



## AI AND ONLINE DISPUTE RESOLUTION

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| <b>Received:</b> 26 <sup>th</sup> January 2024<br><b>Accepted:</b> 24 <sup>th</sup> March 2024 | Legal proceedings are still the most important way of resolving disputes. However, given the volume and nature of new disputes, mostly arising from electronic contracts, the courts are becoming slower and outdated. ODR is an emerging set of technologically-enabled tools and processes for facilitating conflict resolution. ODR is an area of law which uses technology to make it easier for people to settle their differences. It involves negotiation, mediation, arbitration or a combination of these. It is often seen as the online equivalent of Alternative Dispute Resolution (ADR). Artificial Intelligence (AI) refers to simulating human intelligence in machines programmed to think and act like human beings. AI can be applied in various fields, including ODR. <sup>1</sup> In this paper, I present a critical assessment of the use of AI-based techniques in ODR. |

**Keywords:** *Online Dispute Resolution, Artificial Intelligence, AI-DR.*

### INTRODUCTION

The integration of Artificial Intelligence (AI) into Online Dispute Resolution (ODR) systems represents a transformative shift in the legal landscape, offering new possibilities for efficiency and accessibility. AI's role in ODR is multifaceted, encompassing predictive analytics, decision-making support, and enhanced communication capabilities. As AI technologies evolve, they promise to significantly impact the way disputes are resolved by providing sophisticated tools that aid in the negotiation and mediation processes.<sup>2</sup>

AI-driven ODR platforms can analyze vast amounts of data to identify patterns and suggest resolutions based on historical outcomes, making the dispute resolution process faster and potentially more fair. Moreover, AI can assist in drafting agreements and managing case workflows, thereby reducing the administrative burden on human mediators and arbitrators.<sup>3</sup>

However, the adoption of AI in ODR also raises critical questions regarding transparency, bias, and the ethical use of technology in legal proceedings. Ensuring that AI systems are designed with these considerations in mind is paramount to maintaining trust and integrity in the justice system.

### ONLINE DISPUTE RESOLUTION

Online Dispute Settlement (ODR) is emerging as a transformational approach to conflict resolution in the digital age.<sup>4</sup> ODR offers a convenient, efficient and accessible alternative to traditional face-to-face dispute resolution methods, given the rapid development of technology and the increasing prevalence of online interactions. It looks at its main features, benefits, challenges and future prospects. ODR is a set of digital tools, platforms and processes that are designed to facilitate the resolution of disputes between parties without the need for physical presence or the use of traditional legal procedures. It harnesses the power of technology to create virtual environments where parties can communicate, negotiate and agree remotely. The methods of ODR can include negotiation, mediation, arbitration and other alternative dispute resolution (ADR) techniques, all of which are conducted online through digital channels.

### THE MAIN FEATURES OF ODR

*Digital platforms:* ODR platforms provide an online space for parties to communicate, exchange information and commit to resolving a dispute.

<sup>1</sup> Artificial Intelligence (AI): What It Is and How It Is Used. Reviewed by GORDON SCOTT. Updated December 04, 2023 <https://www.investopedia.com/terms/a/artificial-intelligence-ai.asp>

<sup>2</sup> Anthony G. Greenwald et al., Measuring Individual Differences in Implicit Cognition: The Implicit Association Test, 74 J. Personality & Soc. Psychol. 1464, 1465-1466 (1998).

<sup>3</sup> Orna Rabinovich-Einy and Ethan Katsh. (2021). Artificial Intelligence and the Future of Dispute Resolution: The Age of AI-DR. Eleven International Publishing.

<sup>4</sup> Ethan Katsh and Orna Rabinovich-Einy, Digital Justice Technology and the Internet of Disputes (OUP, 2017) 1



**Communication Tools:** To facilitate dialogue and negotiation, ODR uses various communication tools such as email, chat, video conferencing and messaging systems.

**Case Management:** ODR platforms offer robust case management features which allow parties and intermediaries (eg mediators, arbitrators) to track progress, upload documents, schedule meetings and manage communications.

