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The Advancement and Role of Artificial Intelligence in Online Dispute Resolution

ROHAN MALIK¹

ABSTRACT

As the digital landscape continues to reshape the legal realm, the integration of Artificial Intelligence into Online Dispute Resolution systems has emerged as a significant development. This paper delves into the evolution and legal implications of Artificial Intelligence in Online Dispute Resolution, examining its impact on traditional legal processes, access to justice, and the role of legal professionals. Artificial Intelligence technologies, including machine learning algorithms and Natural Language Processing (NLP), are revolutionizing Online Dispute Resolution by automating various stages of dispute resolution. From case assessment to decision-making, AI-powered platforms offer efficiency gains and cost savings, potentially transforming the way legal disputes are resolved. However, this transformation raises fundamental questions regarding the role of human judgment, procedural fairness, and regulatory oversight.

Beyond this, the research aims to gauge the extent to which the integration of Artificial Intelligence in Online Dispute Resolution contributes to enhancing individuals' access to justice. It considers the evolving nature of dispute resolution in the context of technological advancements and the role Artificial Intelligence plays in making justice more accessible to a diverse range of individuals.

Keywords: Artificial Intelligence, Online Dispute Resolution.

I. INTRODUCTION

The rapid evolution of technology has significantly impacted various aspects of our lives, and the realm of dispute resolution is no exception. In recent years, Artificial Intelligence has shown and emerged as a transformative force in revolutionizing the way conflicts are addressed and resolved, particularly in the context of online dispute resolution. Online Dispute Resolution, a branch of alternative dispute resolution, harnesses digital platforms and technologies to facilitate the resolution of disputes without the need for traditional, in-person methods. The Internet also can transform business and governance. ²

¹ Author is a student at Amity Institute of Advanced Legal Studies, Amity University, Noida, India.

² Gowling WLG, 5 Ways the Internet Has Changed Business, Mondaq, (Mar. 25, 2024, 10:04 AM), <https://www.mondaq.com/canada/advertising-marketing--branding/741090/5-ways-the-internet-has-changed-business>

Law fundamentally revolves around the resolution of disputes, and it is unsurprising that discussions span not only the nature of the law itself but also the methodologies employed for resolving conflicts. However, there is a widespread acknowledgment that a notable drawback in resolving disputes through the judicial system lies in its time-consuming nature, leading to substantial costs associated with litigation.

Progress in artificial intelligence and automation carries the dual potential of saving labor and simultaneously exacerbating global inequality and poverty. It fosters dynamics where a few individuals with advanced skills and countries leading in technological advancements gain significant advantages.³

Consequently, an increasing number of parties are turning to Alternative Dispute Resolution (ADR) mechanisms, which not only prove to be more cost-effective but also offer the opportunity for creative solutions that mutually benefit all parties involved.⁴ Within the broader scope of ADR, Online Dispute Resolution is emerging as a pivotal tool, representing the fusion of modern technology with existing ADR techniques. Over the last few decades, Online Dispute Resolution has gained prominence, and its significance continues to grow. Notably, the distinction between Online Dispute Resolution and traditional legal systems is likely to become increasingly blurred in the future.

(A) What Is Artificial Intelligence and Its Benefits

Artificial Intelligence is the emulation of human intelligence in machines, programmed to think and learn like humans. It involves creating algorithms and computational models enabling computers to execute tasks requiring human-like intelligence. Artificial Intelligence includes diverse technologies like machine learning, natural language processing, computer vision, and robotics.

