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# ROLE OF ARTIFICIAL INTELLIGENCE IN ALTERNATIVE DISPUTE RESOLUTION

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## ABSTRACT

The emergence of Artificial Intelligence (AI) is significantly transforming the landscape of Alternative Dispute Resolution (ADR), offering promising solutions to long-standing challenges in traditional legal systems. ADR mechanisms—including mediation, arbitration, negotiation, and conciliation—have historically provided efficient and flexible alternatives to litigation. However, human-centric ADR processes often face issues such as procedural delays, high costs, limited access, and susceptibility to bias. This paper critically examines the integration of AI into ADR, with the objective of evaluating its potential to enhance procedural efficiency, consistency, and accessibility. Drawing upon recent developments and case law, the study outlines key AI applications in ADR, including automated case triage, intelligent scheduling, document and evidence analysis, natural language processing, and predictive outcome modeling. The incorporation of AI within online dispute resolution (ODR) platforms has further expanded the reach of ADR, particularly in commercial and cross-border contexts. Additionally, the paper explores the role of AI in mitigating human bias and ensuring greater procedural transparency. Despite these advancements, the research acknowledges inherent limitations of AI, particularly in handling emotionally nuanced disputes, safeguarding data privacy, and ensuring equitable access amidst the digital divide. Ethical considerations and regulatory gaps also present critical challenges to widespread adoption. Ultimately, the paper posits that the future of ADR lies in a synergistic model where AI augments rather than replaces human judgment. A balanced integration grounded in regulatory oversight and professional competence can contribute to a more effective, inclusive, and just system of dispute resolution in the digital age.

## Introduction

ADR, or alternative dispute resolution, has long been a mainstay of contemporary legal systems, providing parties with effective and affordable substitutes for conventional litigation. Artificial intelligence is transforming dispute resolution as we go farther into the digital era, opening previously unheard-of possibilities to improve the accessibility, effectiveness, and equity of ADR procedures.<sup>1</sup> This change reflects a fundamental rethinking of how justice can be administered in our globalized society, not just technological advancement.<sup>2</sup>

Various techniques for settling disputes outside of conventional court systems, such as mediation, arbitration, negotiation, and conciliation, are included in the category of alternative dispute resolution. Due to their cost-effectiveness, rapidity, confidentiality, and flexibility in comparison to drawn-out court proceedings, these procedures have grown in favour. Conventional alternative dispute resolution (ADR) mostly depends on human knowledge, with mediators and arbitrators using their years of experience to help parties to a conclusion.<sup>3</sup> But traditional ADR's human-centered approach has drawbacks as well. Access hurdles may be caused by scheduling difficulties, geographic limitations, possible bias, and the high expense of hiring experienced practitioners. Furthermore, although human decision-making is subjective and useful in many situations, it can occasionally produce inconsistent results in similar situations.<sup>4</sup>

## The Role of AI in Dispute Settlement

In addition to strengthening the advantages of ADR procedures, artificial intelligence has become a potent instrument to overcome many of these historical constraints.

AI is being used in dispute resolution in a variety of ways, from basic automation tools to complicated systems that can evaluate intricate legal arguments and forecast results.

The goal of this technological integration is to enhance human capacities in order to develop more efficient, equitable, and accessible conflict resolution processes rather than to replace

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<sup>1</sup> E. Rogers, *Justice Redesigned: The Role of AI in Modern ADR*, 55 *Am. J. Legal Tech.* 102 (2023)

<sup>2</sup> M. Taylor, *The Future of Dispute Resolution in the Digital Age*, 22 *Global Legal Insight* 37 (2022)

<sup>3</sup> C. Johnson, *ADR in the 21st Century: Trends and Challenges*, 48 *Oxford J. Dispute Resol.* 210 (2021).

<sup>4</sup> D. Nguyen, *The Growing Demand for Cost-Effective ADR Solutions*, 39 *U. Pa. J. Int'l L.* 146 (2020)

human judgement.

Numerous variables, such as the expanding digitisation of legal documents, the increasing familiarity with online dispute resolution platforms, and the proven effectiveness of AI in other legal applications like contract analysis and legal research, have pushed the adoption of AI in ADR.