**Neutrality and impartiality:** Neutrality and impartiality are at the forefront of ODR processes, ensuring fair and impartial facilitation of the dispute resolution process.

**Efficiency and cost-effectiveness:** ODR reduces the time, cost and administrative burden associated with traditional litigation and is known for its efficiency and cost-effectiveness.

**Accessibility:** ODR makes the resolution of disputes more accessible to a wider range of people, including individuals and businesses in remote locations or those with limited access to legal services.

**Documentation and records:** Detailed records and documentation of the resolution process, including agreements, communications and outcomes, are maintained on ODR platforms.

**Security and privacy:** ODR platforms have security and privacy as a priority, with measures in place to protect sensitive information exchanged during the resolution process.

### **'Advantages of ODR**

**Convenience:** By eliminating the need for physical meetings and travel, ODR allows parties to engage in dispute resolution from anywhere, at any time.

**Speed:** ODR processes are often faster than traditional methods, so disputes can be resolved more quickly and delays can be reduced.

**Cost savings:** ODR is a cost-effective option for parties to disputes and reduces costs related to legal fees, travel and other expenses.

**Flexibility:** To accommodate different needs and preferences, ODR offers flexibility in scheduling, communication methods and resolution approaches.

**Global reach:** ODR transcends geographical boundaries, allowing parties from different locations and jurisdictions to participate in resolving a dispute.

**Preservation of relationships:** ODR can preserve relationships between parties by promoting constructive dialogue, cooperation and mutual understanding.

### **Challenges and Issues to Consider**

While there are many benefits to ODR, there are also a number of challenges and considerations that need to be addressed:

**Technological barriers:** Navigating ODR platforms or using digital communication tools effectively may be difficult for some parties.

**Digital divide:** Individuals or communities with limited internet access or digital literacy may have limited access to ODR.

**Security concerns:** Guaranteeing the security and confidentiality of information exchanged in ODR processes is paramount and requires robust cybersecurity measures.

**Quality assurance:** Critical to successful outcomes is maintaining the quality and effectiveness of ODR processes, including the training and competency of facilitators.

**Legal and regulatory compliance:** ODR needs to comply with relevant legal and regulatory frameworks, including data protection laws, consumer rights and jurisdictional issues.

### **Future prospects and developments**

Several trends and developments are shaping the future of ODR:

**AI integration:** Improving automation, data analytics and decision-making capabilities, leading to more efficient and accurate dispute resolution, is the integration of artificial intelligence (AI) into ODR platforms.

**Blockchain technology:** Blockchain technology, particularly in areas such as contract enforcement and digital transactions, is being explored to improve the security, transparency and authenticity of ODR processes.<sup>5</sup>

**Mobile ODR:** Rising mobile technologies are driving development of mobile-enabled ODR platforms that cater to users who prefer to access dispute resolution from their smartphone or tablet.<sup>6</sup>

**Collaborative platforms:** Collaborative ODR platforms facilitating multistakeholder engagement, community mediation and collective dispute resolution are gaining traction.

**Regulatory innovation:** Governments and international organisations increasingly recognise the potential of ODR and are exploring regulatory frameworks to

<sup>5</sup> Matthew Dylag & Harrison Smith (2021): From cryptocurrencies to cryptocourts: blockchain and the financialization of dispute resolution platforms, Information, Communication & Society, DOI: 10.1080/1369118X.2021.1942958

<sup>6</sup> Barnett, Jeremy; Treleaven, Philip. (2018) Algorithmic Dispute Resolution—The Automation of Professional Dispute Resolution Using AI and Blockchain Technologies. The Computer Journal , Volume 61 (3)



support its adoption, addressing legal and ethical considerations.