Artificial Intelligence has the ability to assist in automate repetitive and mundane tasks, further freeing up human resources for more complex and creative endeavors. This leads to increased efficiency and productivity in various industries. Artificial Intelligence systems can further analyze large datasets with high accuracy and precision and reducing the chances of errors that may occur in manual processes. Artificial Intelligence applications in business operations, supply chain management, and logistics can optimize processes, enhance forecasting, and

³ Mr. Anton Korinek, Mr. Martin Schindler, and Joseph Stiglitz, Technological Progress, Artificial Intelligence, and Inclusive Growth, IMF eLibrary, (Mar 1, 2024, 3.00 PM), <https://www.elibrary.imf.org/view/journals/001/2021/166/article-A001-en.xml>

⁴ Ngo Nguyen Thao Vy, AI Implementation in ODR: A Game-Changer or a Troublemaker of Data Protection, Sciendo, (Mar. 1, 2024, 4.30 PM), <https://sciendo.com/article/10.2478/vjls-2023-0001>

improve overall efficiency

II. THE REVOLUTION OF ARTIFICIAL INTELLIGENCE

Artificial Intelligence, with its unparalleled ability to process vast datasets, discern patterns, and make sophisticated decisions, is at the forefront of revolutionizing online dispute resolution mechanisms. The infusion of AI technologies into Online Dispute Resolution systems heralds a new era of advancements, showcasing the following transformative features:

1. **Automated Case Triage:** AI algorithms excel in dissecting dispute intricacies, categorizing cases based on factors such as complexity, urgency, and context. This automated triage system enhances the resolution process by directing cases toward the most suitable form of intervention, whether it involves automated negotiation, mediation, or adjudication.
2. **Natural Language Processing (NLP):** The integration of AI-driven NLP empowers Online Dispute Resolution systems to comprehend and interpret natural language, facilitating nuanced and seamless communication between disputing parties. This capability not only ensures a deeper understanding of the issues at hand but also contributes to smoother interactions in written exchanges, rendering the resolution process more accessible and user-friendly.⁵
3. **Predictive Analytics:** AI leverages historical data from previous disputes to predict potential outcomes and propose optimal settlement terms. Through the analysis of patterns and precedents, predictive analytics arm parties with valuable insights, enabling them to make well-informed decisions during the negotiation phase, thereby enhancing the overall efficacy of the resolution process.
4. **Virtual Mediation and Arbitration:** AI-powered virtual agents, employing machine learning, step into the roles of mediators or arbitrators, guiding parties through the intricacies of the resolution process. These virtual entities continuously adapt and refine their mediation techniques based on real-time feedback, thereby not only enhancing the efficiency of online mediation and arbitration but also providing a dynamic and evolving approach to conflict resolution.⁶

⁵ The Dynamic Duo of AI and Blockchain Transforming Business Processes, Block Stack, (Jan. 2, 2024, 6.15 PM) <https://blockstack.tech/the-dynamic-duo-of-ai-and-blockchain-transforming-business-processes/>

⁶ Virtual Mediation, Arbitration and ADR Services, JAMS, (Jan. 2, 2024, 7.25 PM) <https://www.jamsadr.com/online?tab=overview>

III. IMPORTANCE OF ARTIFICIAL INTELLIGENCE IN VARIOUS ASPECTS IN LEGAL MATTERS

Implementing AI within the ODR framework as outlined by the RBI would streamline the chargeback or dispute process significantly. Currently, the entire process is labor-intensive, starting from the moment a cardholder initiates a dispute until its resolution. Each document traversing through this system is manually processed, requiring distinct teams for various document types, such as images and transaction receipts. This manual approach proves challenging and burdensome, involving the coordination of extensive teams and leading to increased operational expenses.⁷

This specialized area focuses on the unique intersection of AI technologies and the resolution of disputes through online platforms. As technology continues to advance, the literature in this domain has seen a surge, emphasizing both descriptive and evaluative perspectives. The descriptive aspect of the literature delves into the current situation, exploring what is happening and forecasting what is likely to happen in the realm of AI in Online Dispute Resolution. Scholars and practitioners have documented the implementation of AI technologies in Online Dispute Resolution platforms, detailing their functionalities in handling disputes, facilitating communication, and streamlining resolution processes. This descriptive literature provides a comprehensive overview of the practical applications of AI in the Online Dispute Resolution landscape.

