance of video conferences. Pursuant to the ICC Rules of Arbitration 2021, it is up to the arbitrators to decide whether to pursue with the online proceeding. But what happened if parties disagree? Can arbitration tribunal force parties to undergo the online hearing against will of both or even of the one party? This problematic is a grey area in desperate need for the guidance. Some might be found in the ground-breaking judgment of the Austrian Supreme Court of 23 July 2020, Case No. 18 ONc 3/20s. In the case, the arbitration tribunal examined, whether conducting an arbitration hearing by videoconference over the objection of a party may violate due process.<sup>16</sup> The Austrian Supreme Court rejected the claim<sup>17</sup> and most likely even set standards for challenges concerning decisions to conduct hearing remotely. The decision of the Arbitration Tribunal to conduct remote hearing despite the objection of the parties does not violate Art. 6 of the European Convention on Human Rights of 3 September 1953 according to the Austrian Supreme Court.

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<sup>15</sup> Art. 1 para. 3 Rules of Arbitration and Mediation 2018 (Vienna Rules and Vienna Mediation Rules 2018). *VLAC* [online]. [cit. 6. 6. 2021]. Available at: <https://www.viac.eu/en/arbitration/content/vienna-rules-2018-online>

<sup>16</sup> SCHERER, M. et al. In a 'First' Worldwide, Austrian Supreme Court Confirms Arbitral Tribunal's Power to Hold Remote Hearings Over One Party's Objection and Rejects Due Process Concerns. *Kluwer Arbitration Blog* [online]. 24.10.2020 [cit. 6. 6. 2021]. Available at: <http://arbitrationblog.kluwerarbitration.com/2020/10/24/in-a-first-worldwide-austrian-supreme-court-confirms-arbitral-tribunals-power-to-hold-remote-hearings-over-one-partys-objection-and-rejects-due-process-concerns/>

<sup>17</sup> Judgment of the Austrian Supreme Court of 23 July 2020, Case No. ONc 3/20s.

To answer previously posed questions, arbitration proceeding remains alternative to court decision making process and the parties' autonomy certainly should not be suppressed, however this should not prevent parties from using modern procedural rules allowing to resolve dispute the fastest and most effective way possible.

Another second identified consideration, which certainly should be taken into consideration while holding remote videoconferences in *lex arbitri*. In principle, the arbitration proceeding is regulated by the law of the place of arbitration.<sup>18</sup> Therefore, place of the arbitration has a crucial role regarding, e.g., applicability of mandatory rules and principles of *lex fori*, including issues of arbitrability and validity of arbitration agreement, extent of intervention and support by state courts.<sup>19</sup> But how is the place of arbitration defined when all arbitration process is held online? If the parties agree on the place of the arbitration, there will be no issue. On the other hand, issue arises, when the parties have not reached an agreement on the seat of the arbitration. The internet cannot be pinpointed to a single location. There may be various ways to determine the place of arbitration which have been proposed by the legal theorists, e.g., pursuant to the location of the e-arbitration provider,<sup>20</sup> the place where servers are<sup>21</sup>, etc.

At the beginning of this chapter, we have divided the modern technology in the decision-making in two categories. This analysis was focused on the use technological tools which facilitates the arbitration process itself by easing the communication process between arbitration tribunal and the parties, by introducing online filling of the documents and virtual conferences.

To this day, technology is widely applied in the arbitration proceedings. In the last 2 decades, its development had huge impact on the settlement

<sup>18</sup> LYSINA, P., M. ĎURIŠ and M. HAŤAPKA. *Medzinárodné právo súkromné*. Bratislava: C. H. Beck, 2016, p. 487.