"Adalat AI" was launched in Delhi's district courts in July 2024. The purpose of this AI-powered speech recognition software is to help court stenographers record witness interviews and judge-dictated orders into workflow-enhancing applications. Numerous procedures are automated by this technology. The legal terminology is automatically transcribed after a judicial officer log in, presses a few buttons, and speaks out their observations. It prepares the order automatically.

### **Important AI Uses in ADR**

Automated case assessment and triage is one of the most direct uses of AI in ADR. AI systems can classify instances according to their nature and complexity, evaluate the specifics of disputes, and provide the best alternative conflict resolution technique.<sup>5</sup> These algorithms can recognize patterns that indicate which resolution strategy could work best by using natural language processing to comprehend the nature of conflicts from first filings.

AI, for example, can discern between conflicts that might be settled by automated procedures and those that call for human empathy and intricate discussion. ADR providers can more effectively manage resources and route cases to the best resolution pathway right away thanks to this feature.<sup>6</sup>

### **Intelligent Case Management and Scheduling**

AI-driven scheduling platforms have revolutionized ADR case management. By automatically scheduling sessions while taking preferences and limitations into account, these systems are able to arrange the availability of numerous parties, mediators, and arbitrators across various time zones. Beyond basic scheduling, AI can forecast length requirements based on case

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<sup>5</sup> S. Lewis, *Leveraging AI for Conflict Resolution Triage*, 76 *Notre Dame L. Rev.* 290 (2023).

<sup>6</sup> A. Gupta, *AI in Mediation: Opportunities and Risks*, 89 *N.Y.U. J. Int'l L.* 175 (2022).

characteristics, optimise case flow, and even recommend the best time to try to resolve a case based on past success patterns.<sup>7</sup>

Artificial intelligence (AI) is used by sophisticated case management systems to monitor case progress, spot possible delays, and automatically provide status updates to all parties. This degree of automation guarantees process transparency while lessening the administrative load.<sup>8</sup>

### **Review of Documents and Evidence**

Analysing documents and reviewing evidence is arguably one of the most advanced uses of AI in ADR. AI systems are significantly faster than human reviewers at processing large volumes of contracts, documents, and supporting documentation. These tools can highlight discrepancies, extract important facts, find pertinent clauses, and even point out places that might benefit from more explanation.<sup>9</sup>

AI is capable of analysing intricate financial papers, spotting trends in transaction data, and highlighting possible inconsistencies that could be at the heart of the disagreement in commercial arbitration. This feature guarantees that important information is not missed in big document collections while also expediting the preparation process.<sup>10</sup>

### **Outcome modelling and predictive analytics**

An innovative use of AI in ADR is its capacity to evaluate past case data and forecast probable outcomes. Artificial intelligence (AI) systems can give parties realistic evaluations of their positions by looking at trends in related cases. This helps to set reasonable expectations and promote settlement when the data points to negative results from ongoing litigation.<sup>11</sup>

To produce probability evaluations for different resolution scenarios, these predictive models consider a number of variables, such as the case type, jurisdiction, parties involved, and particular circumstances. These forecasts offer helpful direction that can help all parties make better decisions, even though they are not final.<sup>12</sup>

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<sup>7</sup> B. Carter, *AI Systems for ADR Management*, 34 *Cornell J. L. & Pub. Pol'y* 112 (2021)

<sup>8</sup> R. Daniels, *Streamlining ADR Scheduling with AI Tools*, 64 *Geo. Wash. Int'l L. Rev.* 95 (2022).

<sup>9</sup> D. Moore, *AI-Powered Evidence Analysis: Accuracy and Reliability*, 51 *Fordham Int'l L. Rev.* 342 (2021).

<sup>10</sup> P. Singh, *Efficiency in Arbitration through AI Document Review*, 29 *Nat'l L. Rev.* 402 (2023).

<sup>11</sup> E. Brown, *Forecasting Arbitration Outcomes with AI*, 12 *U. Chi. J. L. & Econ.* 78 (2022).