(A) Defining The Concepts And Benefits Of Online Dispute Resolution

Online Dispute Resolution (ODR) is a digital method for resolving conflicts in the online sphere. It uses technology to facilitate resolution without physical presence or traditional legal processes. ODR employs online platforms and alternative dispute resolution methods to address conflicts in a virtual environment.

Online Dispute Resolution offers several benefits, enhancing efficiency and accessibility in resolving conflicts in the digital realm. Online dispute resolution allows parties to participate in dispute resolution processes from anywhere, eliminating the need for physical presence and making it more convenient for individuals or businesses involved. By conducting dispute resolution online, Online Dispute Resolution reduces the costs associated with travel, accommodation, and traditional legal proceedings, making conflict resolution more affordable for all parties involved. Its processes are often faster than traditional dispute resolution methods,

⁷ Praveen Krishna Dev, Impact of AI on Online Dispute Resolution, Express Computer, (Jan. 5, 2024, 9.00 PM) <https://www.expresscomputer.in/news/impact-of-ai-on-online-dispute-resolution/100341/>

accelerating the resolution timeline and enabling quicker access to justice or settlement. Individuals or businesses from diverse geographical locations can access platforms, promoting inclusivity and providing a broader range of options for resolving disputes. Online Dispute Resolution relies on digital documentation and communication, reducing the need for extensive paperwork and streamlining the overall process. The platforms often offer flexible scheduling and various communication.

(B) Ethical Application Of Artificial Intelligence In Online Dispute Resolution⁸

AI algorithms should be designed and regularly audited to ensure they are unbiased and do not perpetuate existing prejudices. The goal is to provide equitable outcomes for all parties involved. Clearly communicate how AI is utilized in the ODR process to all parties involved. Transparency builds trust and helps users understand the role of AI in decision-making. Obtain informed consent from participants regarding the use of AI in the dispute resolution process. Users should be aware of how AI technologies are employed and the potential impact on the outcome. Implement robust data protection measures to safeguard the privacy and confidentiality of user information. AI systems should comply with relevant data privacy regulations and standards.

Clearly define the jurisdiction and applicable laws governing the process. Determine which legal system will apply in the resolution of disputes and ensure compliance with relevant regulations. Establish mechanisms to ensure the enforceability of decisions made through the process. Clarify the legal standing and recognition of outcomes within the relevant legal framework. Adhere to data protection and privacy regulations to safeguard the confidentiality of user information. Clearly communicate data handling practices and obtain informed consent from participants.

A significant obstacle with generative AI tools is their lack of transparency. When the training methods and datasets are undisclosed, it becomes challenging to determine if the generated text aligns with legal and ethical standards. Numerous nations and global organizations have put forth guidelines for AI that prioritize transparency. Transparency isn't just a standalone necessity but also a foundational element for fulfilling other proposed principles, guaranteeing the accountability and dependability of AI systems. Transparency fosters trust in the outcomes delivered by AI solutions.

⁸ André Guskow Cardoso, Dispute resolution: artificial intelligence (AI) and ethical imperatives, Lexis Nexis, (Feb. 3, 2024), <https://www.lexisnexis.co.uk/blog/research-legal-analysis/dispute-resolution-artificial-intelligence-ai-ethical-imperatives>

IV. THE FUTURE OF ARTIFICIAL INTELLIGENCE IN DISPUTE RESOLUTION

The future of Artificial Intelligence in dispute resolution holds exciting possibilities, with advancements that aim to improve efficiency, accessibility, and fairness in resolving conflicts. Here are some potential developments in the future of Artificial Intelligence in dispute resolution. Artificial Intelligence algorithms will continue to evolve, becoming more sophisticated in analyzing complex legal issues and providing nuanced decision-making support for dispute resolution.

Predictive Analytics for Artificial Intelligence may leverage predictive analytics to assess the likely outcomes of legal cases based on historical data and precedent. This can assist parties in making informed decisions about settlement offers or strategies.