<sup>19</sup> HALLA, S. Arbitration Going Online – New Challenges in 21st Century? *Masaryk University Journal of Law and Technology* [online]. 2011, Vol. 5, no. 2, pp. 215–225 [cit. 6. 6. 2021]. Available at: <https://journals.muni.cz/mujlt/article/view/2583/2147>

<sup>20</sup> ABDEL WAHAB, M.S. ODR and e-Arbitration – Trends & Challenges. *Mediate.com* [online]. May 2013 [cit. 6. 6. 2021]. Available at: <https://www.mediate.com/pdf/wahabearb.pdf>

<sup>21</sup> KADIOGLU, C. and S. HABIB. Virtual Hearings to the Rescue: Let's Pause for the Seat? *Kluwer Arbitration Blog* [online]. 13. 7. 2020 [cit. 6. 6. 2021]. Available at: <http://arbitrationblog.kluwerarbitration.com/2020/07/13/virtual-hearings-to-the-rescue-lets-pause-for-the-seat/>



of disputes, including the arbitration proceeding. Nevertheless, up to this day, we are not making use of the full potential of the modern technology in the arbitration process. Even if, together with the corona crisis, new regulations and guidelines have been introduced, multiple consideration must still be resolved to observe full benefit of the modern technology.

### **3 Use of Artificial Intelligence in Arbitration**

The side effect of the COVID-19 pandemic as well as of any major world catastrophe in the last century, was a massive development of the technology. In the last decade, the slow shift of the legal decision making towards the AI was visible, and now, more than ever, the topic of the role of the AI in the arbitration proceeding gains its importance.

Current high demand for the fast-decision-making process which is at the same time efficient and just remains unfulfilled and it is more than certain, than in the following years, the role of the AI in the legal sector will rise. Even today, millions of people lack access to justice or their access to justice is limited due to bureaucratic inefficiencies, costs that are beyond their reach, and/or corruption.<sup>22</sup> Even if the legal technology is already part of all arbitration processes (as we analyzed it the chapter 1.2), in this chapter, we will be focusing on the use of the AI in the arbitration process and to the main legal challenges and limitations which are connected to the use of AI in the arbitration.

But before delving deeper into the issue of AI arbitration, we consider it appropriate to start at the very beginning, by defining the basic concepts. As we believe that it is important to be clear about the terms and concepts used in this article, to avoid any additional confusion.

#### **3.1 What Do We Mean by Artificial Intelligence?**

The most frequently used term we can encounter in this area is logically the term “artificial intelligence”. This term, nevertheless, is quite often used as an umbrella term for other terms such as machine learning, deep learning,

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<sup>22</sup> MARROW, P.B., K. MANSI and S. KUYAN. Artificial Intelligence and Arbitration: The Computer as an Arbitrator – Are We There Yet? *Dispute Resolution Journal* [online]. 2020, Vol. 74, no. 4 [cit. 6.6.2021]. Available at: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3709032](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3709032)

super intelligence, and even robotics.<sup>23</sup> However, these terms are not semantically identical, moreover, the very concept of artificial intelligence does not have a well-established definition to this day. Already we can see why we consider it so important to establish a clear definition of terms from the beginning, which we will use for the analyze in this article.

The prospect of creating machines with general intellectual abilities fascinated people long before we had the first computers. But what do we mean by artificial intelligence, and why is this concept so difficult to define? Even though, it is beyond the scope of this article to discuss the whole concept of AI in depth<sup>24</sup>, put it simply, the very idea of the existence of AI is based on the principle that human intelligence can be described in such a way that the machine can easily imitate it and perform tasks that only humans should be able to do.<sup>25</sup> However, the precise definition and meaning of the term human intelligence, (and even more so of “artificial” intelligence), is still the subject of much discussion and research,<sup>26</sup> and finding a consensus is almost impossible. Some explain our inability of finding a consensus by the rapid development in the field AI, where the definitions used formerly are always changing.<sup>27</sup> With the advances in this field of technology, previous benchmarks that defined AI have become obsolete and we have had to adapt to these changes.<sup>28</sup>

Today, even with the most common search for the definition of artificial intelligence, one is confronted with different definitions. The Encyclopedia

<sup>23</sup> For more in-depth comparison on these terms, See MESARČÍK, M. and Z. GYURÁSZ. *Umelá inteligencia a právna úprava zdravotníctva v Slovenskej republike*. Bratislava: Právnická fakulta, Univerzita Komenského v Bratislave, 2020, pp. 12–17.