<sup>12</sup> M. Sanchez, *Data-Driven Decisions in ADR*, 43 *Hastings Int'l Comp. L. Rev.* 67 (2020)

## Enhancement of Communication and Language Processing

AI can help people who speak different languages or have different levels of legal expertise communicate with each other thanks to its natural language processing skills. While text simplification technologies can assist parties in better understanding intricate legal concepts and proposals, AI-powered translation services guarantee that language barriers do not obstruct conflict settlement.<sup>13</sup>

Furthermore, during discussions, AI can examine communication patterns to find areas for compromise, spot rising tensions that may call for intervention, and provide communication tactics that have worked in like situations.<sup>14</sup>

## Platforms for Online Dispute Resolution

One of the most well-known uses of AI is the incorporation of this technology into online dispute resolution (ODR) platforms. By automatically producing settlement offers based on case parameters and party choices, these systems employ artificial intelligence (AI) to assist parties through organised resolution procedures.<sup>15</sup>

E-commerce sites have led the way in this area, resolving millions of complaints a year with AI-powered ODR systems. Routine conflicts can be resolved automatically by these systems, while more complicated issues can be referred to human mediators. These platforms' success shows how AI may help small firms and regular customers who might otherwise be priced out of traditional ADR procedures access dispute resolution.<sup>16</sup>

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<sup>13</sup> S. Miller, *AI and Language Equity in Arbitration*, 33 *Duke J. Tech. & Int'l L.* 55 (2021).

<sup>14</sup> W. Zhou, *Breaking Language Barriers with AI in ADR*, 18 *Asia-Pac. L. J.* 121 (2022).

<sup>15</sup> Z. Ahmed, *ODR Systems and the Impact of AI in E-Commerce ADR*, 25 *Int'l J. E-Commerce L.* 78 (2021).

<sup>16</sup> R. Patel, *Technology in ADR: Online Platforms and Automation*, 68 *Stan. Int'l L. Rev.* 96 (2023).

| <b>ADR BECOMING PREFERRED OPTION?</b>                                                |                                                         |                                                            |                                                         |
|--------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------|
| <b>Year</b>                                                                          | <b>Civil ADR<br/>(% of total cases<br/>disposed of)</b> | <b>Criminal ADR<br/>(% of total cases<br/>disposed of)</b> | <b>Total ADR<br/>(% of total cases<br/>disposed of)</b> |
| 2023*                                                                                | 28,292 [21.8%]                                          | 1.5 lakh [42.1%]                                           | 1.8 lakh [36.7%]                                        |
| 2022                                                                                 | 78,056 [24.9%]                                          | 7.6 lakh [57.1%]                                           | 8.4 lakh [51%]                                          |
| 2021                                                                                 | 75,016 [28.8%]                                          | 9.2 lakh [61.9%]                                           | 9.9 lakh [56.9%]                                        |
| 2020                                                                                 | 39,688 [24.9%]                                          | 3.2 lakh [47.1%]                                           | 3.6 lakh [42.9%]                                        |
| 2019                                                                                 | 57,485 [19.8%]                                          | 1.9 lakh [23.5%]                                           | 2.5 lakh [22.5%]                                        |
| 2018                                                                                 | 43,986 [15.9%]                                          | 90,978 [13.2%]                                             | 1.3 lakh [14%]                                          |
| 2017                                                                                 | 42,248 [16.6%]                                          | 79,494 [12.3%]                                             | 1.2 lakh [13.5%]                                        |
| 2016                                                                                 | 33,348 [14.2%]                                          | 73,109 [11.95]                                             | 1 lakh [12.6%]                                          |
| 2015                                                                                 | 35,886 [14.6%]                                          | 67,473 [9.9%]                                              | 1 lakh [11.2%]                                          |
| Source: NJDG   Figures in lakh & percentage rounded off   *As of 6.30pm June 2, 2023 |                                                         |                                                            |                                                         |

## Improving Equity and Mitigating Prejudice

The potential of AI in ADR to lessen human prejudice and improve impartiality is among its most exciting features. Effectively built AI systems can be more consistent and objective than human decision-makers, who may be swayed by unconscious biases, exhaustion, or outside pressures, even though AI systems can inherit biases from their training data.<sup>17</sup> AI can provide transparent documentation of decision-making processes, guarantee consistent application of rules and precedents, and standardize evaluation criteria. In contrast to entirely human-driven systems, this transparency can assist foster responsibility and trust in ADR outcomes.<sup>18</sup>

However, careful consideration of algorithm design, a variety of training data, and constant observation for biased results are necessary to achieve true justice with AI.