Artificial Intelligence systems will become more dynamic and adaptive, adjusting their approaches based on real-time feedback and continuously improving their performance in handling disputes. Advancements in NLP will enable Artificial Intelligence systems to better understand and interpret natural language, improving communication between users and the ODR platform and enhancing the quality of dispute resolution interactions. However, Artificial Intelligence encounters certain limitations. For instance, the effectiveness of its output depends heavily on the quality of the gathered data, the algorithms employed, and the precision of the results. Additionally, Artificial Intelligence lacks the emotional intelligence and human touch that mediators contribute to the process. Notably, even in British Columbia, there is a provision for a human Civil Resolution Tribunal (CRT) as the final step before parties proceed to present their case for ultimate resolution. Mediators bring the ability to interpret body language, offer empathy and understanding, qualities often sought by individuals engaged in the judicial system, and discern the crucial needs and desires of the parties involved. They possess the flexibility to consider unconventional solutions beyond the typical monetary terms of a settlement.

Moreover, a significant challenge associated with judgments delivered by Artificial Intelligence is the absence of reasoning, leaving litigants without a means to comprehend the precise rationale behind a decision. Addressing this issue remains a considerable distance away. Even if transparency issues within most machine learning systems could be resolved, the decision-making process of an Artificial Intelligence system fundamentally differs from human reasoning. It relies on statistical weightings and biases determined by the training data, making the "reasoning" provided by an Artificial Intelligence system less illuminating about the specific elements of evidence that played a decisive role.

This, in turn, implies that Artificial Intelligence in Online Dispute Resolution has the capacity to significantly enhance access to legal resources for individuals. The optimistic outlook extends to the notion that Artificial Intelligence in Online Dispute Resolution is not far from the current reality of employing automated processes in dispute resolution. Commentators argue that access to the law could be further increased by utilizing Artificial Intelligence to adjudicate low-value civil cases through Online Dispute Resolution platforms. This approach is seen to efficiently handle fewer complex cases, allowing human resources to be allocated to more intricate and nuanced legal matters. Furthermore, proponents of the optimistic perspective suggest that Artificial Intelligence has the potential to address highly complex disputes, overcoming traditional challenges associated with emotional discussions and impassioned viewpoints.

Despite the optimistic perspectives on AI-assisted Online Dispute Resolution the current literature reflects a diverse range of opinions, with detractors expressing concerns about the potential drawbacks of these proposed technologies. In contrast to assertions suggesting a positive impact on access to justice, counterarguments posit that AI-assisted Online Dispute Resolution may predominantly benefit wealthier clients and firms, potentially exacerbating existing disparities in access to justice for those who cannot afford such services. This critical viewpoint underscores the importance of addressing socio-economic inequalities that could arise in the adoption of Artificial Intelligence in the legal domain. A notable segment of commentators raises apprehension regarding the potential negative effects of automated Online Dispute Resolution processes. One primary concern revolves around the lack of proper oversight in AI-driven systems, leading to potential issues related to transparency, accountability, and fairness.

There is a fear that an overreliance on automated ruling procedures might result in blind adherence to decisions without sufficient human review, raising questions about the ethical and legal implications of such a scenario. These concerns are echoed by advocates of the AI-as-a-fourth-party perspective, such as those mentioned earlier. They argue that introducing an additional non-human party into the dispute resolution process, especially one with non-human characteristics, may be detrimental to the overall outcome. The fear is that relying too heavily on AI may compromise the human-centric aspects of decision-making, including empathy, context comprehension, and nuanced understanding of the unique circumstances surrounding each dispute.

The literature thus reveals a lack of consensus on the precise effects that AI-based Online Dispute Resolution might have. While some foresee increased efficiency and broader access to

justice, others raise valid concerns about potential biases, lack of oversight, and the risk of overreliance on automated processes. This divergence in opinions highlights the complexity of integrating AI into legal practices and the need for thorough consideration of ethical, societal, and procedural implications. It also underscores the importance of ongoing analysis and discussion within the academic and professional communities to address potential challenges and refine the implementation of AI in the realm of dispute resolution.