<sup>24</sup> For more in-depth discussion on the concept of AI, See GYURÁSZ, Z. and M. MESARČÍK. *Nové technológie a regulačné výzvy*. In: ANDRAŠKO, J. et al. *Právo informačných a komunikačných technológií (2. diel)*. Bratislava: TINCT, 2021, 328 p.

<sup>25</sup> BOSTROM, N. and E. YUDKOWSKY. *The Ethics of Artificial Intelligence (Draft for Cambridge Handbook of Artificial Intelligence)*. *Nickbostrom.com* [online]. 2011 [cit. 6. 6. 2021]. Available at: <http://faculty.smcm.edu/acjamieson/s13/artificialintelligence.pdf>

<sup>26</sup> MCFADDEN, J. *Integrating information in the brain's EM field: the cemi field theory of consciousness*. *Neuroscience of Consciousness*, 2020, Vol. 2020, no. 1, pp. 11–13.

<sup>27</sup> KOK, Joost N. et al. *Artificial intelligence: Definition, Trends, Techniques, and Cases*. *Encyclopedia of Life Support Systems (EOLSS)* [online]. P. 68 [cit. 6. 6. 2021]. Available at: <http://www.eolss.net/sample-chapters/c15/e6-44.pdf>

<sup>28</sup> We believe that as a good illustration of advances in the field of AI is a comparison to the two greatest achievements in aviation history. If we imagine that it is almost 66 years since the Dartmouth Conference in 1956, and exactly 66 years have passed between the first controlled human flight and the landing of a man on the moon. We can see the pace that this field is moving forward. And as we so well know, even these steps were small for man but a huge leap for humanity.

Britannica states that: “*artificial intelligence is the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings*”, while the English Oxford Living Dictionary defines artificial intelligence such as: “*The theory and development of computer systems capable of performing tasks that usually require human intelligence, such as visual perception, speech recognition, decision making, and translation between languages.*” One of the more modern approaches to the definition of artificial intelligence is the definition used by *Dimitar Dobrev*<sup>29</sup> in his work “*A definition of artificial intelligence*”, where he defines artificial intelligence as “*a program that can handle tasks no worse than man in any world*”. And while the above-mentioned definitions are here to bring more light in this topic on the jurisprudential level, for us lawyers a rather “*hard definition*” will perhaps be more suitable. Thankfully, earlier in 2021 on 21 April, the European Commission presented the long-awaited Proposal for a Regulation on a European Approach for Artificial Intelligence.<sup>30</sup> In this document the European Commission relies on a definition where “*artificial intelligence system means software that is developed [...] for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with*”. As this definition is the latest and it is very likely that this is the definition, that we all shall be familiar with moving forward, we believe that this definition is the most concise, so for the purposes of this article, and we shall lean towards this definition of artificial intelligence.

### **3.2 (Artificially) Intelligent Decision-making**

Now that we addressed the problem of definition of AI, there is one more question that needs to be answered in the light artificially intelligent arbitration. The question is how do arbitrators or judges decide cases?

This questing though obviously central to the law, the mental processes of making decisions remain an uncertainty in the heart of legal discourse.

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<sup>29</sup> DOBREV, D. A. Definition of Artificial Intelligence. *Mathematica Balkanica* [online]. 2005, New Series, Vol. 19 [cit. 6. 6. 2021]. Available at: <http://www.math.bas.bg/infres/MathBalk/MB-19/MB-19-067-073.pdf>

<sup>30</sup> Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonized Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts 2021. *EUR-Lex* [online]. 21. 4. 2021 [cit. 6. 6. 2021]. Available at: <https://eur-lex.europa.eu/legal-content/EN/TEXT/?qid=1623335154975&uri=CELEX%3A52021PC0206>

The significance of decision making in the translation of legal rules into action is self-evident. As it is difficult to imagine any occasion when legal rules shall mechanically apply at any stage of the legal process.