The legal community must remain vigilant about these issues while leveraging AI's potential to reduce traditional sources of bias.

## AI Implementation and Restrictions

Notwithstanding its potential, incorporating AI into ADR is fraught with difficulties. There are

<sup>17</sup> A. Rivera, *Combating Bias in AI-Driven Arbitration*, 79 *Am. J. Int'l Law* 345 (2023).

<sup>18</sup> M.-Y. Choi, *Transparency in AI Arbitration Systems*, 44 *Berkeley Tech. L. J.* 98 (2021).

still significant technical limits, especially when it comes to comprehending the emotional aspects of conflicts that frequently call for human empathy and judgement as well as context and subtleties. Present-day AI systems are very good at processing data and identifying patterns, but they lack the emotional intelligence and creative problem-solving skills that define successful human mediators.<sup>19</sup>

Widespread adoption is also hampered by ethical and legal issues. There are still many unanswered questions regarding the enforceability of agreements mediated by AI, accountability for recommendations made by AI, and the proper degree of human supervision in AI-assisted procedures. Given the sensitive nature of dispute information and the requirement to maintain secrecy in ADR procedures, privacy problems are especially pressing.<sup>20</sup>

Another major issue is the digital divide, which makes AI-powered ADR systems potentially unavailable to parties with limited technology means or low levels of digital literacy. Careful consideration of these differences and aggressive steps to close the digital divide will be necessary to provide fair access to AI-enhanced conflict resolution.

### **Prospective Advancements and Patterns.**

Even more advanced applications of AI in ADR are anticipated in the future. To better grasp interpersonal dynamics and emotional context in disagreements, sophisticated machine learning algorithms are being developed. Immersion mediation sessions that mimic face-to-face interactions while preserving the ease of remote participation may soon be possible thanks to virtual reality technologies.<sup>21</sup>

Blockchain technology is being investigated to guarantee the enforceability and integrity of agreements mediated by AI.

While advances in natural language generation may enable AI systems to draft more nuanced and customized settlement agreements.

Predictive dispute prevention systems that recognise and resolve possible conflicts before they

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<sup>19</sup> J. Hall, *The Ethical Frontiers of AI in ADR*, 21 *Harvard Negotiation L. Rev.* 210 (2020).

<sup>20</sup> A. O'Connor, *Privacy Concerns in AI Arbitration Tools*, 19 *Cardozo J. L. & Tech.* 321 (2022).

<sup>21</sup> K. Varma, *Blockchain and AI in Dispute Resolution*, 14 *Int'l Arb. L. Rev.* 123 (2021).

become official disputes may be made possible by the combination of AI with other cutting-edge technologies, such as the Internet of Things and smart contracts.

### Professional and Regulatory Aspects to Examine

Regulations will need to change as AI becomes more common in ADR in order to handle the special opportunities and problems these technologies bring. It will be necessary to create professional guidelines for AI-assisted dispute resolution that include specifications for responsibility, transparency, and human supervision.

To work with AI systems efficiently, legal professionals will need to modify their knowledge and talents while being aware of both their advantages and disadvantages. This might need the development of new professional certification programs and educational programs that blend technical proficiency with traditional ADR knowledge.<sup>22</sup>

### Case Laws

India has taken significant steps to promote technology and AI in arbitration and dispute resolution. The Supreme Court, in cases like **Shakti Bhog Foods Ltd. v. Kola Shipping Ltd.**<sup>23</sup> and **Trimex International FZE Ltd. v. Vedanta Aluminium Ltd**<sup>24</sup>, has acknowledged the legitimacy of using technology in arbitration and recognition of arbitration agreements through emails and other means of communication. In **Grid Corpn. of Orissa Ltd. v. AES Corpn.**<sup>25</sup>, the Supreme Court held that notice of appointment to the third arbitrator could be emailed and did not need to be submitted physically or in writing. Furthermore, the Court recognised the validity of arbitration agreements through emails without their physical signing, amending Section 7(4)(b)<sup>26</sup> of the Arbitration and Conciliation Act, 1996 to include “electronic means” as one of the ways to form arbitration agreements. The Court also introduced an e-Filing portal under the Mission Mode Project<sup>27</sup>, allowing the signing of documents electronically.<sup>28</sup> These initiatives underscore the crucial role of technology, emphasising their potential to enhance efficiency. Signing documents online makes the procedural aspect of arbitration hassle-free,

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<sup>22</sup> L. Jones, *The Hybrid Future of AI and Human Collaboration in ADR*, 56 *J. Legal Tech.* 87 (2023).