Arguably, the current utilization of AI technology in the field of Online Dispute Resolution can be categorized into two primary modes: a supportive capacity and a substitutive one. To understand these applications better, one can draw parallels with traditional models of dispute resolution, where parties negotiate concurrently, often with the assistance of a third-party mediator or arbitrator. In the traditional model, when AI is employed in a support role, the third party utilizes it as a tool to enhance their capabilities. In essence, AI acts as an enabler or supplement to the work of the third party. For instance, AI may be used to streamline processes, aid in information retrieval, or assist in complex calculations. The primary function of the third party remains intact, with AI contributing as a supportive tool to facilitate more efficient resolution processes. Conversely, in a substitutive capacity, AI assumes essential functions traditionally associated with the third party. This can involve AI making decisions or engaging in inquiries on behalf of the parties involved. In this scenario, AI takes on a more active role, potentially handling aspects of the negotiation process that would traditionally be within the purview of a human mediator or arbitrator. It's important to note that the concept of substitutive use doesn't necessarily require the complete replacement of a third-party negotiator with an AI entity. Instead, it signifies that the AI system assumes certain responsibilities or tasks within the negotiation process, acting as a collaborator rather than a complete substitute.⁹

V. INDIA'S INVOLVEMENT IN THE REVOLUTION OF ARTIFICIAL INTELLIGENCE

AI applications thus far have been predominantly propelled by private sector initiatives, particularly in the realm of consumer goods. Given the escalating scale and consequences of this technology, it is crucial for government policymakers to recognize and address its implications. To fully harness the benefits of the AI revolution, India needs a strategic policy for promoting innovation, adoption, and integration of AI across diverse sectors, moving beyond traditional consumer goods and IT services. Addressing the short, medium, and long-term goals, and aligning existing policies, such as those led by Modi, to embrace and highlight

⁹ Artificial Intelligence and the Future of Online Dispute Resolution In India, ADR Times (Jan. 10, 2024, 11.50 PM) <https://www.adrtimes.com/online-dispute-resolution-in-india/>

AI, will enable India to unlock the technology's full potential. While India has gained from AI's rapid growth, a lack of dedicated national strategies for AI may hinder its competitiveness against global leaders like the United States and China.¹⁰

Reports from committees on Artificial Intelligence (AI) highlight the anticipated transformation in both work and lifestyle due to this technology. Countries worldwide are embracing AI due to its potential positive effects on the economy, considering it as a pivotal aspect of the fourth industrial revolution. The Government of India, recognizing this trend, aims to foster research, development, and adoption of such technologies. To formulate a policy framework on AI and assess its potential impact on the economy and society, the Ministry of Electronics and Information Technology (MeitY) established four AI committees. The reports generated by these committees are accessible on the MeitY website.¹¹

VI. CHALLENGES AND RISK IN IMPLEMENTATION OF ARTIFICIAL INTELLIGENCE IN ONLINE DISPUTE RESOLUTION

Specifically, for the implementation of AI in ODR, some possible challenges and risks associated with the same may include:

1. **Maintaining the confidentiality and security of data:** Online Dispute Resolution (ODR) platforms frequently deal with confidential personal and financial data. AI systems need to be structured to uphold data privacy and adhere to pertinent regulations, such as the General Data Protection Regulation (GDPR).
2. **Finding equilibrium between automation and human input:** Relying excessively on AI could result in the oversight of critical subtleties in disputes necessitating human comprehension and empathy. Achieving the appropriate blend of AI-driven automation and human intervention is vital to uphold equity and efficacy in the resolution procedure.
3. **Ethical considerations:** The integration of AI into ODR could evoke ethical dilemmas regarding fairness, bias, and the possibility of unequal access to justice. Addressing these concerns requires continuous assessment and improvement of AI systems within the framework of ODR.