For the process such as “*arbitration*” or “*judiciary*” it is considered a rational legal process if it achieves logical and social legitimacy.<sup>31</sup> And the guiding concept of the legitimacy in most law systems is the doctrine of rule of law.<sup>32</sup> The rule of law is a statement on legitimate political authority, and it entails a theory of judicial reasoning called legal rationalism.<sup>33</sup> A concept based on reason, where reason is a power of the mind and one that could uniquely filter out the relevant from the irrelevant. And if reason is the source of true knowledge, then reason could likewise be applied to legal disputes to solve the cases. According to this rationalist view, therefore legal decisions emanate naturally from prescribed forms of logical inference, namely deductions, inductions, and analogies.<sup>34</sup>

However, during the turn of the 20<sup>th</sup> century, the received view of legal theory was threatened by the foundational challenge posed by the American legal realism movement.<sup>35</sup> This movement challenged the idea that judges were constrained by legal rules. They did this, by looking at the hard cases that were politically or socially contentious. In the hard cases, the application of legal rules does not clearly lead to an objective outcome. This alternative position, associated with *Oliver Wendell Holmes*, and the legal realists, contends that “*the life of the law*” is based not on logic, but rather that the felt necessities of the time, avowed and unconscious intuitions of public policy, and even judicial prejudices have more to do with legal decisions than the formal axioms of logical inference.<sup>36</sup>

<sup>31</sup> EPSTEIN, D. Rationality, Legitimacy, & The Law. *Washington University Jurisprudence Review* [online]. 2014, Vol. 7, no. 1, pp. 1–38 [cit. 6. 6. 2021]. Available at: [https://openscholarship.wustl.edu/cgi/viewcontent.cgi?article=1103&context=law\\_jurisprudence](https://openscholarship.wustl.edu/cgi/viewcontent.cgi?article=1103&context=law_jurisprudence)

<sup>32</sup> See LYSINA, P. Právny štát ako spoločná hodnota členských štátov európskej únie? In: *Bratislava Legal Forum 2020*. Bratislava: Comenius University, Faculty of Law, 2020, pp. 38–47.

<sup>33</sup> MACCORMICK, N. *Rhetoric and The Rule of Law: A Theory of Legal Reasoning*. Oxford: Oxford University Press, 2010, 304 p.

<sup>34</sup> EPSTEIN, D. Rationality, Legitimacy, & The Law. *Washington University Jurisprudence Review* [online]. 2014, Vol. 7, no. 1, pp. 1–38 [cit. 6. 6. 2021]. Available at: [https://openscholarship.wustl.edu/cgi/viewcontent.cgi?article=1103&context=law\\_jurisprudence](https://openscholarship.wustl.edu/cgi/viewcontent.cgi?article=1103&context=law_jurisprudence)

<sup>35</sup> Ibid.

<sup>36</sup> See HOLMES, O. W. *The Common Law*. Mineola: Dover Publications, 1991, 480 p.

Nevertheless, through history realists and rationalist alike, instinctively believed that legal decision-making requires a cognitive process which is ontologically privileged to human existence, and therefore this phenomenon cannot be achieved by computer programs.<sup>37</sup> And yes, that was the case for many decades, with common computers. But now in the age of AI, we start to see a swing in the pendulum. Several studies<sup>38</sup> lend support to the thesis that computer programs are even better than humans in predicting the outcome of legal decision-making. And the basic explanation for this is apparently trivial. AI based systems are not limited by our fragile human bodies, as human brains suffer “hardware” limitations which computer programs can surpass easily.

For this reason, we should take a closer look on the topic of automated decision-making.

### 3.2.1 Automated Individual Decision-making

It is said that the idea automated decision-making of has fascinated academics since the early 1970s.<sup>39</sup> A world where automated systems could be used for decisions that must be made frequently and rapidly were for some utopic. It was believed that if the decision rules can be readily codified, and if high-quality data are available, chances are good that the decision can be automated.<sup>40</sup> And

<sup>37</sup> On this topic see GYURÁSZ, Z. Problematika “telo – myseľ” v 21. storočí (dôležitosť filozofie mysle pre modernú podobu umelej inteligencie). *COMENIUS časopis* [online]. 2021, no. 1, pp. 16–26 [cit. 6. 6. 2021]. Available at: [https://comeniuscasopis.flaw.uniba.sk/wp-content/uploads/2021/04/Comenius\\_1\\_2021\\_fin-3.pdf](https://comeniuscasopis.flaw.uniba.sk/wp-content/uploads/2021/04/Comenius_1_2021_fin-3.pdf)