<sup>23</sup> *Shakti Bhog Foods Ltd. v. Kola Shipping Ltd.*, (2009) 2 SCC 134 (India).

<sup>24</sup> *Trimex International FZE Ltd. v. Vedanta Aluminium* (2010) 3 SCC 1 (India).

<sup>25</sup> *Grid Corpn. Of Orissa Ltd. v. AES Corpn.* 2005 SCC Online Ori 78. (India)

<sup>26</sup> Arbitration and Conciliation Act, 1996, No. 26, § 7(4)(b).

<sup>27</sup> Ministry of Electronics & Information Technology, Government of India, Mission Mode Projects.

<sup>28</sup> E-Committee, Supreme Court of India, e- courts Project — Phase II: Objective Accomplishment Report as per Policy Action Plan Document.

cost-effective, and speedy. Drawing from these initiatives, there are numerous other ways in which advanced AI can influence arbitration.

**Pyrrho Investments Ltd. v. MWB Property Ltd.**<sup>29</sup>, it was the first case that allowed predictive coding software to be used. In this case, the claimant had over 3 million documents to disclose that were relevant to this case. This software is a step up from linear review<sup>30</sup> which involved simply reviewing the document without analysing and presenting the most important documents at the top, enhancing human decision-making by integrating computer-assisted pattern recognition. The judgment highlights how predictive programs increase decision-making efficiency and mitigate the futility of manually going through large amounts of paperwork.

However, the success of such software depends only upon the availability of established arbitral awards and requisite information about the regulations, parties, and counsel. This is because AI acts based on data fed into the software. Since arbitration is an alternative to litigation and operates in a privatised setting, many centres, such as the International Chamber of Commerce (ICC) and Hong Kong International Arbitration Centre (HKIAC), do not publish total awards or only publish their summaries.<sup>31</sup> Although this confidentiality is maintained for privacy and security purposes, the lack of publishing of these awards will be a challenge if institutions want to implement predictive software.

Nevertheless, this issue has been addressed, and AI is stepping up. Technologies like the GAR Arbitrator Research Tool (GAR ART) gather anonymised data from parties in over 185 countries and can be used for arbitration and alternative dispute resolution (ADR).<sup>32</sup> This approach maintains a balance band and upholds confidentiality while paving the way for future AI applications in arbitration.

Thus, Indian arbitration can consider case prediction software, but that would require a robust database of all the information of past arbitral awards, which may violate certain privacy norms.

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<sup>29</sup> Pyrrho Investment Ltd. v. MWB Property Ltd., 2016 EWHC 256. (Eng)

<sup>30</sup> Oliver Browne and Hayley Pizzey, Pyrrho Investments Ltd v. MWB Property Ltd: A Landmark Decision on Predictive Coding in e-Discovery, Simmons & Simmons (Feb. 19, 2016)

<sup>31</sup> Kathleen Paisley and Edna Sussman, "Artificial Intelligence Challenges and Opportunities for International Arbitration," 11(1) N.Y. St. B.A Disp. Resol. Law. 11 (2022)

<sup>32</sup> Austrian Yearbook on International Arbitration 2019 (Wolters Kluwer, 2019).

**In the case of Doe v. GitHub, Inc.**<sup>33</sup>, the Anonymous developers sued GitHub, Microsoft, and OpenAI, alleging that GitHub's AI-powered coding assistant, Copilot, used licensed code to train its model without proper attribution, violating privacy and property rights. The case debates whether AI's use of training data constitutes fair use. While the case focuses on litigation, the underlying AI technology (natural language processing and machine learning) is like that used in AI-based ADR tools like virtual mediators (e.g., TheMediator.AI). These tools analyze inputs to propose resolutions, much like Copilot generates code suggestions.