### **ARTIFICIAL INTELLEGEANCE(AI)**

Artificial Intelligence (AI) is unique in that it can self-develop through intelligent techniques and actions. Understandably, there have been numerous interpretations of AI over time. These definitions vary based on the perspective of different researchers. Some define AI based on its operations, key features, and capabilities, while others define it based on its limitations. Another perspective defines AI by comparing its capabilities to human abilities, stating that AI aims to solve any problem that a human can solve faster. This definition has been critiqued for its ambiguity regarding whether the human or the computer is faster. However, some argue that in the current context, it implies that the computer is superior, leading to the understanding that AI aims to solve any problem better, faster, more consistently, and without fatigue. Similarly, Nilsson defined AI as the devotion to making machines intelligent, and intelligence as the quality that enables an entity to function appropriately and with foresight in its environment. The challenge of agreeing on a definition for AI is linked to the nebulous nature of the term 'intelligence' itself. A practical definition from the field of computer science is: "any device that perceives its environment and takes actions to maximize its chance of successfully achieving its goals." However, this definition is considered too broad as it can apply to a refrigerator that monitors temperature and adjusts its cooling element, and to a highly advanced future computer that offers life counselling to stressed office workers. Hence, precision is key; defining how a device will perform intelligently helps to clarify how the device may enhance human abilities. However, given the ever-evolving nature of AI, any precise definition is likely to be short-lived. This paper considers AI to be a rapidly developing and largely unbounded technology. While the future is uncertain, it is still arguably possible to examine current trends in AI and ODR to discuss potential future developments.

### **THE ROLE OF AI IN ODR**

Research in the field of AI aims to reach a technological benchmark that results in computational systems that act as the independent third party. In this broad-based approach, there's no human intervention in the outcome or in steering the parties towards a

particular situation. Instead, a system undertakes this crucial role. This is often referred to as a digital mediator or arbitrator. Such a system would need to possess communication skills, the ability to understand the parties' desires and concerns, and the expertise to decide on the best course of action for each potential scenario. This is undoubtedly a challenging approach as it's difficult to replicate the cognitive abilities of a human expert in a computer system, along with the ability to perceive the emotions and desires of the parties involved. Moreover, letting machines make binding decisions that impact our lives carries inherent risks.<sup>7</sup>

ODR systems can be classified based on the role that machines may play. The first generation of ODR systems refers to the systems currently in use.<sup>8</sup> The fundamental principle behind these systems is that humans remain central to the planning and decision-making processes. While computational tools are used, they are perceived as mere instruments without any autonomy or significant role in the process. Technologies used in this type of ODR systems include instant messaging, forums, video and phone calls, video conferencing, mailing lists, and more recently, Video Presence. Agent-based technologies may be used but do not play an active or autonomous role. These systems, which are commonly supported by a webpage, represent a necessary initial step before considering more autonomous systems, a feature that could be achieved through the use of intelligent systems.

The second generation of ODR systems is mainly defined by a more efficient use of technical tools. These tools are not just used for connecting the parties and facilitating access to information, but they also aid in idea generation, planning, strategy formulation, and decision-making. In this sense, second-generation systems enhance the first generation with new intelligent and autonomous artefacts. This new generation leverages technologies that allow for consistent connectivity among all involved entities. However, by employing innovative technologies on top of this communication layer, it's possible to offer services with more added value. For the implementation of such services, one can draw from diverse fields such as Artificial Intelligence, Mathematics, or Philosophy. At the intersection of these fields, a range of technologies can significantly empower the previous generation of ODR tools, including artificial neural networks, intelligent software agents, case-based reasoning mechanisms, methods for knowledge representation and reasoning, argumentation, learning, and

<sup>7</sup> Lodder, A. R. & Zeleznikow, J. (2010). *Enhanced Dispute Resolution Through the Use of Information Technology*. Cambridge University Press, ISBN: 978-0521515429

<sup>8</sup> Peruginelli, G. (2002). *Artificial Intelligence in Alternative Dispute Resolution*. In Sartor, G. (Eds.) *Proceedings of the workshop on the Law of Electronic Agents (LEA02)*.



negotiation. Consequently, we progress from a paradigm that uses reactive communication tools for parties to share information, to a virtual environment in which ODR services proactively assist the disputing parties. Research in artificial intelligence (AI) has led to the creation of numerous technologies that are now extensively utilized, often as part of larger systems. These technologies are typically employed to optimize knowledge-based processes, render products more user-friendly through the introduction of intelligent interfaces, or to automate tasks. AI research tackles a wide array of issues, including the development of new problem-solving methodologies, the representation and reasoning of knowledge, planning, learning, natural language processing, motion and manipulation, perception, social and evolutionary intelligence, emotions, and creativity. These techniques can be put to use across a diverse range of sectors including medicine, weather forecasting, finance, transportation, gaming, aviation, and legal systems. In the case of the legal sector, the application of AI techniques is not a new concept and presents opportunities for both fields.