<sup>38</sup> For some of earlier studies, see GUIMERA, R. and M. PÁRDO. Justice Blocks and Predictability of U.S. Supreme Court Votes. *PLOS ONE* [online]. 9. 11. 2011 [cit. 6. 6. 2021]. Available at <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0027188>; or RUGER, T. et al. The Supreme Court Forecasting Project: Legal and Political Science Approaches to Predicting Supreme Court Decision making. *Columbia Law Review* [online]. 2004, Vol. 104, no. 4, pp. 1150–1210 [cit. 6. 6. 2021]. Available at: <https://www.jstor.org/stable/4099370?seq=1>

<sup>39</sup> See GORRY, A. and M. MORTON. *A Framework for Management Information Systems* [online]. Massachusetts: Massachusetts Institute of Technology, 1971, p. 12 [cit. 6. 6. 2021]. Available at: <https://dspace.mit.edu/bitstream/handle/1721.1/47936/frameworkformana00gorr.pdf>

<sup>40</sup> HARRIS, J. and T. DAVENPORT. Automated Decision Making Comes of Age. *MIT Sloan Management Review* [online]. 15. 7. 2005 [cit. 6. 6. 2021]. Available at: <https://sloanreview.mit.edu/article/automated-decision-making-comes-of-age/>

despite the earlier limitations of technologies<sup>41</sup>, automated decision-making have come of age.

If we take a closer look into the opinion of the Art. 29 Working Party on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679,<sup>42</sup> we may see that a solely automated decision-making is defined as “*the ability to make decisions by technological means without human involvement*”.<sup>43</sup> According to the opinion of the Art. 29 Working Party an automated decisions can be based on any type of data, but mainly:

- a) data provided directly by the individuals concerned (such as responses to a questionnaire),
- b) data observed about the individuals (such as location data collected via an application),
- c) derived or inferred data such as a profile of the individual that has already been created (e.g., a credit score).

The beauty of automated decision-making lies in the very essence of new technologies, in the idea that they are here to make our lives better and easier. Nevertheless, we still believe that there is a long road ahead from the point where the phenomenon of decision-making completely ceases to exist as an ontologically privilege of human existence and becomes a common trait for AI in every aspect of our lives. We must believe that reason as the power that can uniquely filter out the relevant from the irrelevant requires a pinch of, shall we say, common sense.

For this very reason the biggest challenge remains the question of data management. As we all very well know, correlation does not necessarily

<sup>41</sup> See the shift from the expert systems to machine learning and more in GYURÁSZ, Z. and M. MESARČÍK. *Nové technológie a regulačné výzvy*. In: ANDRAŠKO, J. et al. *Právo informačných a komunikačných technológií (2. diel)*. Bratislava: TINCT, 2021, 328 p.

<sup>42</sup> Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679 (wp251rev.01) adopted on 3 October 2017. *European Commission* [online]. [cit. 6. 6. 2021]. Available at: <https://ec.europa.eu/newsroom/article29/items/612053>

<sup>43</sup> While the guideline points it out that an Automated decision-making has a different scope and may partially overlap with or result from profiling. Profiling and automated decision-making are not necessarily separate activities. Something that starts off as a simple automated decision-making process could become one based on profiling, depending upon how the data is used. For more on profiling See MESARČÍK, M. *Policajné profilovanie v kontexte základných ľudských práv a slobôd*. *Acta Facultatis Iuridicae Universitatis Comenianae*, 2019, Vol. 38, no. 2, pp. 178–226.

mean causality. “*The problem is that most machine learning systems do not combine thinking with calculations. They simply spew a correlation of data, whether they make sense or not.*”<sup>44</sup> Examples include the finding of ZestFinance Inc, which found from its data that higher people are better able to repay loans, or the information that people who fill out their loan applications using only capital letters make their payments than people who they use only lowercase letters. Of course, in practice, it will probably be difficult for a person’s height to affect our ability to repay a loan. Ultimately, what we can see is that AI can make systems smarter, but without the addition of a pinch of common sense, it can cause considerable inconvenience.