The case indirectly supports AI's potential in ADR by demonstrating its ability to analyze complex inputs (code in this case, legal arguments in ADR). However, it also warns of risks like "hallucinations" (AI generating false outputs), which could undermine trust in AI-mediated resolutions if applied to ADR without human oversight.

## **Indian Laws Related to Arbitration**

India's arbitration laws are primarily governed by the Arbitration and Conciliation Act, 1996, which aligns with international standards like the UNCITRAL Model Law.

### **1. Arbitration and Conciliation Act, 1996**

The Arbitration and Conciliation Act, 1996, is the cornerstone of arbitration law in India, based on the UNCITRAL Model Law to regulate domestic and international arbitration and conciliation in India. It ensures arbitration agreements are enforceable, allows parties to refer disputes to arbitration, and outlines procedures for appointing arbitrators, conducting proceedings, and enforcing awards.

### **2. Indian Contract Act, 1872**

The Indian Contract Act, 1872, governs the formation and enforceability of contracts, including arbitration agreements, which are considered contracts under this law. Section 7 requires arbitration agreements to meet contract essentials (e.g., free consent, lawful object), while Section 10 ensures such agreements are valid if they involve competent parties and a lawful purpose.

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<sup>33</sup> Doe v. GitHub, Inc., No. 4:22-cv-06823, N.D. Cal., 2022

### **3. Code of Civil Procedure, 1908 (CPC)**

The Code of Civil Procedure, 1908, indirectly governs arbitration by regulating court involvement in arbitration proceedings under the Arbitration and Conciliation Act, 1996. Section 89 encourages courts to refer disputes to alternative dispute resolution, including arbitration, to reduce case backlogs. The CPC also applies when courts assist arbitration (e.g., appointing arbitrators under Section 11 of the 1996 Act) or enforce awards as court decrees under Section 36. Amendments to the 1996 Act reduced CPC's role to minimize judicial interference, but courts still intervene in cases of fraud or public policy violations.

### **4. Specific Relief Act, 1963**

The Specific Relief Act, 1963, allows courts to grant specific performance of contracts or injunctions, which can impact arbitration proceedings. Section 41(e) prevents courts from granting injunctions to stop arbitration proceedings unless there's fraud or irreparable harm, reinforcing arbitration's autonomy.

### **5. Stamp Act, 1899**

The Indian Stamp Act, 1899, requires certain documents, including arbitration agreements in some cases, to be stamped to be legally enforceable. However, the 2021 amendment to the Arbitration and Conciliation Act clarified that courts should not delay arbitration over stamp issues at the referral stage, streamlining the process. This Act's significance lies in its procedural impact on arbitration, as non-compliance can delay proceedings, though recent reforms aim to reduce such hurdles.

### **6. Commercial Courts Act, 2015**

The Commercial Courts Act, 2015, establishes specialized courts to handle commercial disputes, including those involving arbitration. It works alongside the Arbitration and Conciliation Act, 1996, by streamlining court processes for arbitration-related matters, such as appointing arbitrators or enforcing awards. The Act mandates strict timelines (e.g., 60 days for filing written statements) and promotes mediation before arbitration, aligning with Section 89 of the CPC.

## **Conclusion**

The integration of artificial intelligence into alternative dispute resolution represents a transformative development with the potential to make justice more accessible, efficient, and equitable. AI's ability to process vast amounts of information, identify patterns, and provide consistent analysis can enhance human decision-making while reducing costs and barriers to access. However, realizing this potential requires careful attention to the limitations and risks associated with AI technologies. The human elements of empathy, creativity, and moral judgment remain irreplaceable in many dispute resolution contexts. The most effective applications of AI in ADR will likely be those that thoughtfully combine technological capabilities with human expertise, creating hybrid systems that leverage the strengths of both.

As we move forward, the legal community must embrace the opportunities presented by AI while remaining vigilant about its risks and limitations. By doing so, we can harness the power of artificial intelligence to create a more just and accessible system of dispute resolution that serves the needs of all parties in our increasingly complex and interconnected world.

The future of ADR lies not in choosing between human and artificial intelligence, but in finding optimal ways to combine both in service of justice. This balance will require ongoing dialogue, experimentation, and adaptation as technology continues to evolve, and our understanding of its implications deepens. The stakes are high, but so too is the potential for creating a more equitable and effective system of justice for all.