Initially, the first automated systems designed for the legal sector were purely logical systems. However, they were complex to use and highly specific to certain domains, meaning only a select group of trained specialists could operate them. Hence, there was a need for applications that could employ these logical tools in a more generalized manner. Oskamp suggests that researchers should strive to develop practical and intuitive applications that can be used by non-experts<sup>9</sup>. We believe that the optimal way to create such applications is through the integration of AI and legal concepts. This would facilitate the development of Online Dispute Resolution (ODR) platforms capable of efficiently tackling the current challenges faced by the legal sector.

Artificial Intelligence (AI) holds the potential to enhance the efficiency and outcomes of dispute resolution. By studying interventions by third parties and identifying successful strategies, AI can help in resolving conflicts more effectively. It can also pinpoint common solutions to specific disputes and determine recurring conflict sources. When AI's efficiency in decision-making or predictions is integrated with Online Dispute Resolution (ODR), it allows for asynchronous dispute resolution, saving time and costs and offering convenience and increased access. Furthermore, the

automatic documentation in ODR can provide readily available training data for algorithms, thus simplifying the process of acquiring dispute resolution data.

AI can significantly improve both the accuracy and efficiency of the dispute resolution process. By predicting the outcomes of certain disputes or claims, AI can make negotiations more precise and quicker, aligning the parties' perspectives. While parties have always evaluated their case's probable outcome and negotiated accordingly, the ability of algorithms to analyze vast amounts of data opens up new possibilities. This large-scale data analysis can provide crucial information that parties might overlook, serving as a reality check to curb unfounded expectations. However, if parties have unequal access to this technology and relevant databases, efficient bargaining may result in one-sided, imbalanced outcomes. AI can also strengthen efforts to address other issues in current dispute resolution processes, such as human bias. Human bias, even among those committed to egalitarian values, impacts their decision-making. There was a hope that the introduction of technology into dispute resolution could effectively curb implicit bias, aligning with the somewhat naive view of technology as neutral and value-free in the early days of digital technology and internet communication. However, the question arises - what happens to dispute resolution when decision-making is taken over by a machine instead of humans? The initial belief was that the shift to algorithmic decision-making would eliminate human bias and enhance the accuracy of legal outcomes and informal resolutions. Over time, these hopes have faded, at least under the current AI design.

### **Machine translation issues in ODR**

A significant aspect of Alternative Dispute Resolution (ADR) is the communication between the involved parties, often facilitated by a third party.<sup>10</sup> Successful ADR has been historically linked to face-to-face interactions and open communication.<sup>11</sup> This raises the question of the potential impact of AI's impersonal nature in Online Dispute Resolution (ODR) on the process's effectiveness. Despite AI's ability to simulate human behavior, it remains a machine, leading to potential difficulties in human-machine translation when AI is integrated into ODR as a third or fourth party, rather than merely assisting a human third party.<sup>12</sup> Without advanced natural language processing and

<sup>9</sup> Oskamp, A., Tragter, M., & Groendijk C. (1995) AI and Law: What About the Future?. *Artificial Intelligence and Law*, Vol. 3, N. 3, pp. 209-- 215.

<sup>10</sup> Feliksas Petrauskas and Kybartiene E, 'Online Dispute Resolution in Consumer Disputes' (2011) 18 *Jurisprudence* 921, 935.

<sup>11</sup> William Zurilla, 'Alternative Dispute Resolution' (1997) 45 *LA Business Journal* 352.