## **4 Challenges of the AI in the Arbitration Process**

In theory, the nowadays AI is developed enough to resolve dispute based on the initial facts typed into the computer. Machine learning algorithm capable to predict outcome of the European Court of the Human rights have been introduced, with accuracy up to 79%.<sup>45</sup> However, the main issue why we are not yet replacing judges and arbiters with the AI technology are mostly legal.

Currently, the focus of the AI development is not only on the replacement of lawyers by the AI but also to assist them with the decision-making process. For this reason, we are going to analyze possibility of supporting role of the AI in the international arbitration, namely in the process of selection of arbitrators, researching processes and drafting/suggesting of the arbitral award.

One of the methods which can be used to facilitate the international arbitration is the selection of the arbitrators. One of the principles of the arbitration proceeding is the possibility of the parties to choose their arbitrator. The method pursuant to which parties can do so varies depending on the agreement of the parties, as well as of the applicable law and arbitral institution

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<sup>44</sup> CAGE, D. Big Data Uncovers Some Weird Correlations. *The Wall Street Journal* [online]. 23. 3. 2014 [cit. 6. 6. 2021]. Available at: <https://www.wsj.com/articles/SB10001424052702303369904579423132072969654>

<sup>45</sup> Please compare ALETRAS, N. et al. Predicting judicial decisions of the European Court of Human Rights: a Natural Language Processing perspective. *PeerJ Computer Science* [online]. 24. 10. 2016 [cit. 6. 6. 2021]. Available at: <https://peerj.com/articles/cs-93/>

rules.<sup>46</sup> E.g., the ICC Rules of Arbitration 2021 states that the dispute shall be decided by a sole arbitrator or by three arbitrators.<sup>47</sup> If parties do not agree on the number of the arbitrators, the arbitration tribunal shall appoint sole arbitrator, the court shall appoint a sole arbitrator, save where it appears to the court that the dispute is such as to warrant the appointment of three arbitrators.<sup>48</sup> At the same time, if parties fail to agree on the sole arbitrator in the prescribed period, he shall be appointed by the court. Similar rights have the Arbitration tribunal if the parties agreed on the three arbitrators and additionally, it is up to the court to appoint the third arbitrator which will act as the president of the arbitration tribunal.<sup>49</sup> The similar procure is contained in many others arbitration rules. Main advantages of selection of arbitrators by the AI may be seen in the saving time.

Using the AI in the supporting role does not constitute many legal challenges, since role of the AI remains like the role of the modern technology. Modern technology, e.g., videoconferencing facilitates communication between the tribunal and the parties. Similarly, the AI might have only supporting role, facilitating, and fastening the process by, e.g., performing choice of sole arbitrator if parties fail to do so or of the third arbitrator.

The biggest challenges are not connected to the supporting role of the AI rather than the decision making one. Even the suggestion of the decision making by the AI is causing great concerns. The main legal issue of using AI in the decision-making process are the validity of the arbitration clause whereas parties agree on AI arbitrator and afterwards enforceability of the arbitral award issued by the AI arbitrator.

Currently, use of the AI in the arbitration process is not regulated. Even if parties may agree with use of AI arbitrator, some European jurisdictions expressly states that the arbitrator must be a human being.<sup>50</sup> In the same

<sup>46</sup> MARQUEZ, A. S. Can Artificial Intelligence be used to appoint arbitrators? Practical and legal implications of the use of Artificial Intelligence in the appointment of arbitrators in International Commercial Arbitration. *AVANI* [online]. 2020, no. 1, pp. 249–272 [cit. 6. 6. 2021]. Available at: <https://avarbitraje.com/wp-content/uploads/2021/03/ANAVI-No1-A12-pp-249-272.pdf>

<sup>47</sup> Art. 12 para. 1 ICC Rules of Arbitration 2021.

<sup>48</sup> Art. 12 para. 2 ICC Rules of Arbitration 2021.

<sup>49</sup> Art. 12 para. 5 ICC Rules of Arbitration 2021.