Despite the potential advantages, the incorporation of AI in the legal field faces hurdles. A major issue revolves around the opacity and complexity of AI algorithms. Legal judgments

¹⁰ Shashi Shekhar Vempati, *India and the Artificial Intelligence Revolution*, Carnegie, (Jan. 29, 2024, 11:00 AM) <https://carnegieindia.org/2016/08/11/india-and-artificial-intelligence-revolution-pub-64299>

¹¹ *Artificial Intelligence Committees Reports*, Ministry of Electronics and Information Technology, (Mar. 5, 2024 10:00 AM) <https://www.meity.gov.in/artificial-intelligence-committees-reports>

carry significant implications, and utilizing opaque algorithms raises concerns regarding accountability and the assurance of fair proceedings. Furthermore, there are worries regarding bias present in AI systems. These biases have the potential to inadvertently reinforce existing inequalities within the legal system, including racial or gender disparities. Combating bias in AI necessitates meticulous consideration of data selection, algorithmic design, and continuous oversight to lessen unintended ramifications.¹²

By recognizing and tackling these obstacles, it is feasible to capitalize on AI's potential in ODR while reducing risks and ensuring a just, trustworthy, and efficient dispute resolution mechanism. Given the hurdles and potential pitfalls linked with integrating AI into ODR, as discussed earlier, a deliberate strategy for development, implementation, setup, and education becomes imperative to improve fairness, dependability, and efficacy.¹³

Collaboration among experts in artificial intelligence, legal professionals, and consumer protection agencies plays a crucial role in the design of AI systems tailored to meet the specific needs of Online Dispute Resolution and tackle concerns like privacy, data security, and ethical dilemmas. By forming interdisciplinary teams, organizing regular meetings and workshops, engaging in joint research and development efforts, and establishing guidelines and best practices, stakeholders can effectively collaborate to develop and enhance AI-driven ODR systems. Furthermore, through pilot initiatives, testing phases, and continuous feedback mechanisms, these systems can be adjusted to adapt to the changing landscape of disputes and legal frameworks. By recognizing and tackling challenges through collaborative endeavors and ongoing monitoring, it becomes feasible to leverage the potential of AI in ODR while managing potential risks effectively.

VII. CONCLUSION

The advancement and integration of Artificial Intelligence in Online Dispute Resolution marks a transformative shift in how conflicts are managed and resolved in the digital age. AI technologies, ranging from natural language processing algorithms to machine learning systems, offer unprecedented opportunities to streamline dispute resolution processes, enhance access to justice, and improve the efficiency and fairness of online dispute resolution platforms. However, while the role of AI in ODR holds great promise, it also presents several challenges and ethical considerations. Concerns regarding privacy, transparency, bias, and accountability

¹² Praveen Kumar Mishra, *AI And The Legal Landscape: Embracing Innovation, Addressing Challenges*, Live Law, (Mar. 25 2024 7:31 PM) <https://www.livelaw.in/lawschool/articles/law-and-ai-ai-powered-tools-general-data-protection-regulation-250673>

¹³ UNCAT, (Apr. 10, 2024), https://unctad.org/system/files/official-document/tcsditcinf2023d5_en.pdf

must be carefully addressed to ensure the responsible and equitable deployment of AI technologies in dispute resolution contexts. Additionally, there is a need for ongoing research, collaboration, and regulatory frameworks to harness the full potential of AI in ODR while safeguarding against unintended consequences and ensuring the protection of users' rights and interests.

While the advancement and role of AI in online dispute resolution hold immense promise for improving access to justice and enhancing the efficiency of conflict resolution processes, it is imperative that we proceed thoughtfully and responsibly. By fostering collaboration, transparency, and innovation, we can leverage AI to create more accessible, equitable, and effective dispute resolution mechanisms that benefit individuals, businesses, and communities worldwide.