<sup>12</sup> James E Cabral and others, 'Using Technology To Enhance Access To Justice' (2012) 26 *Harvard Journal of Law & Technology* 241



powerful machine intelligence, translating the necessary inputs for dispute resolution into a form an AI can comprehend could pose a challenge. Additionally, translating AI's outputs into a form that human parties can understand and accept could also be problematic. This is often referred to as the 'fourth party' issue, indicating that AI's integration could significantly affect the dispute resolution process.<sup>13</sup> This translation process could potentially have three main adverse effects. Firstly, reliance on AI in ODR could limit the communication between negotiating parties, which might be disadvantageous in cases where parties intend to maintain business relations. Secondly, an AI system acting as the fourth party may struggle to handle certain explicit principles that influence the negotiation process. Thirdly, AI could have a normative impact on ODR. These potential negative effects are examined further in the following subsections.

#### **From Online Dispute Resolution(ODR) to Artificial Intelligence Resolution(AI-DR)**

The advent of AI, although still in its early stages, is set to redefine the judicial system, dispute resolution methodologies, legal procedures, and the course of justice, whether conducted online or in physical courts. AI promises to address the backlog, inefficiencies, high costs, complexities, and even some inaccuracies and biases that have long plagued the dispute resolution landscape. However, like any new technology, AI brings its own set of challenges and unintended consequences. Critiques of AI often highlight the emergence of new biases, the erosion of privacy, and a lack of transparency. To address such issues, ethical design principles for AI are being proposed, which could potentially alleviate some concerns and foster greater accountability and legitimacy. The principle of legitimacy, which is the bedrock of dispute resolution, must be preserved as we transition towards AI-aided Dispute Resolution (AI-DR). Maintaining this legitimacy requires understanding its foundations and designing dispute resolution processes that not only fulfill objective criteria but also are perceived as legitimate by the disputants. Present guidelines, while emphasizing objective measures, do not adequately address disputants' perceptions - the tasks they trust machines to perform, the types of cases suitable for AI intervention, and the conditions under which such intervention is acceptable. Interestingly, AI is currently more prevalent in criminal justice decisions affecting defendants' liberties, but has not yet significantly penetrated the realm of simple, repetitive

civil disputes. This raises questions about the future development of AI in the informal dispute resolution arena.

The rise of AI-DR also underscores the continuous blurring of boundaries in the dispute resolution landscape. The introduction of Alternative Dispute Resolution (ADR) into courts began the dissolution of boundaries between formal and informal dispute resolution. This process continued with the adoption of Online Dispute Resolution (ODR) in courts, further blurring the line between online and offline arenas. Now, the integration of AI into these processes is further eroding these boundaries, as technology and automation can be incorporated into all stages of these processes, taking over roles previously thought to be exclusively human.

#### **CONCLUSION**

In conclusion, Online Dispute Resolution (ODR) is revolutionizing the way conflicts and disputes are resolved in the digital era. By harnessing technology, embracing innovation, and addressing challenges, ODR has the potential to enhance access to justice, promote fairness, and facilitate efficient resolution of disputes across diverse sectors and communities. It's our belief that AI techniques can make significant advancements in the current state of affairs. Therefore, I advocate for research focused on creating fully automated systems leveraging AI technology. Although achieving this goal may seem idealistic, as most existing literature suggests, the crucial aspect is the emergence of new intelligent tools that can be intuitively used by individuals involved in legal disputes during the pursuit of this goal. These tools will ultimately expedite and enhance access to justice, thereby making it truly fairer. I believe the creation of these advanced expert systems will depend on two distinct AI techniques. Firstly, we conclude that purely rule-based systems aren't viable as they enforce a rigid interpretation of The Law, which is open to various interpretations. Secondly, we also conclude that purely case-based systems can become sluggish and inefficient. The solution lies in a hybrid approach that combines the simplicity of a rule-based system with the comprehensiveness of a case-based one. By merging these two techniques, I am confident that the creation of ODR systems capable of executing efficient intelligent behaviors will soon be feasible.

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