<sup>50</sup> See Art. 1450 French Code of Civil Procedure in force 14 May 1981; or Art. 1023 Dutch Code of the Civil Procedure in force 1 December 1986.



way, Act No. 244/2002 Coll., on Arbitration (Slovak Republic) (“Slovak Act on Arbitration”) in the Section 6 states that the arbitrator can be a human being fulfilling some conditions such as being adult a with full legal capacity.<sup>51</sup>

The UNCITRAL Model Law does not specifically regulate, that the arbitrator must be a human, but conditions which must be fulfilled by the arbitrator in order to be eligible for the arbitrator position signifies that the arbitrator shall be a human. Namely, Art. 11 para. 1 of the UNCITRAL Model Law presume that no person shall be precluded by reasons of its nationality to act as an arbitrator.

At the same time, the United Nations Convention of 10 June 1958 on the Recognition and Enforcement of Foreign Arbitral Awards (“New York Convention”) does not prevent parties from choosing an AI arbitrator, nor does it regulate any of such rules. However, Art. V of the New York Convention stipulating ground for the refusal of the recognition and enforcement of the arbitral awards states that the recognition and enforcement might be refused if it is in the contrary to the public policy of the country in which the enforcement and recognition is sought.<sup>52</sup>

Notion of the public policy is a vague concept varying from one national legislation to another. Since it represents powerful weapon in the hands of the national court which allows it to refuse enforcement of an arbitral award,<sup>53</sup> it shall be interpreted restrictively. The public policy concept is the subject of the interpretation of the national court, not even the New York Convention itself provide guideline on its interpretation. The Slovak Act on Arbitration proceeding adopted the similar concept of the public policy as can be found in the New York Convention or in the UNCITRAL Model Law. The Slovak law also recognizes the concept of the procedural public policy whereas also elementary requirement of a fair trial can be public policy norms.<sup>54</sup> We believe that rendering the final arbitral award not by a human but solely by a machine may impact some of the rights for the fair trial of an individual.

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<sup>51</sup> See Section 6 para. 1 Act No. 244/2002 Coll., on arbitration proceeding.

<sup>52</sup> Art. V para. 2 letter b) New York Convention.

<sup>53</sup> SATTAR, S. Enforcement of arbitral award and public policy: same concept, different approach? *ela.law* [online]. [cit. 6. 6. 2021]. Available at: <https://www.ela.law/Templates/media/files/Misc%20Documents/Enforcement-of-Arbitral-Awards-Public-Policy.pdf>

<sup>54</sup> GYARFÁS, F. et al. *Zákon o rozhodcovskom konaní. Komentár*. Bratislava: C. H. Beck, 2016, pp. 518–593.

Legal challenges of the arbitration process remain a concern which must be resolved to fully use the AI in the arbitration procedure. Its use as the supplementary method enabling dispute resolution does not seem to be problematic since it's like current use of the modern technology in the arbitration proceeding. However, before using AI as the arbiter multiple questions must be resolved and regulated to fulfil full AI's potential.

## 5 Conclusion

In this article we have analyzed the concept of the AI in the legal decision-making process. The potential of the AI arbitration is undeniable. Even more in this unusual and challenging times. AI poses multiple questions technical ones as well as legal. Intentionally or unintentionally incomplete or selected data, or data programmed in a selective way, could lead to biased or unreliable results.<sup>55</sup>

The legal challenges to the AI arbitration will probably be harder to overcome than the technical one since the regulation of the AI is still at the beginning and multiple controversial question at the international as well as national level must be resolved to fully benefit from its potential.

The International arbitration is the most suitable dispute resolution process for the application of the AI, since it is the most used in the international commercial disputes as well as it is based on the free will of the parties to resolve their dispute by the arbitration proceeding instead of court litigation. It remains to believe that the legal as well as the technical obstacles will be shortly overcome allowing subject to resolve their disputes via AI Arbitration.

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<sup>55</sup> CARRARA, C. The Impact of Cognitive Science and Artificial Intelligence on Arbitral Proceedings – Ethical Issues. In: KLAUSEGGER, C. et al. (eds.). *Austrian Yearbook on International Arbitration 2020*. Wien: C. H. Beck, 2020, pp. 522, 527.

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